

# **CPA II**

# **MANAGEMENT ACCOUNTING**

**Revision Kit**

FREE FREE FREE

## Acknowledgment

We gratefully acknowledge permission to quote from the past examination papers of the following bodies: **Kenya Accountants and Secretaries National Examination Board (KASNEB); Chartered Institute of Management Accountants (CIMA); Association of Chartered Certified Accountants (ACCA).**

We would also like to extend our sincere gratitude and deep appreciation to **Mr. Joel Mwaura** for giving his time, expertise and valuable contribution which were an integral part in the initial development of this Revision Kit. He holds the following academic honours, **BCOM (Finance and Banking option)** and **CPA**.

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## Part I: Introduction

This revision kit addresses needs of students preparing to sit ATC Level II examination for Cost Accounting.

The kit is divided into THREE main parts:

### **Part I: INTRODUCTION**

- Approach to Examinations
- Syllabus
- Topical guide to ATC past paper questions

### **Part II: REVISION QUESTIONS AND ANSWERS**

Past paper questions with model answers.

### **Part III: Comprehensive MOCK examination papers with sample answers**

To make effective use of this kit, candidates are advised to:

Read widely some of the books suggested in the reading list so as to have adequate background information relating to the issues raised in the revision questions.

Do the MOCK papers in part III under exam conditions and then check the solutions provided to assess their success in tackling the questions.

Given adequate and focussed preparation, this kit should be useful in enabling any student preparing for examinations in Systems Theory and Management Information Systems and related courses of Information Systems to pass with good grades in the exams.

## Approach To Examinations

Before the actual examination date, it is very important that the student:

- a) Attempts past paper questions: Knowing the syllabus content is one thing, but applying it to meet examination requirements is quite a different affair altogether. Attempting past paper questions familiarize the student with the techniques adopted by the examiner in testing the syllabus content.
- b) As far as possible, form discussion groups to solve problems together. Groups also avail more academic resources to the group members. Members also realize synergistic effects: they do more in a group than they could have done alone. Groups are especially effective in revising past paper questions.

As you sit the examinations:

- 1) Ensure you fully comprehend the INSTRUCTIONS. The Cost Accounting paper typically requires one to answer FIVE questions in THREE hours i.e. FOUR in Section I and ONE in Section II of the paper.
- 2) Assess the examination questions: take the first 10-15 minutes to go through the questions, sketching the answers on the question paper. Weigh the answer you are likely to produce per question against the marks. Note the questions you can do excellently, well, fairly and the difficult ones.
- 3) Based on your assessment, select the questions that will enable you to maximize your marks subject to time, memory and information constraints. Of course, you start by selecting those questions that you can tackle best.
- 4) Plan your time: Allocate every question at least 30 minutes, but not more than 33 minutes. Once time is up, go to the next question so as to maximize your overall score. Remember that the golden rule of diminishing returns in economics operates very effectively during examination time: your rate of earning marks is very high as you start a question, but drops seriously as you spend more time on the question.
- 5) You need to especially pay attention to question requirements such as:

**State/List:** requires you to enumerate points without explanation. **Define:** requires you to explain a term so as to bring out its meaning.

**Outline:** Involves listing points and giving a brief explanation, usually as brief as oneline statement.

**Discuss:** necessitate a thorough review of the issue concerned, bringing out its meaning, merits, demerits, and even alternatives.

- 6) You need to be especially cautious of chained questions whereby the answers to its latter parts depends on the answer to the first part. If you miss the first part, it is suicidal as it means missing the answer to the parts that follow too! Spend a few moments confirming that the initial part is accurate.
- 7) Answer the questions as asked by the examiner! Do not set a question for yourself and answer it.
- 8) Hammer the nail on the head: be as relevant, concise and straight to the point as possible. This maximizes your score per unit of time.

- 9) Scratch below the surface: If the question has not given you some information, determine how you can get it by using the given information. For example, the **examiner may not give you the investor's required rate of return but may give you the** real rate, inflation rate and the risk premium. The sum of the three would give you the required rate of return.
- 10) If you think the question is erroneous or unclear, state a working assumption and WRITE it down, and answer the question under that assumption.
- 11) Be as organized as possible, ensuring your answer flows logically. Paragraph your essays, and enumerate or bullet your points.
- 12) Be confident as you answer questions, even if you can not attempt all or the whole question. Avoid panic situations as they can lead to failure.
- 13) Ensure your handwriting is legible, and your work is neat.
- 14) If you forget an answer, query your mental database. You should leave some space and CONTINUE answering other questions. Your mind is a marvellous central processing unit that will retrieve the required data before long
- 15) If you are totally short of time, outline the answer briefly, depending on how acute your time shortage is. But avoid this situation as much as possible.
- 16) Clearly state the number of questions you have attempted, in the order that you have attempted them.

## Syllabus

### ATC – LEVEL II

### COST ACCOUNTING

To develop the candidate's understanding and ability to apply costing and budgeting concepts and techniques to organisations.

#### SPECIFIC OBJECTIVES

A candidate who passes this subject should be able to:

Determine cost of various products and services  
Prepare budgets for various purposes  
Evaluate performance and make decision through analytical techniques.

#### CONTENT

##### 5.1 Nature and Purpose of Cost Accounting and Budgeting

The nature of cost accounting and budgeting  
The role of cost accounting and budgeting in business management  
The purposes of cost accounting information  
Scope of cost accounting  
Relationship between cost accounting and financial accounting

##### 5.2 Cost Classification and Estimation

The purpose of cost classification  
Methods of cost classification: manufacturing versus non-manufacturing costs; elements of manufacturing costs, materials, labour and overheads; Elements of non-manufacturing costs;  
Administrative, selling and distribution costs: Behavioural classification of costs: variable versus fixed, direct versus indirect costs: Controllable versus non-controllable costs: Functional classification of costs; production, administration, selling and distribution  
Cost estimation; purpose of cost-estimation; methods of cost estimation; high-low, account analysis, engineering, visual fit and simple linear regression analysis methods

##### 5.3 Cost Accumulation

- Elements of costs; material, labour and overheads
- Determination of costs in manufacturing, service and retail industries
- Ascertainment of material costs; material cost records, purchasing procedures, receipt and issues of material, methods of valuing material issues, stock control procedures; labour costing: methods of labour remuneration, labour control procedures, maintenance of labour records; overheads: types of overheads;
- Manufacturing, distribution and administration service departmental cost allocation and apportionment, overheads analysis, overhead absorption rates, over or under absorption

**5.4 Marginal and Absorption Costing**

- Distinction between marginal and absorption costing
- Valuation of products under marginal and absorption costing
- Preparation of marginal and absorption statements; cost of production and profit determination
- Reconciliation of marginal profits and absorption profits
- Applications of marginal costing: break-even analysis and charts; cost volume profit analysis; special order, make or buy decisions

**5.5 Cost Accounting Systems**

- The flow of costs in a business enterprise
- Alternative systems for accumulating costs; integrated versus non-integrated systems
- Selection of a cost accounting system
- Product costing methods; specific order costing; job order costing, contract costing, batch costing; operational costing: process costing, joint products and by-products and service costing

**5.6 Budgeting and Budgetary Control**

- Nature and purposes of budgets
- Preparation of budgets; master budgets, functional (department) budgets, cash budgets, flexible and static budgets, proforma financial reports (income statements and balance sheets)
- Purpose of budgetary control
- Operation of a budgetary control system, organisation and co-ordination of the budgeting function

**Standard Costing**

- Relationship between standards and budgets
- Generation of standard cost information
- Variance analysis and performance evaluation
- Accounting entries and disposition of variances



## Part II: Revision Questions and Answers

### QUESTIONS - PAST PAPERS

KENYA ACCOUNTANTS AND SECRETARIES NATIONAL EXAMINATIONS BOARD

#### ATC LEVEL II

MAY 2008

Time allowed: 3 hours

Answer **FOUR** questions in **SECTION I** and **ONE** question in **SECTION II**. Marks allocated to each question are shown at the end of the question. Show **ALL** your workings.

#### SECTION I

##### QUESTION ONE

Healthcross Products Ltd commenced business on 1 May 2000. The company has approached their bankers for overdraft facilities. The bank has in turn demanded a cash flow statement in support of their request. The following information has been assembled for the purpose:

2000	Sales Sh „000“	Projections
		Purchases (units)
May	200	5,000
June	200	5,000
July	380	9,000
August	560	20,000
September	620	12,000

It is established that 60% of the customers pay within the month of sales, 20% the month following the month of sale and 15% the month following while the balance is normally uncollectible.

The current purchase price of Sh 20 per unit is expected to rise by 20% on 1 July and by another 25% on 1 August. Disbursements to suppliers are made in full in the month following the month of purchase.

The company anticipates paying general and administration expenses at the rate of Sh 80,000 a month payable as incurred while obligation under a medium term lease payable at the commencement of each quarter amount to Sh 50,000 per month.

Corporation tax of Sh 150,000 is due in September while Sh 200,000 will be paid to a supplier for purchase of an asset in the same month.

The bank balance on 30 June 2000 is expected to be Sh 50,000 while the company intends to maintain a minimum monthly balance of Sh 100,000. Financing attracts interest at the rate of 24% per annum debited in the month following the month of utilizing the overdraft.

**Required:**

- Sales/debtors" collection schedule on a monthly basis for the months of May to September 2000.** (6 marks)
- Purchases schedule on a monthly basis for the months of May to September 2000.** (3 marks)
- In columnar form, cash flow statement for the three months July to September 2000 on a monthly basis showing financing required, if any.** (11 marks)

**(Total: 20 marks)**

**QUESTION TWO**

The following information has been assembled by Sancross Products Ltd which manufactures and retails products A and B. The details given below relate to the year commencing 1 July 2000:

	<b>Standard</b>	<b>Product</b>	
	Price per kg	A kg	g
Direct material – M1	Sh 4	15	20
M2	Sh 5	14	12
	<b>Standard</b>	<b>Product</b>	
	Rate per hour	A hours	B hours
Direct labour – L1	Sh 8	20	15
L2	Sh 10	22	24

Fixed production overhead is applied on direct labour basis. Administration, selling and distribution expenses are recovered at the rate of 20% of production cost and profit loaded at 25% of standard production cost.

	<b>Product</b>	
	<b>A</b>	<b>B</b>
	<b>Sh „000"</b>	<b>Sh „000"</b>
Projected sales for the year	12,033	10,053

Finished goods stock position valued at production cost is expected to be as follows:

	<b>Product</b>	
	<b>A</b>	<b>B</b>
	<b>Sh „000"</b>	<b>Sh „000"</b>
1 July 2000	3,000	2,000
30 June 2001	5,000	4,000

Direct material stocks valued at standard prices are as follows:

	<b>Material</b>	
	M1	M2
	Sh „000“	Sh „000“
1 July 2000	200	250
30 June 2001	220	270

For the year to 30 June 2001, fixed production overhead has been estimated at Sh 1,800,000 and direct labour at 1,200,000 hours.

No opening or closing work-in-progress is anticipated.

**Required:**

- Production budget in units. (8 marks)
- Direct materials cost budget. (3 marks)
- Purchases budget in value. (6 marks)
- Direct labour cost budget. (3 marks)

**(Total: 20 marks)**

**QUESTION THREE**

The following information has been extracted from the books of Solarcross Ltd for the year to 31 March 2000:

	<b>Units „000“</b>
Production	30
Sales	24
Production cost incurred:	<b>Sh „000“</b>
Direct material	7,200
Direct labour	1,800
Variable overheads	1,500
Fixed overheads	2,700
Selling and administrations costs:	
Sales and salaries	450
Variable sales commission	300
Promotion and advertising	480
Other fixed costs	720

The company's unit selling price is Sh 550.

**Required:**

- Profit and loss statement under direct costing approach. (8 marks)
- Profit and loss statement under indirect costing approach. (8 marks)
- An explanation of the difference in profit or loss in (a) and (b) above. (4 marks)

**(Total: 20 marks)**

**QUESTION FOUR**

The following information relates to item P003 stocked by 2000 products Ltd for the month of April 2000:

Date	Receipts	Issues	Unit cost (Sh)
	Units	Units	
April 3	2,400		18
4		3,200	
6	2,600		20
12		2,700	
14	3,000		22
18	2,800		21
20		2,200	
22	2,600		23
25		3,800	
26	3,100		24
27	2,500		25
28	3,200		26
29		6,900	

The closing balance for March 2000 was a batch of 3,000 units received at a unit price of Sh 19.

**Required:**

- Stores perpetual inventory record for item P003 for May 2000 under LIFO system of stores issues. (14 marks)
- Closing stock valuation. (6 marks)

**(Total: 20 marks)**

**QUESTION FIVE**

Sannet Products Ltd who manufactures and retails products A, B and C employ sixty direct workers who work under a group of bonus scheme. The company engages three grades of workers who are paid a bonus of the excess of time allowed over time taken. The bonus paid is 75% of the workers' base rate and is shared by the workers in proportion to the time spent on the work. The following production data has been extracted from the company's records for April 2000.

Product	Units produced	Time allowed per unit	
A	320	63	
A	640	120	
C	1200	100	

Grade of worker	Number of direct workers	Base rate per hour (sh)	Hours worked per worker
1	20	30	30
2	8	27	64
3	32	24	50

**Required:**

- a) Percentage of hours saved to hours taken. (6 marks)
- b) Bonus due to the group. (7 marks)
- c) Gross earnings due to the group. (7 marks)

**(Total: 20 marks)****SECTION II****QUESTION SIX**

In spite of rapid expansion and growth, the management of Magicross Ltd are concerned that although the accounts presented disclose profits being made, the company's overdraft has been increasing.

**Required:**

As the Company's Cost Accountant, draft a report to management;

- a) Detailing factors that can cause an increase in bank overdraft in the face of increasing profitability. (10 marks)
- b) Giving options available for improving the company's liquidity without seeking external funds. (10 marks)

**(Total: 20 marks)****QUESTION SEVEN**

- a) What is flexible budgeting? (6 marks)
- b) Explain how flexible budgeting may be utilized to control costs. (14 marks)

**(Total: 20 marks)**

**YEAR 2008 SYLLABUS – PILOT PAPER****Time allowed: 3 hours**

**Answer any FOUR questions in SECTION I and ONE question in SECTION II. Marks allocated to each question are shown at the end of the question. Show ALL your workings.**

**SECTION I****QUESTION ONE**

- a) Define marginal costing and give its limitations. (6 marks)  
 b) The following data relate to Kenya Ltd for the year ended 31 December 1999.

	<b>Sh „000“</b>
Sales	24,000
Less: Total costs	<u>20,000</u>
Net profit	<u><u>4,000</u></u>

Fixed costs account for 40% of the total costs.

**Required:**

- i) Margin of safety. (2 marks)  
 ii) Break-even point in sales (2 marks)  
 iii) Sales required to earn profit of Sh 6,000,000. (2 marks)  
 iv) In order to increase sales, the management has the following two options:  
 1. To increase sales by 25% on incurring a sales promotion cost of Sh 2,500,000.  
 2. To increase sales by 15% on reducing selling price by 5%.  
 Advise the management on which option they should take. (8 marks)

**(Total: 20 marks)****QUESTION TWO**

- a) Explain the advantages of centralized system of maintaining stores. (5 marks)  
 b) Explain the assumptions behind the determination of Economic Order Quantity (EOQ). (5 marks)  
 c) The following information is given for material Y-20.

**Consumption:**

Annual	360,000 units
Maximum	1,200 units/day
Minimum	800 units/day
Normal	900 units/day
Re-order period	12 – 24 days
Re-order quantity	32,000 units

**Required:**

- i) Re-order level. (3 marks)  
 ii) Minimum stock level. (3 marks)  
 iii) Maximum stock level (3 marks)

**(Total: 20 marks)**

**QUESTION THREE**

- a) Briefly explain the following terms as used in process costing:
- i) Normal loss. (2 marks)
  - ii) Abnormal loss. (2 marks)
  - iii) Joint products. (2 marks)
- b) Timau Ltd produces a detergent which passes through two processes namely mixing and refining to completion. The following data relate to the refining process for the month of June 2000.

<b>Cost of opening stock:</b>	<b>Shs.</b>
Materials	100,000
Labour	25,000
Overheads	60,000

During the month 20,000 units were passed from the mixing to the refining process. Costs incurred during the month were:

	<b>Shs.</b>
Labour	125,000
Overheads	108,100
Other materials	45,300

At the end of the month 21,000 units had been completed and passed to finished goods while 4,000 were still in process having reached the following stages:

Materials	-	100%
Labour	-	40%
Overheads	-	60%

**Required:**

Refining Process Account.

(14 marks)

**(Total: 20 marks)**

**QUESTION FOUR**

A company has budgeted to produce 2,750 articles in 22,000 hours, with fixed overheads of Sh 88,000 and variable overheads of Sh 55,000. The company's production during the period of the budget was 2,700 articles in 21,500 working hours with fixed overheads costing Sh 90,000 and variable overheads Sh 58,000.

**Required:**

Calculate the following variances:

- a) Overhead variance (3 marks)
- b) Fixed production overhead variance. (3 marks)
- c) Variable production overhead variance (3 marks)
- d) Fixed production overhead expenditure variance. (3 marks)
- e) Fixed production overhead volume variance. (3 marks)
- f) Fixed cost productivity variance. (3 marks)
- g) Capacity variance (2 marks)

**(Total 20 marks)**

**QUESTION FIVE**

- a) In the context of budgetary control explain the main functions and importance of a cash budget. (5 marks)
- b) You are in charge of making forecasts and preparing budgets. You have been supplied with cost and revenue forecasts and details of payment as follows:

**1. Forecast of revenue and costs for the quarter ending 31 March 2001**

	January Shs.	February Shs.	March Shs.
<b>Direct</b>			
Materials (purchases)	112,000	100,000	135,000
Wages	90,000	80,000	100,000
<b>Overhead</b>			
Production	34,000	32,000	40,000
Administration	22,000	20,000	27,000
Selling and distribution	13,000	11,000	18,000
 Sales	 360,000	 350,000	 440,000

**2. Forecast of revenue and costs for the quarter ending 30 June 2001**

	April Sh.	May Sh.	June Sh.
<b>Direct</b>			
Materials (purchases)	90,000	67,000	79,000
Wages	72,000	54,000	63,000
<b>Overhead</b>			
Production	45,000	36,000	40,000
Administration	22,000	25,000	27,000
Selling and distribution	13,000	11,000	16,000
 Sales	 350,000	 360,000	 360,000

Cash balance on 1 April 2001

Sh. 90,000

**3. Other details**

- Period of credit allowed by suppliers averages two months.
- Debenture to the value of Shs. 125,000 are being issued in May 2001 and the amount is expected to be received during the month.
- A new machine is being installed at the end of March 2001 at a cost of Sh 150,000 and payment is promised in early May 2001.
- Sales commission of 3% is payable within one month of sales.
- A dividend of Sh 100000 is to be paid in June 2001.
- There is a delay of one month in the payment of overheads. There is also a delay in payment of wages averaging a quarter of a month.



- Twenty per cent of the debtors pay cash, receiving a cash discount of 4% and 70% of debtors pay within one month and receive a cash discount of 2 ½%. The other debtors pay within two months.

**Required:**

A cash budget on a monthly basis from the second quarter of the year 2001. (15 marks)

**(Total: 20 marks)**

**SECTION II****QUESTION SIX**

- a) What is the basic difference between account classification method and high-low method as applied in cost estimation? (4 marks)
- b) Distinguish between the following cost accounting terminologies:
  - i) Direct and indirect costs (4 marks)
  - ii) Cost center and cost unit (4 marks)
  - iii) Joint products and by-products (4 marks)
  - iv) Period costs and product costs (4 marks)

**(Total: 20 marks)**

**QUESTION SEVEN**

- a) What are the main duties of budget committee? (8 marks)
- b) What is meant by the term “Key factor”? (2 marks)
- c) Name and briefly explain five main key factors that affect budgeting process. (10 marks)

**(Total: 20 marks)**

December 2008

Time allowed: 3 hours

Answer **FOUR** questions in **SECTION I** and **ONE** question in **SECTION II**. Marks allocated to each question are shown at the end of the question. Show **ALL** your workings.

### SECTION I

#### QUESTION ONE

Nyali Mbali Ltd. are retailers who sell ceramic tiles. During the months of July to September 2000, there were price fluctuations. Due to the above problem the company had to adjust its selling prices.

The following transactions took place during the period.

3 July	Opening stock was 5,000 tiles valued at Sh 825,000.
10 July	Orders placed with the company increased, so extra tiles had to be obtained from Mombasa. Therefore 22,000 tiles were purchased at a cost Sh 140 each but in addition, there was a freight and insurance charge of Sh 5 per tile.
31 July	During the month 20,000 tiles were sold at a price of Sh 220 each.
4 August	A new batch of 14,000 tiles was purchased at a cost of Sh 175 per tile.
30 August	The sales for the month of August were 14,000 tiles at a selling price of Sh 230 each.
1 September	A further 24,000 tiles were purchased at a cost of Sh 195 each.
30 September	270,000 tiles were sold during September at price of Sh 240 each.

The cost accountant of Nyali Mbali Ltd decided he would apply first-in-first-out basis and weighted average methods of material pricing for purposes of comparison.

**Required:**

- (i) A stores ledger account using the two methods and showing stock values at 30 September 2000. (14 marks)
- (ii) The trading accounts using each of the above methods. (6 marks)

**(Total: 20 marks)**

#### QUESTION TWO

Lotus Ltd manufactures mobile telephones. The current operating level is 400,000 phones but full capacity is 550,000. The phones normally sell for Sh 1,500 per phone. Manufacturing cost data of 400,000 phones is as shown below:

	Sh,,000"	Sh,,000"
<b>Manufacturing costs</b>		
Variable costs	300,000	
Fixed costs	<u>187,500</u>	487,500
<b>Selling and administration costs</b>		
Variable (freight and commissions) costs	30,000	
Fixed costs	<u>60,000</u>	<u>90,000</u>
		577,500

A vendor offers to buy 100,000 phones for export at Sh 1,125 per phone. The buyer will pay for freight and no commissions will be paid. The acceptance of this offer will not affect the present sales. The managing director is reluctant to accept that offer because he believes that the offer price of Sh 1,125 is well below the manufacturing cost per unit.

**Required:**

- (i) Should the offer be accepted? (7 marks)  
 (ii) What factors should be considered before accepting the order? (3 marks)

Wassant Ltd manufactures a product that uses components made by the company. Due to market liberalization, the same component can be bought from an importer of the component. The management accountant of Wassant Ltd. has provided the following manufacturing data for the component:

	Shs.
Direct material	
10 kg of zero 1 @ Sh 25 per kg	250
Direct labour	
Department 1 0.75 hours x Sh 120	
2 0.6 hours x Sh 125	165
Variable overheads	80

Production overheads are recovered on basis of 20% of labour cost in both departments. The cost accountant anticipates that three-quarters of fixed overhead will be incurred irrespective of the decision made. The importer is willing to sell the component at Sh 510 per unit.

**Required:**

- a) Advise the management of Wassant Ltd whether to make or buy the component. (7 marks)  
 b) What other factors would Wassant Ltd consider before making the decision? (3 marks)  
**(Total: 20 marks)**

**QUESTION THREE**

Tinn Ltd produces a detergent which passes through two processes namely mixing and refining to completion. The following data relate to the refining process for the month of October 2000:

Opening stock	5,000 units
Cost of opening stock:	
	Sh
Materials	100,000
Labour	25,000
Overheads	60,000
Total cost	185,000

During the month, 20,000 units were passed from the mixing to the refining process. Costs incurred during the month were:

	Sh
Labour	125,000
Overheads	108,100
Other materials	45,300
Total cost	278,400

At the end of the month, 21,000 units had been completed and passed to finished goods while 4,000 units were still in the process having reached the following stages:

Materials	100%
Labour	80%
Overheads	60%

**Required:**

Refining process account.

(20 marks)

**QUESTION FOUR**

- a) Kanga Ltd has three production departments and two service departments. The following is their budgeted factory overheads for the year ended 30 September 2000:

	Shs.	Shs.
Production departments		
A	240,000	
B	180,000	
C	<u>220,000</u>	640,000
Service departments X	86,000	
Y	<u>44,000</u>	<u>130,000</u>
		770,000

The service department costs are to be re-apportioned as per the following percentages:

	A	B	C	X	Y
X	20	30	35	-	15
Y	30	30	30	10	-

**Required:**

Re-apportion the service department costs to the production departments using the simultaneous equation method. (10 marks)

- b) You are informed that the overheads are absorbed on the basis of the direct labour hours and the budgeted direct labour hours for the departments as given below:

Department	A	1000 hours
	B	2500 hours
	C	4000 hours

**Required:**

Determine the overhead absorption rates per hour for the three production departments. (10 marks)

**(Total: 20 marks)****QUESTION FIVE**

Tonga Ltd manufactures a single product whose cost structure is given below:

	Sh	Sh
<b>Direct materials:</b>		
Material A (2 kg @ Sh 25 per kg)	50	
Material B (3 litres @ Sh 75 per litre)	<u>225</u>	275
<b>Direct labour</b> (4 hours @ Sh 30 per hour)		120
Variable overheads		80
Fixed overheads		<u>25</u>
		500

The variable and fixed overheads are absorbed on the basis of the direct labour hours. During the year ended 31 October 2000, the company produced and sold 40,000 units and incurred the following costs:

	Sh	Sh
Direct materials:		
Material A (78,000 Kg)	205,000	
Material B (121,000 Kg)	<u>6,800,000</u>	7,005,000
Direct labour (156,000 hours)		4,900,000
Variable overheads		3,000,000
Fixed overheads		900,000
Total cost		<u>15,805,000</u>

**Required:**

- a) Material mix and yield variances. (8 marks)
- b) Variable overhead expenditure and efficiency variances. (8 marks)
- c) Standard cost card for 40,000 units. (4 marks)

**(Total: 20 marks)**

**SECTION II****QUESTION SIX**

What factors should be considered when designing a wages incentive scheme? (20 marks)

**QUESTION SEVEN**

Explain the term budgetary control and state its importance to a business firm. (10 marks)

State and briefly explain the limitations of budgets in the management of business firms.

(10 marks)

**(Total: 20 marks)**

MAY 2009

## SECTION I

## QUESTION ONE

Explain the reason(s) why construction companies find it prudent to declare profits on uncompleted contracts. (2 marks)

On 4 May 1999, Pendo Construction Company was contracted by Mara Paradise Ltd. to construct a leisure park in Nairobi at a contract price of Sh. 950,000,000. Work commenced on the contract on 28 July 1999. Retention money was agreed at 10% of work certified. At the end of the first year, no profits were declared as the contract was considered to be in its infancy

The following details relate to the contract for the year ended 31 December 2000:

Sh"000

Balances brought forward 1.1.2000

Materials on site	4,500
Accrued wages	1,250
Plant (cost)	150,000
Cost of work done	158,000
Work certified to 31 December 1999	160,000

Transactions during the year.

Materials delivered to site:

Ex-stores	14,600
By suppliers	128,400
Additional plant (cost)	120,000
Subcontractors fees	18,450
Consultancy fee	28,000
Inspection fee	500
Salaries and wages	160,000
Head office expenses	1,200
Material transfers out	15,000
Materials sales (cost Sh 19,800)	22
Plant hire	250
Direct expenses	2,600
Total cash received from contractee	580,000
Work certified during the year	660,000
Cost of work uncertified	42,000

Balances carried forward:

Materials on site	51,000
Wages accrued	2,800

Plants have been purchased for use on this contract. Pendo Construction Company provides for depreciation on plant at 12 1/2% per annum on cost.

**Required:**

- (i) Contract account for the year to 31 December 2000, clearly showing the profits/(losses) on contract for the year. (10 marks)
  - (ii) Valuation of work-in-progress. (4 marks)
  - (iii) Account of Mara Paradise Ltd. (4 marks)
- (Total 20 marks)**

**QUESTION TWO**

Nyundo Ltd manufactures a product whose standard variable cost is given below:

Direct materials (2 kg @ Sh 3)	6
Direct labour (0.75 hours @ Sh 4)	3
Variable overheads	1

The company treats fixed costs as period costs and therefore they are not charged to products.

The following information relates to the month of March 2001.

	1/3/2001	31/3/2001
	Sh	Sh
Stocks (all at standard cost)		
Raw materials	12,000	6,000
Finished goods	36,000	42,500

The following information is available for the month of March 2001:

	Sh
Sales @ Sh 20 per unit	200,000
Material purchases @ Sh 3.50 per kg	42,000
Direct labour cost (8000 hours)	30,000
Variable overheads	12,000
Material price variance (adverse)	21,000

The management is wondering whether they could have performed better.

**Required:**

Calculate the following variances in each case stating two possible causes:

- a) Material usage variance (6 marks)
- b) Labour rate variance. (4 marks)
- c) Labour efficiency variance. (4 marks)
- d) Variable overhead expenditure variance: (3 marks)

e) Variable overhead efficiency variance.

(3 marks)

**(Total: 20 marks)**

### QUESTION THREE

Bando Ltd has been using their own vehicle to transport their employees to and from work. The shift manager imagines that this may be too expensive for the organization and suggests that using hired transport may result in some savings for the organization.

The accountant has assembled the following data for consideration:

	Shs.
Own transport:	
Cost of vehicle	1,500,000
Scrap value of the vehicle	300,000
Annual insurance premium	145,000
Annual road licence	6,000
Repairs and maintenance per year	90,000
Drivers monthly salary	25,000
Tyres and tubes per year	24,000
TLB license per year	2,500
Cost of petrol per kilometer	5
Inspection fee	2,000

It is also established that the expected life of the vehicle is 5 years and that the distance coverage is 15,600 Km per year.

If the company opts for hired transport it will be required to pay monthly hire charges of Sh 40,000 and drivers allowance of Sh 10,000 per month.

#### Required:

Compute the cost per kilometer if the company:

- i) Uses its own transport; (10 marks)
- ii) Hires transport facilities from outside. (4 marks)

b) Is the difference between a(i) and a(ii) above significant? What other factors should the company take into account in deciding the alternative to be adopted? (6 marks)

**(Total: 20 marks)**

### QUESTION FOUR

Samba Ltd. produces three joint products in two processes. All the units pass through process I to process II. At the end of process II, the joint products emerge. The data below relates to the operations for the first quarter of 2001.



	<b>Process I</b>	<b>Process II</b>
	<b>Shs.</b>	<b>Shs.</b>
Direct materials (40,000kg @ Sh 2.50)	100,000	-
Direct labour	60,000	92,000
Overheads	40,000	118,000
Normal loss as a percentage on input	10%	-
Scrap value per unit	Sh 2	
Output in units:	35,000	

No loss is expected in process II.

There were no opening or closing work-in-progress. The output and the selling prices were as follows:

<b>Joint product</b>	<b>Output (Kg)</b>	<b>Selling price (Sh)</b>
X	10,000	20
Y	16,000	15
Z	9,000	16

**Required:**

- Process I account. (6 marks)
- Abnormal loss/gain account. (4 marks)
- Determine the profits or losses from each joint product if costs are apportioned using sales value method (6 marks)
- Briefly explain how the physical limits method is different from sales value method in (c) above. (4 marks)

**(Total: 20 marks)**

**(Calculations are not required)**

**QUESTION FIVE**

Njoro Ltd. has been manufacturing and selling three products in Nairobi. The market demand for the products on average has been as follows:

<b>Product</b>	<b>Annual demand</b>
	<b>Units</b>
Coolo	20,000
Besto	25,000
Zedo	48,000

The manufacture of the products requires time on a machine as follows:

<b>Product</b>	<b>Time required</b>
Coolo	30 minutes
Besto	45 minutes
Zedo	20 minutes

The following details are available for each of the products:

	Coolo	Besto	Zedo
	Sh	Sh	Sh
Direct materials	15	12	14
Direct labour	25	20	23
Variable overheads	5	3	6
Fixed overheads	7	5	8
Profit per unit	8	8	8
Selling price	60	48	59

Due to the prevailing drought and power rationing, the company can only manage to get a maximum of 30,000 hours on the machine per year.

**Required:**

- Rank the products in order of priority if there is a limitation of the machine hours. (9 marks)
- Advise the management on the most profitable product mix. (3 marks)
- Determine the resultant net profits from the mix in (b) above. (8 marks)

**(Total: 20 marks)**

## SECTION II

### QUESTION SIX

- Describe the duties of a cost accountant in an organization. (4 marks)
- Differentiate the following terminologies:
  - Relevant costs and irrelevant costs (4 marks)
  - Cost center and cost unit. (4 marks)
  - Semi-fixed and semi variable costs. (4 marks)
  - Sunk costs and product costs (4 marks)

**(Total 20 marks)**

### QUESTION SEVEN

- State the assumptions that underlie the break-even analysis. (10 marks)
- Explain how you would analyze and classify the marketing costs. What purposes are served by such analysts and classification? (10 marks)

**(Total 20 marks)**

**DECEMBER 2009****Time allowed: 3 hours**

**Answer FOUR questions in SECTION 1 and ONE question in SECTION II. Marks allocated to each question are shown at the end of the question. Show ALL your workings.**

**SECTION ONE****QUESTION ONE**

a) Briefly explain the meaning of the following terms as used in standard costing:

- i) Basic standards (2 marks)
- ii) Current standards (2 marks)
- iii) Ideal standards (2 marks)
- iv) Normal standards (2 marks)

b) The following data relates to the production department of Wananchi Production Company Limited for the week ended 31 August 2001.

Standard output for 40 hour week	14,000 units
Standard fixed overhead	Sh 140,000
Actual output	12,000 units
Actual hours worked	32 hours
Actual fixed overhead	Sh 150,000

**Required:**

- i) The expenditure and volume variances. (4 marks)
- ii) Analysis of the volume variance between capacity and productivity. (4 marks)
- iii) Briefly comment on two possible causes of each variance in (i) above. (4 marks)

**QUESTION TWO**

Tindo Ltd buys and sells product Q-3. It values stock on the basis of last in first out (LIFO). At 1 June 2001, stock in hand consisted of 4,500 units which were acquired at Sh.50 per unit. The operations for the month were as follows:

<b>Date</b>	<b>Purchases</b>	<b>Sales</b>
June 1	5,000 @ Sh 48	
4		6,000 @ Sh 60
5	5,500 @ Sh 49	
7	4,000 @ Sh 50	
11		7,000 @ Sh 61
12	5,000 @ Sh 50	
13	6,000 @ Sh 47	
18		7,000 @ Sh 62
19		8,000 @ Sh 64
20	6,000 @ Sh 49.50	
21		5,000 @ Sh 65
22	7,000 @ Sh 50	
25	6,000 @ Sh 49	
26	2,000 @ Sh 47	
28		500 @ Sh 60
29		14,000 @ Sh 64

The company incurred operating costs of Sh 450,000 during the month.

**Required:**

- a) Stores ledger card (14 marks)
- b) Closing stock valuation (2 marks)
- c) Trading account for the month (4 marks)

**(Total: 20 marks)**

**QUESTION THREE**

- a) (i) Distinguish between the terms “waste” and “spoilage”. (2 marks)
- (ii) Briefly explain three possible methods of accounting for spoilage. (5 marks)
- b) Gitoro Manufacturing Company, manufactures a single product that is processed sequentially in three departments I, II and III. The following information is obtained in respect of process in departments II for the month of November 2001.

Opening work-in progress was 2,600 units valued at Sh 6,500.

Degree of completion:

Materials	60%
Labour	50%
Overheads	40%

The transfer from department I during the month was 13,000 units valued at Sh 19,500.

Units transferred to department III were 10,600.

Direct material added in department II amounted to Sh 15,900.

Direct labour amounted to Sh 13,100.

Overhead amounted to Sh 17,500.

Work in progress at 30 November 2001 was 1,500 units which had the following degrees of completion:

Materials	70%
Labour	40%
Overheads	40%

During the month, 900 units were scrapped. Normal loss was 10% of production and the units scrapped realized Sh 2 per unit.

**Required:**

A statement of production, cost and equivalent units showing:

- i) Equivalent units of production by element of cost (4 marks)
- ii) Valuation of finished goods (3 marks)
- iii) Valuation of closing work in progress (3 marks)
- iv) Abnormal gain/loss in units (3 marks)

**(Total 20 marks)**

**QUESTION FOUR**

- a) State and briefly explain three assumptions underlying the break-even theory. (6 marks)
- b) Jamii Company Ltd manufactures and sells a single product. The following information regarding the company's operations for the year ended 30 September 2001 was presented to you.

Profit and loss account for the year ended 30 September 2001

	Sh"000	Sh"000
Sales		30,000
Less:		
Production costs		
Direct material	6,500	
Direct labour	5,400	
Production overhead variable	<u>7,000</u>	
Prime costs		<u>18,900</u>
		11,100
Other expenses:		
Selling – Variable	2,600	
- Cost	1,997	
Administration	<u>2,100</u>	<u>6,697</u>
Net profit		<u>4,403</u>

The following changes are expected to occur during the year ending 30 September 2002:

1. Selling price will be adjusted downward by 3% in order to attract more customers.
2. Material prices will rise by 2% due to inflation.
3. There will be a reduction in labour cost of 4%.
4. Production overheads will increase by 3%.
5. Increase in the efficiency of sales persons will reduce direct selling costs by 5%. All other factors are expected to remain constant.

**Required:**

- a) Break-even point in sales value (4 marks)
- b) The margin of safety in sales value (2 marks)
- c) The sales value at which profit of Sh 4.5 million will be achieved (2 marks)
- d) A summary operating statement that shows the net profit of Sh 4.5 million in (c) above. (6marks)

**QUESTION FIVE**

- a) In job order costing system, production overhead absorption could be based on:
  - i) Direct labour rate
  - ii) Percentage of direct materials

Explain in which circumstances each of these bases are appropriate. (4 marks)

- b) Mutindwa Ltd. employs a job order costing system in establishing the prices to charge for different welding orders. Normally, certain employees set up work before the main operation is completed by other employees. The cost of labour engaged in setting up is charged to overhead expenses.

During the period ended 30 September 2001, 1,250 hours were spent on setting up at a cost of Sh 30,000. During this period the following costs were incurred on three jobs:

	Shs.
Direct material	66,000
Direct labour	90,000
Overhead expenses (including set up costs)	<u>144,000</u>
	300,000

Other information that relates to the jobs include:

	Job A	Job B	Job C
Direct material costs	Sh 36,320	4,200	25,480
Direct labour (hours) excluding set-up time	2,400	300	1,800
Setting-up (hours)	375	250	625

Costing for the jobs is carried out by the use of hourly rates for direct labour and for overheads. However, a new system is being proposed whereby there will be hourly rates for direct labour, for setting labour and for overheads excluding the cost of setting-up time.

**Required:**

- The hourly rate under the existing system. (4 marks)
  - The hourly rate under the proposed system (4 marks)
  - Cost statement for the three jobs using the existing systems approach to costing. (8 marks)
- (Total: 20 marks)**

## SECTION II

### QUESTION SIX

- Explain the meaning of the following terms:
    - Integrated accounting system. (2 marks)
    - Interlocking accounting system. (2 marks)
  - Briefly explain the items of expenditure that are unique to the two systems of accounting in (a) above. (4 marks)
  - What factors would influence the selection of accost accounting system? (6 marks)
  - State and briefly explain three bases of cost classification. (6 marks)
- (Total: 20 marks)**

### QUESTION SEVEN

- Briefly differentiate the following terminologies used in cost accounting.
  - Relevant range and relevant cost. (2 marks)
  - Controllable costs and non-controllable cost. (2 marks)
  - Perpetual inventory system and continuous inventory system. (2 marks)
  - Profit center and cost center. (2 marks)
  - Opportunity cost and incremental cost. (2 marks)
- A company prepares the following main budgets:
  - Sales budget.
  - Manufacturing budget.
  - Purchasing budget.
  - Selling and administration overheads budget.
  - Budgeted balance sheet.

**Required:**

Describe briefly the relationship between these budgets and the content of each. (10 marks)

**(Total: 20 marks)**

MAY 2010

Time allowed: 3 hours

Answer **FOUR** questions in **SECTION 1** and **ONE** question in **SECTION II**. Marks allocated to each question are shown at the end of the question. Show **ALL** your workings.

### SECTION ONE

#### QUESTION ONE

Baobab fabricators Ltd has been facing a lean financial spell for the past two years. Profits have been declining steadily and results of the preceding year showed total losses amounting to Sh 2,000,000, the first time the company had not reported profits in its 10-year history.

The chairman and the board of directors have been agonizing on the remedial steps to implement to arrest the situation. Four competing proposals have been suggested by a task force set up some months back aimed at boosting sales and improving efficiency of operations in the current year. You, as a member of the task force, have been invited to attend the next board meeting which will deliberate on the proposals. You know the following facts:

1. The target profit for the current year is Sh 4,000,000 regardless of the proposal that will be adopted.
2. The company's fixed costs currently amount to Sh 20,000,000 per year.
3. The company can sell up to a maximum of 12,000 units of its product in the local market and unlimited quantities in a neighbouring country. For the sales in the local market, unit variable costs amount to Sh 5,000, while for the sales in the neighbouring country, an extra Sh 500 per unit is incurred in transportation expenses.
4. The same selling price normally prevails both in the local market and neighbouring country.
5. Sales for the past year amounted to 9,000 units, all in the local market.

The main requirements of the four competing proposals are as follows:

Proposal A: The company should improve the quality of packaging of its products at a cost of Sh 500 a unit.

Proposal B: The company should spend Sh 2,000,000 on an advertising campaign.

Proposal C: The company should cut the selling price by Sh 500 per unit.

Proposal D: The company should buy efficient machinery. This would cut the variable cost per unit by Sh 1,000 at all levels of sales.

#### Required:

- a) For proposals A, B, and C, determine the number of units to be sold in the neighbouring country in order to achieve the target profit. (12 marks)
- b) If proposal D is adopted and sales remain constant at 9,000 units, determine the maximum increase in fixed machine cost if the target profit is to be achieved. (4 marks)

Briefly explain four benefits of using break even analysis

(4 marks)

(Total: 20 marks)

## QUESTION TWO

To manufacture one unit of “Bingwa”, a canned food product, Jumbo Processors Limited requires materials costing Sh 2,800 and must employ two hours of direct labour. The company's overheads are all fixed and amount to Sh 768,000 per month. The product retails at a price of Sh. 7,200 per unit.

Labour, which is paid at Sh 360 per hour is currently very scarce, while demand for “Bingwa” is heavy.

Recently, a special offer was made to the company to take up a contract to manufacture a variant of “Bingwa”. This offer is worth Sh 648,000. The company's cost accountant has been asked to carry out an analysis to establish whether or not it would be cost effective for the company to undertake the contract.

The following information relates to the special offer.

- 1) It is estimated that the contract would require 20 hours of direct labour.
- 2) The material needed would cost Sh 136,800.
- 3) A specialized component would have to be incorporated into the product. The specialized component could either be purchased from an outside supplier for Sh 36,000 or alternatively, it could be made by Jumbo Processors Ltd itself using material costing Sh 14,400 and an additional labour time of 12 hours.

### Required:

- a) The contribution per unit of the key factor in the production of “Bingwa” (5 marks)
- b) Should Jumbo Processors Ltd make or buy the specialized component (5 marks)
- c) Decision on whether or not to accept the special offer to make the variant. (5 marks)
- d) Explain the relevance of the following costs in the decisions in (b) and (c) above.
  - i) Fixed costs (2 marks)
  - ii) Total wage bill. (3 marks)

(Total: 20 marks)

## QUESTION THREE

Asante Sana Ltd. is a manufacturing company which produces and sells a single product “Dawa MOTO”.

Cost	Shs.
Variable manufacturing	45
Fixed manufacturing	35
Variable selling and administration	8
Fixed selling and administration	<u>30</u>
	118

Fixed manufacturing costs per unit are based on a predetermined rate established at a normal activity level of 18,000 production units per period. Fixed selling and administration costs are absorbed into the cost of sales at 20% of the selling price. Under/over recovery of overheads are transferred to the profit and loss account at the end of each period.

The following information has been provided for two consecutive periods:



	Period 1	Period 2
Sales: (units)	17,000	18,000
Value	Sh 2,550,000	Sh 2,700,000
Variable manufacturing costs	Sh 720,000	Sh 828,000
Variable selling and administration costs	Sh 136,000	Sh 144,000
Fixed manufacturing costs	Sh 640,000	Sh 630,000
Fixed selling and administration costs	Sh 540,000	Sh 540,000
Production (units)	16,000	18,400

**Required:**

- Income statements for each of the periods under the full costing method. (5 marks)
- Income statements for each of the periods under the direct costing method. (5 marks)
- Reconciliation for each period of the profit/loss obtained under the two methods in (a) and (b) above (4 marks)
- Outline three arguments in favour of
  - The full costing method (3 marks)
  - The direct costing method (3 marks)

**(Total: 20 marks)****QUESTION FOUR**

Lamu Ltd produces a popular brand of biscuits which sells under the brand name "Tamu". The biscuits are sold in packets of 100 grammes at Sh 20 each.

To reduce the distribution costs, the firm is only selling its products through the supermarkets at Sh 12 per packet.

The budgeted standards for the year ended 31 December 2001 are given below:

Annual fixed manufacturing costs	Sh 560,000
Direct materials per packet	Sh 2.50
Direct labour cost per hour	Sh200.00
Variable factory overheads per hour	Sh275.00
Selling costs per unit (variable)	Sh 9.80
Output: Number of packets per hour	100
Number of working hours per week	40

At the end of the year, an analysis of the results revealed the following:

- The actual selling price was Sh 12.75 per unit.
- Direct material costs per packet reduced by 5%.
- The actual production rate was 98 packets per hour, although there was no idle time.
- All units produced were sold.
- Actual fixed costs were Sh 480,000.
- There was no change in the selling and distribution cost per unit.
- Actual variable overheads amounted to Sh 550,000.

**Required:**

- The original (static) budgeted income statement for the year (6 marks)
- Actual income statement to the year (6 marks)
- The flexed budgeted income statement for the year (8 marks)

**(Total: 20 marks)****(Assume a 52-week year)**

**QUESTION FIVE**

- a) List and explain the advantages of standard costing. (5 marks)
- b) Roasters Limited is a coffee-blending firm. It produces a special blend of coffee known as “Utopia Blend” by mixing two grades of coffee “AB” and “QP” as follows:

Material	Standard mix ratio	Standard price per Kg
AB	40%	Sh 120
QP	60%	Sh 100

A standard loss of 15% is expected. During the month of March 2002, the company produced 2,500 kg of “Utopia Blend”. The actual quantities blended were as follows:

	Quantity used	Cost (Sh)
AB	1,400kg	175,000
QP	1,600kg	152,000

**Required:**

Calculate the following variances

- i) Material price variance (2 marks)
- ii) Material usage variance (2 marks)
- iii) Material mix variance (4 marks)
- iv) Material yield variance (4 marks)
- v) Material cost variance (3 marks)

**(Total: 20 marks)**

**SECTION II****QUESTION SIX**

- a) Define “Activity- Based Costing” and explain how it operates in practice (10 marks)
- b) Discuss the advantages and disadvantages of “Activity –Based Costing”. (10 marks)

**(Total 20 marks)**

**QUESTION SEVEN**

- a) State and briefly explain the essential requirements of an effective stock control system. (12 marks)
- b) State and explain the possible causes of discrepancies revealed by physical stock counts and explain how they can be addressed. (8 marks)

**(Total: 20 marks)**

**DECEMBER 2010**

Time allowed: 3 hours

Answer **FOUR** questions in **SECTION 1** and **ONE** question in **SECTION II**. Marks allocated to each question are shown at the end of the question. Show **ALL** your workings.

**SECTION ONE****QUESTION ONE**

Mwangaza Metals Ltd fabricates steel products for export to the COMESA region. The products go through three processing departments: forming, machining and finishing.

The following information relates to operations for the year ended 31 October 2002:

- Budgeted manufacturing costs for the year ended 31 October 2002:

	Departments			Total Sh „000“
	Forming Sh „000“	Machining Sh „000“	Finishing Sh „000“	
Direct materials				340,000
Direct labour	80,000	40,000	120,000	240,000
Manufacturing overheads	20,000	80,000	60,000	160,000

- The actual manufacturing costs incurred for the year ended 31 October 2002 were as follows:

	Departments			Total Sh „000“
	Forming Sh „000“	Machining Sh „000“	Finishing Sh „000“	
Direct materials				360,000
Direct labour	88,000	38,000	144,000	270,000
Manufacturing overheads	24,000	72,000	78,000	174,000

- While there were no finished goods or work-in progress inventories at the beginning of the year, stocks on 31 October 2002 were made up as follows:

	Shs.
Work-in-progress	39,000,000
Finished goods	121,000,000

The above balances include actual direct materials, direct labour and absorbed overhead costs.

- Manufacturing overhead costs are absorbed into products on the basis of direct labour costs, at rates pre-determined at the beginning of the year, using the annual budgeted data.

Two alternatives of absorbing the overheads could be employed:

- Use a single factory wide manufacturing overhead rate.
- Use separate departmental manufacturing overhead rates.

5. The policy of the company is to dispose of over (under) absorbed overheads at the year-end by allocating the amount between ending inventories and cost of goods sold in proportion to their unadjusted cost balances.

**Required:**

- a) Using the separate departmental manufacturing overhead rates:
- Determine the total over (under) absorbed overheads for the year. (6 marks)
  - Allocate the over (under) absorbed overheads to the relevant accounts. (6 marks)
  - Prepare a journal entry to record the disposal of the over (under) absorbed overhead. (4 marks)
- b) A particular order code named E20, from a customer was worked on and completed during the year. The following costs were incurred in relation to the order.

		Shs.	Shs.
Direct materials			3,000,000
Direct labour:	Forming	400,000	
	Machining	380,000	
	Finishing	480,000	1,260,000

**Required:**

Using the factory wide absorption rate, determine total overhead applied to the order (E20). (4 marks)

**(Total: 20 marks)**

**QUESTION TWO**

Nyungu Ltd is a manufacturer of earthenware products produced in two processes. Material is introduced at the beginning of the process in the Moulding department and additional material is added at the end of the process in the Finishing department. Conversion costs are applied uniformly throughout both processes. As the process in the moulding department is completed, goods are immediately transferred to the next department; as goods are completed in the Finishing department, they are transferred to finished goods store.

Data for the month of October 2002 are as follows:

		Departments	
		Moulding	Finishing
Work-in-progress, beginning:			
	Units	10,000 units	12,000 units
	Stage of completion	2/5 completed	2/3 completed
	Costs: Material cost (sh)	6,000,000	9,800,000
	Conversion cost (Sh)	1,500,000	11,200,000
	Total (Sh)	7,500,000	21,000,000
Units started during the month		40,000 units	?
Material costs added during the month (Sh)		22,000,000	13,200,000
Conversion costs added during the month (Sh)		18,000,000	63,000,000
Units completed during the month		48,000 units	44,000 units
Work in progress, ending:			
	Units	2,000 units	16,000 units
	Stage of completion	1/2 completed	3/8 completed

**Required:**

- a) The cost of goods transferred out of each of the two departments during the month of October 2002. (10 marks)

- b) The ending inventory costs for goods remaining in each of the two departments on 31 October 2002. (10 marks)  
(Total: 20 marks)

### QUESTION THREE

- a) Name four ways in which a company could finance a cash deficit.
- b) On 1 November 2002, Digital Trading Company was in the process of forecasting cash receipts and disbursements for the two months to 31 December 2002. On this latter date, a six month term loan of Shs. 8 million would mature and be payable with the interest at 15% per annum. The trial balance of the company as at 31 October 2002 showed, in part, the following:

	Sh „000“	Sh „000“
Cash	800	
Debtors	14,400	
Provision for bad debts		1,260
Stock	7,000	
Creditors		7,350

Sales terms call for a 2 per cent discount, if paid within ten days of the month after purchase with the balance due by the end of the month after purchase. Experience has shown that 70 per cent of the invoices are paid within the discount period, 20 per cent by the end of the month after purchase and 8 per cent the following month while the rest are uncollectible. All sales are on credit.

The unit sales price of the company's product is Sh 20. Actual and projected sales quantities are as follows:

Month	Units
September 2002	520,000 (actual)
October 2002	1,000,000 (actual)
November 2002	1,200,000 (projected)
December 2002	600,000 (projected)
January 2003	480,000 (projected)

Total estimated sales for year ending 20 June 2003 is Sh 120 million.

All purchases are due for payment within fifteen days. Thus approximately 50 per cent of the purchases in a month are due and payable in the next month. Unit cost is Sh 14.

Target ending stocks at the end of each month are 200,000 units plus 25 per cent of the following month's sales.

Budgeted selling and administrative expenses for the year are Sh 32 million of which Sh 12 million is considered fixed and includes depreciation expenses of Sh 2,400,000. The remainder of selling and administrative expenses varies with sales. Fixed selling and administrative expenses are incurred evenly on a time basis. Both fixed and variable selling and administrative expenses are paid as incurred.

#### Required:

A statement of budgeted cash receipts, disbursements and balances for each of the months of November and December 2002. (16 marks)

(NB: Show supporting schedules)

**QUESTION FOUR**

On 1 November 2001, Jiwe Construction Company Ltd was awarded a contract to construct an office block for the Association of Women Accountants of Kenya (AWAK). The office block is scheduled for completion by 31 March 2003.

The following information extracted from the books of Jiwe Construction Company Ltd relates to the contract for the year ended 31 October 2002:

	Shs.
Material issues – From central stores	5,500,000
- By suppliers, direct to site	14,200,000
Labour charges	10,100,000
Amounts paid to subcontractors	4,501,000
Plant and machinery bought on 1 November 2001	6,000,000
Loose tools and consumables	126,000
Head office expenses - apportioned	1,184,000

On 31 October 2002, the stock of materials at site amounted to Sh 2,100,300. On the same date there were amounts outstanding with respect to wages, Sh 350,000 and for subcontract work, Sh 25,000.

Jiwe construction Company Ltd received Sh 36 million from AWAK which represents the amount of certificate issued by their architect s in respect of work completed to 31 October 2002 after deducting 15% retention money. It is estimated that work costing Sh 360,000 is not covered by this certificate.

You are also informed that:

1. The plant and machinery specifically purchased for the project is to be depreciated at 20% straight-line with no residual value.
2. That Jiwe Construction Company Ltd only takes 2/3 of the profit on work certified to its revenue account.

**Required:**

- a) Contract account for the period ended 31 March 2002. (8 marks)
- b) Profit to be taken to the credit of the company's revenue account. (4 marks)
- c) Calculate the work-in-progress. (4 marks)
- d) Illustrate how the balances on the contract account would appear in the balance sheet of the company. (4 marks)

**(Total: 20 marks)**

**QUESTION FIVE**

- a) "In practice there is no cost that can be described as, entirely and always variable or fixed."

Comment on the above statement.

(4 marks)

- b) Kenya Auto Assemblers Ltd assembles cars from imported knocked-down-kits. The company has been operating at 60% capacity, assembling 3,000 cars per year.

The following information relates to the company's operations at two different levels of capacity.

Costs	Level of activity	
	60%	80%
	Sh „000“	Sh „000“
Direct materials	600,000	800,000
Direct labour	150,000	200,000
Indirect labour	200,000	240,000
Factory fuel and power	10,000	130,000
Factory repairs	<u>130,000</u>	<u>155,000</u>
Total cost	<u>1,180,00</u>	<u>1,525,000</u>

**Required:**

Using the high-low method, establish the cost equations of the form  $y = a + bx$  for each of the following costs for the company.

1. Direct materials (2 marks)
2. Direct labour. (2 marks)
3. Indirect labour. (2 marks)
4. Factory fuel and power. (2 marks)
5. Factory repairs. (2 marks)

(ii) Using the results obtained in (i) above, estimate the total costs at 120% level of operation showing clearly the variable and fixed components of mixed costs. (6 marks)

**(Total: 20 marks)**

**SECTION II****QUESTION SIX**

- a) Distinguish between cost accounting and financial accounting. (6 marks)
- b) In a multi-department production situation, explain the following:
  - i) The role of service departments. (3 marks)
  - ii) The reasons why it is important to distribute service department costs to production departments. (3 marks)
  - iii) Four methods of distributing service department costs in the case where service departments also provide services to each other. (8 marks)

**(Total: 20 marks)**

**QUESTION SEVEN**

- a) State and explain five assumptions that underlie the cost-volume-profit analysis. (10 marks)
- b) Explain the meaning and significance of the following terms in the context of the cost-volume –profit analysis:
  - i) Relevant range. (2 marks)
  - ii) Margin of safety. (2 marks)
  - iii) Sensitivity analysis. (2 marks)
  - iv) Contribution margin per unit. (2 marks)
  - v) Contribution sales ratio. (2 marks)

**(Total: 20 marks)**

JUNE 2003

Answer four questions in SECTION I and one question in SECTION II. Marks allocated to each question are shown at the end of the question. Show ALL your workings.

## SECTION I

## QUESTION ONE

Wangu Manufacturing Company Ltd. is located at the industrial area in Nairobi. The company uses four different machine groups, A, B, C and D in its manufacturing process.

The overhead costs budget for the year ending 31 December 2003 is as follows:

	Sh. „000“
Indirect wages	12,000
Holiday pay and national insurance	10,200
Supervision	16,680
Machine maintenance (wages)	14,000
Supplies	2,600
Power	4,200
Tooling costs	13,300
Insurance of machinery	2,520
Insurance of buildings	1,600
Depreciation	10,500
Rent and rates	<u>12,400</u>
	<u>100,000</u>

At present, overheads are absorbed into the cost of the company's products by means of a single direct wages percentage of 70 percent. The company wishes to change to machine hour overhead absorption rate for each of its four different machine groups.

The following data is available for each of the four machine groups:

	Machine groups				Total
	A	B	C	D	
	Sh. „000“	Sh. „000“	Sh. „000“	Sh. „000“	Sh. „000“
Tooling costs	5,400	4,100	2,600	1,200	13,300
Supervision	5,170	4,720	3,630	3,160	16,680
Supplies	1,200	800	200	400	2,600
Cost of machines	32,000	24,000	10,000	18,000	84,000
Machine maintenance hours	3,000	2,000	4,000	1,000	10,000
Number of direct workers	6	6	2	2	16
Total number of workers	26	34	15	10	85
Floor space (square feet)	3,000	2,400	1,600	1,000	8,000
Machine running hours	30	60	25	10	125
Machine power rating (kilowatts)	55,000	27,000	8,000	15,000	105,000

**Required:**

- (a) Machine hour overhead absorption rate for each of the four groups of machines. (9 marks)
- (b) The overhead cost to be absorbed by product XY123 if:
  - (i) It utilizes the following time resources of the indicated machine groups:



Hours	Machine group
8	A
3	B
1	C
4	D

(3 marks)

- (ii) Direct labour cost is Sh. 22,000,000 and the direct wages percentage method is used. (3 marks)

- (c) Briefly discuss the argument in favour of changing the overhead absorption rate from direct wages percentage in machine hour rate. (5 marks)

**(Total: 20 marks)****QUESTION TWO**

Nguvu Company Limited specializes in the manufacture of industrial adhesives. The adhesive is made from a solution of chemical powder X and liquid chemical Y. After manufacturing the adhesive, the company packs in into plastic tubes before distributing it to the customers.

The standard prime cost of a tube of the adhesive is as follows:

Industrial adhesive		
	Sh. per tube	Sh. per tube
Materials: Powder X	15	
Liquid chemical Y	6	
Plastic tube	<u>3</u>	
Direct labour: Mixing and pouring	24	
Total standard prime cost	<u>18</u>	
	<u>42</u>	

The standard material allowance for each tube of the adhesive is 2kg of chemical powder X, 1/4 litre of liquid chemical Y and one piece of plastic tube. The standard wage rate of mixing and pouring the chemicals is Sh. 45 per hour.

During the month ended 31 March 2003, 45,000 tubes of the adhesive were made. There was no work in progress at the beginning or end of the month and the receipts and issues of materials during the month were as shown below:

	Powder Chemical X	Liquid Chemical Y	Plastic tube
Opening Stock	15,000kg	2,000 litres	1,000 tubes
Purchases	100,000kg @ Sh. 7 per kg	6,000 litres @ Sh. 23 per litre 6,000 litre @ Sh. 25 per litre	2,000 tubes @ Sh. 4 each 50,000 tubes @ Sh. 3 each
Issues	98,000 kg	10,500 litres	45,200 tubes

Employees working on the mixing and pouring of the chemicals worked a total of 2,050 hours during the month ended 31 March 2003. They were paid gross wages amounting to Sh. 8,910,000.

It is the policy of the company to analyze variances from the standard prime costs.

**Required:**

- (a) Materials price variance (6 marks)
- (b) Materials usage variance (6 marks)
- (c) Direct labour efficiency variance (2 marks)
- (d) Direct wages rate variance (2 marks)
- (e) (i) Two possible causes of direct labour efficiency variance (2 marks)
- (ii) Two possible causes of direct material usage variance (2 marks)

**(Total: 20 marks)****QUESTION THREE**

Maxim Company Limited started its operations on 1 January 2001. It manufactures a single product which it sells at Sh. 25 per unit. The following absorption costing income statements are for the years ended 31 December 2001 and 31 December 2002 respectively.

	2001	2002
	Sh.	Sh.
	„000“	„000“
Sales	150,000	350,000
Cost of goods sold:		
Opening stock		52,000
Cost of goods manufactured	<u>130,000</u>	<u>130,000</u>
Cost of goods available for sale	130,000	182,000
Less: Closing stock	<u>52,000</u>	<u>          </u>
Cost of goods sold	78,000	182,000
Gross margin	72,000	168,000
Marketing and administrative costs	<u>39,500</u>	<u>49,500</u>
Operating income before tax	<u>32,500</u>	<u>118,500</u>

The cost of goods manufactured per unit is computed as follows:

	Sh.
Direct Materials	5,000
Direct labour	3,000
Variable manufacturing overhead	2,000
Fixed manufacturing overhead	<u>3,000</u>
Total cost per unit	<u>13,000</u>

Production and sales data for the two years are as follows:

	2001	2002
Units produced	10,000	10,000
Units sold	6,000	14,000

Marketing and administrative costs:

	2001	2002
	Sh. „000“	Sh. „000“
Variable marketing costs	7,500	17,500
Fixed marketing costs	15,000	15,000
Fixed administrative costs	<u>17,000</u>	<u>17,000</u>
	<u>39,500</u>	<u>49,500</u>

There was no work in progress at either the beginning or end of the respective years.

**Required:**

- (a) Income statements for Maxim Company Limited for each of the years using the variable – costing method. (10 marks)
- (b) Reconcile the absorption-costing and variable-costing operation incomes for each of the two years. (6 marks)

- (c) Which income statement format is more suitable for managerial decision making?  
(4 marks)  
**(Total: 20 marks)**

#### QUESTION FOUR

Mali Yote Limited is a company engaged in the manufacture of specialist marine engines. It operates a job costing accounting system which is not integrated with financial accounts.

At the beginning of the month of May 2002, the operating balances in the cost ledger were as follows:

	Sh. „000“
Stores ledger control account	85,000
Work in progress control account	167,000
Finished goods control account	49,000
Cost ledger control account	302,000

During the month, the following transactions took place.

Materials:	Purchases	42,700
Issues to:	Production	63,400
	General maintenance	1,400
	Assembling of manufacturing equipment	7,600
Factory wages:	Total wages paid	124,000

Of the total wages paid. Sh. 12,500,000 was incurred in the assembly of manufacturing equipment. Sh. 35,700,000 was indirect wages and the balance was direct wages.

Other production overhead costs incurred amounted to Sh. 152,000,000. Sh. 30,000,000 of which was absorbed by the manufacturing equipment under assembly while Sh. 7,500,000 was under absorbed overhead costs written off.

One of the engines manufactured by the company is produced under licence. During the month of May 2002. Sh. 2,100,000 was paid as royalty for that particular engine.

Selling overheads and distribution overhead costs were as follows:

	Sh. „000“
Selling overheads	22,000
Distribution overheads	410,000

The company's gross profit margin is 25% on factory cost.

At the end of May 2002, the stock of work in progress had increased by Sh. 12,000,000. The manufacturing equipment under assembly was completed within the month and transferred out of the cost ledger at the end of the month.

#### Required:

- (i) Cost ledger control account (8 marks)  
(ii) Stores ledger control account (3 marks)  
(iii) Work in progress control account (3 marks)  
(iv) Finished goods control account (3 marks)  
(v) Costing profit and loss account (3 marks)

**(Total: 20 marks)**

**QUESTION FIVE**

- (a) Although stocks of materials may be planned to maximize profitability, when stock record cards are compared to actual physical stocks, differences often arise.

Explain possible reasons for these differences. (4 marks)

- (b) Using a diagram to illustrate your answer, explain the rationale underlying the economic order quantity model. (The mathematical derivation is not required) (4 marks)
- (c) Explain briefly the limitations of economic order quantity. (4 marks)
- (d) Bidii Enterprises is located at Kariobangi Light Industries area in Nairobi. The company manufactures a product „Comex“ which is used in the building industry. The main raw material used in the manufacture of „Comex“ is material B42000.

The following information relates to material B42000.

Annual requirements:	144,000 units
Ordering costs: Annual	Sh. 12,500 per order
holding costs: Purchase	20% of the purchase price
price per unit:	Sh. 500
Safety stock requirement:	None

**Required:**

- (i) The economic order quantity. (2 marks)
- (ii) The number of orders needed per year. (2 marks)
- (iii) Total cost of ordering and holding material B42000 per year. (4 marks)

**(Total: 20 marks)**

**SECTION II****QUESTION SIX**

Distinguish between continuous stocktaking and annual stocktaking and explain the advantages and disadvantages of each of them. (20 marks)

**QUESTION SEVEN**

Write explanatory notes on each of the following:

- (a) Just-In-Time (JIT) production. (4 marks)
- (b) Equivalent units in process costing (3 marks)
- (c) Activity based costing (4 marks)
- (d) Learning curve theory. (3 marks)
- (e) Set-up time (3 marks)
- (f) Product costing (3 marks)

**(Total: 20 marks)**

## DECEMBER 2011

## SECTION I

## QUESTION ONE

- (a) Define the term “cash budget” and explain two functions of a cash budget.(5 marks)
- (b) The Confederation of Trade Unions of Kenya (CTUK) has announced that it will call a general strike for all production workers in textile industry. The strike will commence at the beginning of week 3 of the year beginning 1 January 2004 and is expected to continue at least for four weeks. Agoatex Ltd. a garment manufacturing company will be one of the firms that will be affected by the total interruption of supply of raw materials. The following information is available for Agoatex Ltd. for the year beginning 1 January 2004.

	<b>Week 1</b>	<b>Week 2</b>	<b>Week 3</b>
	<b>Units</b>	<b>Units</b>	<b>Units</b>
Budgeted sales	40,000	50,000	40,000
Budgeted production	60,000	40,000	Nil

The budgeted sales will continue to be made during the period of interruption until stock of finished goods is exhausted. Production will stop at the end of the second week. The current stock level of finished goods is 60,000 units. Stocks of work-in-progress (WIP) is not carried.

The product sells at Sh. 600 and the budgeted manufacturing cost is made up as follows:

	<b>Sh.</b>
Direct materials	150
Direct wages	70
Variable overheads	80
Fixed overheads	<u>180</u>
Total	<u>480</u>

The company operates a full absorption costing system and the fixed overhead absorption rate is based upon a budgeted fixed overhead of Sh. 9,000,000 per week. Included in the total fixed overheads is Sh. 7,000,000 per week for depreciation of equipment. During the period of interruption, direct wages and variable overheads will not be incurred and the cash expended on fixed overheads will be reduced by Sh. 1,500,000 per week.

The current stock of raw materials is worth Sh. 7,500,000. It is intended that these stock should increase to Sh. 14,000,000 by the end of week 1 and then remain at this level during the period of the strike. All direct materials are paid one week after they have been received. Direct wages are paid one week in arrears. It should be assumed that all relevant overheads are paid for immediately the expense is incurred. All sales are on credit, 70% of the sales value is received in cash from the debtors at the end of the first week after the sales have been made and the balance at the end of the second week.

The current amount outstanding of materials suppliers is Sh. 8,000,000 and direct wages accruals amount to Sh. 3,200,000. Both of these will be paid in week 1. The current balance owing from debtors is Sh. 31,200,000 of which Sh. 24,000,000 will be received during week 1 and the remainder during week 2. The current balance of cash at bank and in hand is Sh. 1,000,000.

**Required:**

A cash budget for weeks 1 to 6 showing the balance of cash at the end of each week together with a suitable analysis of the receipts and payments during each week.

(15 marks)

**(Total: 20 marks)**

**QUESTION TWO**

- (a) Briefly explain the limitations of the assumptions of cost-value-profit (C-V-P) analysis. (4 marks)
- (b) Home Tutorial College teaches wholly through distance learning method. This is done by production of self-study packs which enable students to prepare for professional examinations.

During the year ended 30 September 2003, each study pack was sold at the price of Sh.1,500 and a total of 100,000 units were produced and sold. The production costs of the various study packs offered by the college are the same.

The variable cost of a study pack during the year ending 30 September 2003 has been as follows:

	Sh.
Direct materials	500
Direct labour	600
Other direct costs	60
Variable overheads	<u>40</u>
Total variable cost	<u>1,200</u>

The fixed costs for Home Tutorial College during the year have been Sh. 20,000,000

During the coming year, the costs of the organization are expected to increase by the following:

	Percentage increase
Direct materials	20
Direct labour	16.67
Other direct costs	67
Variable overheads	25
Fixed overheads	5

Market research has shown that when the college increases the price of its study packs to its students, as long as the additional cost price is kept below 17.5%. This is unlikely to have an effect on the number of units sold. However, for every 1% that price are raised above 17.5% increase, the number of units sold can be expected to fall by 2%.

**Required:**

- (i) The selling price of the study packs if the number of study packs sold and the annual profit are to remain at the same levels. (8 marks)
- (ii) The number of units that the college would have to sell if it did not change the price charged for the study packs but maintained the profit levels attained in year ending 30 September 2003. (4 marks)
- (iii) A brief analysis of a situation where, when the prices are changed, the number of units sold is affected. (4 marks)

**(Total: 20 marks)**

**QUESTION THREE**

- (a) Given below is the budget information for BN Ltd. and the actual results for the period to 30 June 2003.

	<b>Budget</b>	<b>Actual</b>
Production/Sales (units)	2,000,000	1,800,000
Direct labour hours	8,000,000	7,560,000
Direct materials (Kg)	5,000,000	4,320,000
Variable overheads (Sh.)	85,000,000	90,000,000
Fixed overheads (Sh.)	80,000,000	76,000,000

The standard selling price of the product is Sh. 240 per unit while the input costs are as follows:

	<b>Sh.</b>
Direct labour per hour	15
Direct material per kg	25

Overheads are absorbed on a direct labour hour basis.

**Required:**

Prepare in columnar form the budgeted profit and loss account and flexible budget for the level of output achieved for the year ended 30 June 2003. (5 marks)

- (b) The information given below relates to Wasp Ltd. which manufactures a single type of chemical. Overhead processing costs for the last thirteen accounting months (of four weeks each) have been as follows:

<b>Period</b>	<b>Overhead cost Sh. „000“</b>	<b>Output „000“ tonnes</b>
1	770	120
2	820	150
3	810	160
4	830	170
5	960	200
6	900	170
7	940	200
8	950	200
9	940	180
10	870	160
11	800	140
12	820	150
13	790	140

**Required:**

Devise a formular to assist in predicting the overhead budget for the thirteen months. (15 marks)

**(Total: 20 marks)**

**QUESTION FOUR**

Daina Limited manufactures a unique hair oil branded Dainaline. The product undergoes two manufacturing processes before emerging as a complete product. The following information relates to production undertaken during the month of September 2003.

Process	1	2
Input	250,000 litres @ Sh. 62.50 per litre	
Added Costs:		
Material		4,606,250
Labour	5,750,000	3,806,250
Overhead	4,812,500	2,640,000
Normal loss	2,062,500	5% of input
Scrap value	10% of input Sh. 18.75 per litre	Sh. 42.50 per litre
Output:		
To process 2:200,000 litres		162,500 litres
	To finished goods	25,000 litres
	To W.I.P C/f	100%
	- Previous process costs	80%
	- Added material	70%
	- Labour	50%
	- Overhead	

There was no opening work -in-progress in either of the two processes. Losses in process 2 had the following degree of completion: previous process costs 100%, added material 70%, labour 50% and overheads 50%.

**Required:**

- (a) Process accounts for both processes for the month of September 2003 (show all your computations). (16 marks)
- (b) Explain the implication of the following to the costs of equivalent units:
- (i) Normal loss (2 marks)
- (ii) Scrap value (2 marks)
- (Total: 20 marks)**

**QUESTION FIVE**

- (a) What is meant by the term “under-absorption” of overheads? Give two reasons why it can occur in an organization. (4 marks)
- (b) Alphabeta Production Ltd. manufactures two products, Alpha and Beta. These products are made using similar equipment and methods. Traditionally, the company has used a direct labour hour basis for absorbing overheads. The budgeted results for the month of September 2003 are given below:

	Alpha	Beta
Production/sales (units)	6,000,000	8,000,000
Direct labour (Sh.)	10,800,000	25,600,000
Direct material (Sh.)	9,600,000	14,400,000
Number of production set up hours	25	35
Number of orders	12	60
Direct labour hours per unit	1	2
Machine hours per unit	4	2

The factory was operational for 21600 hours during the month. The overheads incurred in September 2003 were Sh. 280,000,000 whereas the budgeted overhead for the month were Sh. 316,800,000. You are also informed that budgeted overheads can be categorized by activity as follows:



Activity	Sh. „000“
Production set up costs	214,800
Orders handled	36,000
Machine activity	66,000

**Required:**

- (i) Determine the direct labour hour absorption rate (3 marks)
- (ii) Compute the over (under) absorbed overheads during the month (2 marks)
- (iii) Determine the budgeted cost per unit of each product if the company follows the traditional approach of a single factory wide absorption rate. (3 marks)
- (iv) Determine the budgeted cost per unit if the company adopts an activity based approach in dealing with overheads. (5 marks)
- (c) Why would it be considered inappropriate to apply a blanket overhead absorption rate? (3 marks)

**(Total: 20 marks)****SECTION II****QUESTION SIX**

Briefly distinguish between the following terminologies used in cost accounting clearly stating the importance of the distinction for decision making purposes:

- (a) Controllable costs and non-controllable costs (4 marks)
- (b) Fixed costs and marginal costs (4 marks)
- (c) Discretionary costs and periodic costs (4 marks)
- (d) Cost tracing and cost accumulation (4 marks)
- (e) Sunk costs and standard (planned) costs (4 marks)

**(Total: 20 marks)****QUESTION SEVEN**

- (a) A business firm which is engaged in manufacturing should adequately control materials used in the production process from the point of procurement up to the point the materials are issued to production.

**Required:**

Clearly explain how a business firm would reasonably achieve this objective (10 marks)

- (b) Standard costing is the setting of predetermined cost estimates in order to provide a basis for comparison with the actual costs.

**Required:**

- (i) Briefly explain the three types of performance standards used in standard costing (6 marks)
- (ii) State and explain the problems encountered in setting up standard costs. (4 marks)

**(Total: 20 marks)**

JUNE 2012

## SECTION I

## QUESTION ONE

The following budget and actual results relates to Cypo Ltd. for the last three quarters for the year ended 31 March 2004.

Budget:	Quarter 2 to 30/9/2003	Quarter 3 to 31/12/2003	Quarter 4 to 31/3/2004
Sales (units)	10,000	14,000	12,200
Production (units)	8,000	14,200	12,400
Fixed overheads (Sh. „000“)	10,400	19,170	17,360
<b>Actual results</b>			
Sales (units)	9,600	12,400	10,200
Production (units)	8,400	13,600	9,200
Fixed overheads (Sh. „000“)	11,200	18,320	16,740

The value of the opening and closing stock of the units produced is arrived at by using the FIFO stock valuation method. The budgeted and actual opening stock for the quarter ended 30 June 2003 was 2,600 units and its valuation included Sh. 3,315,000 of fixed overheads. The company absorbs its fixed overheads using a pre-determined fixed overhead absorption rate per unit which is the same for each quarter. It is assumed that variable costs per unit and selling price per unit remained the same for each of the three quarters.

**Required:**

- Calculate the under or over-recovery of fixed overheads for each quarter and indicate how it will affect the profit or loss for the year ended 31 March 2004. (9 marks)
- Using the actual results given above, explain whether absorption costing gives a higher profit figure than marginal costing. (8 marks)
- Explain briefly why absorption costing is usually considered to be unsuitable as an aid to decision making. (3 marks)

**(Total: 20 marks)**

## QUESTION TWO

- Explain the advantages and disadvantages of the high-low method of cost estimation. (6 marks)
- Central Machinery Ltd. is preparing its budget for the year ending 30 June 2004. For the fuel expenses consumption it is decided to estimate an equation of the form,  $y = a + bx$ , where  $y$  is the total expense at an activity level  $x$ ,  $a$  is the fixed expense and  $b$  is the rate of variable cost.

The following information relate to the year ended 30 June 2003:

Month	Machine hours	Fuel Oil expense	Month	Machine hours	Fuel oil expense
2003	(Sh. „000“)	(Sh. „000“)	2004	(Sh. „000“)	(Sh. „000“)
July	34	640	January	26	500
August	30	620	February	26	500
September	34	620	March	31	530
October	39	590	April	35	550
November	42	500	May	43	580
December	32	530	June	48	680

The annual total and monthly average figures for the year ended 30 June 2003 were as follows:

	Machine hours	Fuel oil expense
	(„000“)	(Sh. „000“)
Annual total	420	6,840
Monthly average	35	570

**Required:**

- (i) Using the high-low method, estimate and interpret the fixed and variable cost elements of the fuel oil expense. (5 marks)
- (ii) Using the results in (i) above, predict the fuel oil expense for November 2004 if experience indicates that 41,000 machine hours will be used. (2 marks)
- (iii) Briefly explain any two limitations of High-low method of cost estimation that may be overcome by using simple linear regression analysis. (4 marks)
- (iv) By using simple linear regression analysis it is established that the coefficient of determination arising from the data is approximately 0.25. Interpret the significance of this fact. (3 marks)

**(Total: 20 marks)**

**QUESTION THREE**

BS Limited, manufactures a single standard product and operates a system of standard costing using a fixed budget. As the company's assistant cost accountant, you are responsible for preparing the monthly operating statements. Details from the budget, the standard product costs and actual results for the month ended 31 May 2003 are given below:

**Budgeted and standard cost information**

1. Budgeted sales and production for the month: 10,000 units
2. Standard cost of each unit of product:  
 Direct material: X: 10kg at Sh. 10 per kg.  
                           Y: 5kg at Sh. 50 per kg.  
 Direct wages: 5 hours at Sh. 30 per hour.
3. Fixed production overhead is absorbed into production at a rate of 200% of direct wages.
4. Budgeted sales price has been estimated to give a profit of 20% of sales price.

**Actual results for the month ended 31 May 2003:**

Production 9,500 units  
 Sales 9,500 units sold at a price of 10% higher than budgeted

**Direct materials consumed:**

X: 96,000kg at Sh. 12kg  
 Y: 48,000kg at Sh. 47 per kg

Direct wages paid: 46,000 hours at Sh. 32 per hour.

Fixed production overhead incurred: Sh. 2,900,000.

**Required:**

The operating statement for the month of May, 2004 showing:

- (a) The budgeted profit: (2 marks)
- (b) Variances for direct materials, direct wages, overheads and sales. (15 marks)
- (c) The actual profit (3 marks)

**(Total: 20 marks)**

**QUESTION FOUR**

- (a) Explain the terms:
- (i) Re-order level (2 marks)
  - (ii) Re-order quantity (1 mark)
- (b) List any three factors that must be considered in determining the re-order level. (3 marks)
- (c) A company is reviewing its stock policy and has the following alternatives available for evaluating the optimal order size for stock item number 1287:
1. Purchase stock twice monthly, 100 units.
  2. Purchase monthly, 200 units
  3. Purchase every three months, 600 units
  4. Purchase every six months, 1200 units
  5. Purchase annually, 2400 units

It is ascertained that the purchase price per unit is Sh. 80 for deliveries upto 500 units. A 5% discount is offered by the supplier on the whole order where deliveries are 501 upto 1,000 and 10% reduction on the total order for deliveries in excess of 1,000.

Each purchase order incurs administration costs of Sh. 500. Storage, interest on capital and other costs are Sh. 25 per unit of average stock quantity held.

**Required:**

Advise management on the optimum order size.

(14 marks)

**(Total: 20 marks)**

**QUESTION FIVE**

Wajenzi Limited commenced its operations on 1 January 2003. The company was engaged in one contract only, the price of which was Sh. 100 million. The trial balance of the company as at 31 December 2003 was as follows:

	Sh. „000“	Sh. „000“
Share capital		20,000
Creditors		2,000
Cash received on contract (80% of work certified)		40,000
Land and buildings	8,000	
Bank balance	4,800	
Materials charged on contract	18,000	
Plant (original cost 1 January 2003)	5,000	
Wages	25,000	
Expenses	<u>1,200</u>	
	<u>62,000</u>	<u>62,000</u>

**Additional information:**

1. Wages outstanding amounted to Sh. 3 million
2. Expenses outstanding amounted to Sh. 200,000
3. Depreciation on plant was at a rate of 10% per annum on time basis
4. Materials on hand at site as on 31 December 2003 were valued at Sh. 800,000.
5. A part of plant (original cost Sh. 1,000,000) was destroyed by fire on 30 September 2003. This was subsequently sold as scrap for Sh. 200,000 on 31 December 2003.

6. Plant (original cost Sh. 1,000,000) was transferred to another contract on 31 December 2003.
7. Work uncertified as on 31 December 2003 was Sh. 400,000.
8. Materials costing Sh. 800,000 was destroyed by fire on 31 December 2003.

**Required:**

- (a) Contract account for the period ended 31 December 2003 (6 marks)
- (b) Abnormal loss account (4 marks)
- (c) Profit and loss account for the year ended 31 December 2003 (4 marks)
- (d) Balance sheet as at 31 December 2003 (6 marks)

**(Total: 20 marks)****SECTION II****QUESTION SIX**

- (a) Explain the concept of “equivalent units” as used in process costing (4 marks)
- (b) Distinguish between absorption costing and marginal costing systems (4 marks)
- (c) Explain the factors that should be taken into account in deciding the most suitable method of remuneration of labour. (7 marks)
- (d) Explain circumstances under which marginal costing techniques are used (5 marks)

**(Total: 20 marks)****QUESTION SEVEN**

Distinguish between the following terminologies used in cost accounting:

- (a) Predetermined overhead rate and over or under applied overhead. (4 marks)
- (b) job costing system and processing costs (4 marks)
- (c) Opportunity costs and variable costs (4 marks)
- (d) Period costs and product costs (4 marks)
- (e) Joint costs and relevant costs (4 marks)

**(Total: 20 marks)**

NOVEMBER 2012

## SECTION ONE

## QUESTION ONE

Auto-Generators Ltd. is a local company that manufactures three types of automotive generators namely: Exe, Wye and Zed. The management is unhappy about the current production mix and is seeking advice on the most optimal arrangement. Current production is 100,000 units of Exe, 50,000 units of Wye and 60,000 units of Zed. The data relating to production costs for each unit of the generators are given below:

	Exe Sh.	Wye Sh.	Zed. Sh.
Production costs			
Direct material	3,000	9,000	6,000
Variable overhead	1,500	4,000	4,500

## Additional information:

- Each type of generator passes through three departments in which a different type of labour is used. The labour requirements in each department are given below:
- 

	Department	Rate per hour Sh.	Labour requirement (hours)		
			Exe	Wye	Zed
1.		200	3	4	6
2.		400	1	2½	4
3.		300	5	7	9

- There is a shortage of labour in department 2 and it is not possible to increase labour input hours beyond the level currently utilized.
- Fixed overheads are budgeted at Sh.500,000,000 per annum and they are expected to remain constant.
- Market prices are currently Sh.12,000 for Exe, Sh. 20,000 for Wye and Sh.22,500 for Zed.
- A recent market survey disclosed that maximum sales potential for the company is 125,000 units of Exe, 75,000 units of Wye and 80,000 units of Zed.

## Required:

- Determine the profit made on the current production mix. (7 marks)
- Determine the most profitable production mix that should be adopted by the company. (7 marks)
- Calculate the expected profit if the production mix in (b) above is adopted by the company. (3 marks)
- Which other considerations may be necessary before adoption of the change in production mix? (3 marks)

## QUESTION TWO

More Ltd. is a medium size manufacturing company and it maintains separate cost and financial accounting books. The financial accountant provided the following statement for the year ended 31 March 2004.

**More Ltd****Manufacturing, trading and profit and loss account for the year ended 31 March 2004**

	Sh.	Sh.
<b>Direct materials</b>		
Opening stock	150,000	
Add: purchases	<u>1,800,000</u>	
	1,950,000	
Less: closing stock	<u>200,000</u>	
Direct materials cost	1,750,000	
Add: direct wages	<u>250,000</u>	
Prime cost		2,000,000
Add: factory overheads		<u>300,000</u>
		2,300,000
Add: opening work-in-progress		<u>125,000</u>
		2,425,000
Less: closing stock		<u>130,000</u>
Production cost carried forward		<u>2,295,000</u>
Sales		4,500,000
<b>Less cost of goods sold</b>		
Opening stock	240,000	
Production cost brought forward	<u>2,295,000</u>	
	2,535,000	
Less: closing stock	<u>255,000</u>	
Gross profit		<u>2,280,000</u>
<b>Other incomes</b>		2,220,000
Discount received	45,000	
Income from investment	1,094,000	
		<u>1,139,000</u>
		3,359,000
<b>Expenses</b>		
Depreciation	280,000	
Interest on loan	36,000	
Interest on loan	25,000	
Debenture interest	<u>600,000</u>	
Administration expenses		<u>941,000</u>
Net profit		<u>2,418,000</u>

The records from cost accounts showed the following:

1. Stock valuation as at 31 March were as follows:

	2003 Sh.	2004 Sh.
Raw materials	160,000	196,000
Work-in-progress	121,000	125,000
Finished goods	258,000	260,000

2. Factory overheads were absorbed at 15% of direct material costs.
3. Other costs included:

	Sh.
Interest on capital	140,000
Notional rent	420,000
Administration over absorbed	32,000
Selling and distribution over absorbed	25,000
Depreciation	242,000

4. Profit as per cost was Sh. 2,328,400

**Required:**

Prepare a profit reconciliation statement for the year ended 31 March 2004. (20 marks)

**QUESTION THREE**

- (a) The following information relates to Mamba Ltd. of three months ended 30 September 2004:

Products	X	Y	Z
Sales and production (units)	50,000	40,000	30,000
Selling price per unit in (Sh)			
Prime cost per unit in (Sh.)			
Machine department			
Machine hours per unit	4	10	8
Assembly department			
Labour hours per unit	14	6	4

Other information obtained is as follows:

- Overheads are allocated and apportioned to production department (including service cost centre costs) and recovered in product cost as follows:  
Machine department at Sh.120 per machine hour  
Assembly department at Sh.82.50 per labour hour
- It is ascertained that the above overheads could be re-analyzed into cost pools as follows:

Cost pool	Sh. „000“	Cost drivers	Quantity (units per period)
Machine Services	3,570	Machine hours	4,200,000
Assembly Services	3,180	Labour hours	5,300,000
Set up cost	260	Set ups	5,200
Order processing	1,560	Customer orders	320,000
Purchasing	840	Suppliers orders	112,000

- (b) The following are the estimates for the period:

	X	Y	Z
Number of setups	120	200	200
Customers orders	8,000	8,000	16,000
Suppliers orders	3,000	4,000	4,200

**Required:**

Profit statement using conventional absorption costing method: (6 marks)

- (c) Super Clean Ltd. is a processing firm production homeware detergents. It packs the detergent in 10 litre containers and 20 litre containers. The following data relates to its processing for the period ended 30 September 2004:

1.

Cost and sales:	10 litre containers	20 litre container
Selling price per container (Sh.)	150	350
Direct cost per container (Sh.)	70	155

2. Activity: Containers processed and sold

Period ending 30 September 2003 (litres)	650,000	575,000
Period ending 30 September 2004 (litre)	605,000	607,000

3. Semi variable overheads for:



Period ending 30 September 2003 (Sh).	11,182,500
Period ending 30 September 2004 (Sh)	11,268,000

**Required:**

- (i) Calculate the amount of profit that Super clean ltd. would earn if 385,000 containers of 10 litres each and 290,000 containers of 20 Litres each were processed and sold using marginal costing approach. (10 marks)
- (ii) Briefly explain two main uses of marginal costing in an organization (4 marks)

**QUESTION FOUR**

Ideal Products Limited, manufactures two products A and B. For the financial year ended 30 June 2004, the following information was assembled for preparation of the budget:

Standard data per unit

Direct Materials	Standard Price per Kg;	Product A	Product B
	Sh.	Kg	Kg
M1	10	10	4
M2	20	4	6
Direct Labour	Standard rate	Product A	Product B
	per hour	Hours	Hours
L1	30	8	10
L2	20	12	5

The following additional information was available:

- 1) Fixed Production overhead costs were recovered on a direct labour basis.
- 2) Administration, selling and distribution costs were absorbed at the rate of 20% of production cost.
- 3) Profit was estimated at the rate of 25% of cost of making and selling the products.
- 4)

	Product A Sh. „000“	Product B Sh. „000“
Expected sales for the year	13,494	18,816

- 5) Finished goods stock valued at standard production cost was as follows:

	Product A Sh. „000“	Product B Sh. „000“
1 July 2003	1,730	1,176
30 June 2004	1,038	1,568

- 6) Direct materials stock valued at standard prices was as follows:

	Material M1 Sh. „000“	Material M2 Sh. „000“
1 July 2003	640	600
30 June 2004	360	800

- 7) For the year ended 30 June 2004, „fixed overheads had been budgeted at Sh. 5,760,000 and direct labour hours budgeted at 3,600,00 110urs.
- 8) It is management's expectations that there will be no opening or closing work-in-progress.

**Required:**

- a) Production budget in units. (8 Marks)
- b) Direct Material cost budget. (3 Marks)
- c) Purchases budget. (6 Marks)
- d) Direct labour cost budget. (3 Marks)

(Total: 20 Marks)

**QUESTION FIVE**

NFP is an industrial lubricant which is prepared by subjecting certain crude chemicals to two successive processes. The output of process I is transferred to process 2 where it is blended with other chemicals. The process costs for the month of October 2004 were as follows:

**Additional information**

- 1) General overhead costs were absorbed into process costs on the basis of labour cost. General overhead for the month of October 2004 amounted to Sh. 357,000.
- 2) The normal output of process I was 80% of input, while that of process II was 90% of input.
- 3) Waste material from process I was sold for Sh.2 per kg. while that from process II was sold for Sh.3 per kg.
- 4) The output for the month of October 2004 was as follows: Process I: 2,300,000kg
- 5) Process II: 4,000,000kg
- 6) There was no stock or work in progress of either of the products at the beginning or end of the period.
- 7) It was assumed that all available waste material had been sold at the prices indicated above.

**Required:**

Demonstrate how the data above would be recorded in:

- a) Process accounts for both processes for the month of October 2004.
- b) Finished stock account.
- c) Normal loss account.
- d) Abnormal loss and gain

(Total: 20 marks)

**SECTION II****QUESTION SIX**

- (a) Citing relevant examples, distinguish between joint products and by-products. (4 marks)
- (b) In a joint product situation, explain the following:
  - i) Reasons why it is important to allocate joint cost to products. (4 marks)
  - ii) Any four methods of allocating joint cost to products. (8 marks)
  - iii) What factors should be considered in selecting the most appropriate method of allocating joint costs? (4 marks)

(Total: 20 marks)

**QUESTION SEVEN**

By way of explanatory notes, briefly state why you agree or do not agree with the following statement:

- a) Variable costs are always relevant costs while fixed costs are not. (3 Marks)
- b) The book value of an asset is irrelevant in decision making. (3 Marks)
- c) Variable costs and differential costs mean the same thing. (3 Marks)
- d) If a product line generates a loss, that product line should be dismissed. (3 marks)
- e) The term forecast can be used to mean budget. (2 marks)
- f) When a graph is plotted to show the effect of activity on the cost, using an economic total cost curve and an account cost curve, the behaviour pattern of both curves are the same. (3 Marks)
- g) Opportunity cost of a resource and an opportunity cost of an activity mean the same thing. (3 Marks)

(Total: 20 marks)

## KENYA ACCOUNTANTS AND SECRETARIES NATIONAL EXAMINATION BOARD

## ATC LEVEL II

## SECTION II

## COST ACCOUNTING

June 2013

Time allowed: 3 hours

Answer FOUR questions in SECTION I and ONE question in SECTION II. Marks allocated to each question are shown at the end of the question. Show all your workings;

## SECTION ONE

## QUESTION ONE

Bidii Ltd. is a small scale company which manufactures three products namely; Exe, Wye and Zed. The company has two departments: Assembly and Machinery which require the same level of labour expertise. The following information relates to the operations of Bidii Ltd.:

1. In the period commencing 1 March 2005 and ending 28 February 2006, the company budgeted for:

Fixed overheads (Sh.)	3,000,000
Capacity – Machinery (hr)	50,000
Assembly department (hr)	75,000

2. The standard costs per unit of each product are:

	Exe	Wye	Zed
Selling price	2,000	1,580	2,240
Variable costs:	700	400	800
Direct material	480	320	560
Direct labour – machinery department (Sh.80 per hour)	480	320	560
Assembly department (Sh.60 per hour)	360	390	420
Total variable costs	1,540	1,110	1,780

3. Information in respect to the maximum demand for each product which Bidii Ltd. could alternatively source from an independent supplier, for the same quality, is given below

Product	Maximum demand (units)	Price quoted by external supplier per unit (Sh.)
Exe	3,000	1,750
Wye	2,500	1,400
Zed	5,000	2,000

**Required:**

- (a) Briefly explain the term “limiting factor.” (2 marks)  
 (b) Identify and compute the limiting factor for Bidii Ltd. (4 marks)  
 (c) Determine which product(s) should be sourced from the external supplier and the relevant quantities. (9 marks)  
 (d) Based on your recommendations in (c) above, determine the profits for the period commencing 1 March 2005 and ending 28 February 2006. (5 marks)

**(Total: 20 marks)**

**QUESTION TWO**

- (a) State the advantages of using standard costs in the manufacturing industry. (8 marks)
- (b) Ufundi Furniture Ltd. manufactures a wide range of home furniture. Recently, the company added to its range a side board. The standard cost specification for each side board is given below:

Material L	Timber (Sh.280 per kg)	<b>Quantity</b> 6 kg
	Varnish (Sh.300 per litre)	0.5 litre
Labour (Sh.60 per hour)		8 hours

During the month of September 2004, 620 side boards were manufactured. The actual quantities and costs incurred were as follows:

	<b>Quantity</b>	<b>Sh.</b>
Materials: Timber (kg)	4,500	1,125,000
Varnish	290	364,000
Labour hours	5,200	364,000

The abnormal idle hours were recorded as 4,800 hours.

**Required:**

- Materials price variance (for both materials); (2 marks)
- Material usage variance (for both materials); (2 marks)
- Labour rate of pay variance; (2 marks)
- Labour efficiency variance; (2 marks)
- Idle time variance (2 marks)
- Suggest possible causes of the material variances. (2 marks)

**(Total: 20 marks)**

**QUESTION THREE**

- (a) Ardhi Company is considering the type of remuneration scheme to adopt for its employees. The following information is availed to you for your analysis:

		<b>Mambo</b>	<b>Saidi</b>	<b>Mbogo</b>
Actual hours worked		38	36	40
Hourly rate of pay (Sh.)		30	20	25
Output (units)	A	42	120	-
	B	72	76	-
	C	92	-	50
		A	B	C
Standard time allowed per unit (minutes)		6	9	15

For the calculation of piecework earnings the company values each minute at the rate of Sh.0.5.

**Required:**

Calculate the earnings for each employee using:

- Basic guaranteed hourly rates; (4 marks)
- Piecework rates; (4 marks)
- Premium bonus, given that an employee earns the premium bonus at the rate of two thirds of the time saved. (5 marks)

- (b) Ushindi Limited manufactures ornaments for export trade. Jobs are allocated to two operators, Mbotela and Juma with bonus paid for hours saved.

In the month of February 2005 Mbotela made 186 units and Juma made 210 units for which the time allowed of 30 standard minutes and 25 standard minutes per unit respectively was credited.

The basic wage rate was Sh.18 per hour for both employees. For every hour saved, a bonus was paid at 20% of the basic wage rate. Hours worked in excess were paid at the basic wage rate plus two thirds. Mbotela completed his job in 44 hours and Juma completed his job in 39 hours.

A basic week has 40 hours.

**Required;**

For each operator:

- i) The amount of bonus payable; (2 marks)
- ii) The total gross wage payable; (3 marks)
- iii) The wages cost per unit (2 marks)

**(Total: 20 marks)**

**QUESTION FOUR**

- (a) State the objectives of budgetary planning and control systems. (3 marks)
- (b) Identify the limitations of using budgeting systems to regulate business activities. (5 marks)
- (c) Kunda Limited manufactures one standard product. Currently it is operating on a normal activity level of 70% with an output of 6,300 units, although the sales director believes that a realistic forecast for the next budget period would be at a level of activity of 50%.

	60%	70%	80%
	Shs.	Shs.	Shs.
Direct materials	37,800	44,100	50,400
Direct wages	16,200	18,900	21,600
Production overheads	37,600	41,200	44,800
Administration overheads	31,500	31,500	31,500
Selling and distribution overheads	42,300	44,100	45,900
Total cost	165,400	179,800	194,200

Profit is 20% of selling price.

**Required;**

- i) Prepare a flexible budget based on a 50% level of activity. (9 marks)
- ii) State three problems which may arise from such a change in the level of activity. (3 marks)

**(Total: 20 marks)**

**QUESTION FIVE**

- (a) Briefly explain the following cost estimation methods;
  - i) High-low method (3 marks)
  - ii) Simple regression method. (3 marks)
- (b) The management of Limuru Processing Company Limited wishes to obtain better cost estimates to evaluate the company's operations more effectively.

The following information is provided to you for analysis:

Year 2004	Equivalent production	Overheads
Month	Units („000“)	Sh. „000“
January	1,425	12,185
February	950	9,875
March	1,130	10,450
April	1,690	15,280
May	1,006	9,915
June	834	9,150
July	982	10,133
August	1,259	11,981
September	1,385	12,045
October	1,420	13,180
November	1,125	13,180
December	980	10,430

**Additional information:**

1. In November, the opening work in progress inventory contained 1,000,000 units that were 30% complete with respect to conversion costs.
2. During the same month of November, the manufacturing department transferred 1,500,000 units.
3. The closing inventory for the month of November was 1,200,000 units and the units were 30% incomplete with respect to conversion costs.
4. Using the above information, you have obtained the following variables by applying simple regression analysis.

	Sh. „000“
Constant	3,709
Slope	6,487

**Required:**

- i) Use the high-low method to estimate the overhead cost function. (4 marks)
- ii) Use the regression method to determine the overhead cost function. (2 marks)
- iii) Compute the equivalent units of production with respect to conversion costs for the month of November using the FIFO method. (4 marks)
- iv) Use the regression function formulated in (ii) above to estimate the overhead cost for the month of November. (4 marks)

**(Total: 20 marks)**

**SECTION II**

**QUESTION SIX**

- (a) You are the cost accountant of a company whose management is in need of a report on the previous years' cost management practices. Explain the characteristics of an effective report. (5 marks)
- (b) Management is often faced with situations whereby products which are manufactured within the organization have higher manufacturing costs compared to that which would have been paid for if the products were bought in an open market. However, a decision to discontinue manufacture in favour of buying cannot be made simply by comparing internal costs with external buying prices.

Explain four factors which the management should take into consideration when making such a decision. (5 marks)

- (c) Site and contract work present particular difficulties for cost control and accurate cost accounting. Explain the problems that are likely to arise and how these problems can be minimized. (10 marks)

### QUESTION SEVEN

- (a) A business firm requires complete, accurate and updated information. A combination of both financial accounting and cost accounting systems can facilitate in the achievement of this goal.

**Required:**

- i) Distinguish between cost accounting and financial accounting. (4 marks)
  - ii) Explain the advantages of a cost accounting system. (4 marks)
  - iii) What factors should be taken into consideration before setting up a cost accounting system? (6 marks)
- (b) Outline the procedure followed in implementing job costing. (6 marks)
- (Total: 20 marks)**

**KENYA ACCOUNTANTS AND SECRETARIES NATIONAL EXAMINATIONS  
BOARD**

**ATC PART 1**

**COST ACCOUNTING**

**December 2013**

**3 hours**

**Answer FOUR questions in SECTION 1 AND ONE question in SECTION II. Marks allocated to each question are shown at the end of the question. Show ALL your workings.**

**SECTION I**

**QUESTION ONE**

Mavuno Ltd. is a small-scale company that specializes in the production of farm tools.

The company uses budgets for planning and controlling its activities. Currently the management are preparing budgets for the three months ending 31 March 2006.

The projected balance sheet as at 31 December 2005 is shown below:

	<b>Cost Shs.</b>	<b>Depreciation Shs.</b>	<b>Net book value Shs.</b>
Fixed assets	<u>2,000,000</u>	<u>200,000</u>	<u>1,800,000</u>
<b>Current assets:</b>			
Inventory		320,000	
Trade debtors		630,000	
Cash and bank balances		<u>8,400</u>	
		958,400	
<b>Current liabilities:</b>			
Trade debtors	28,000		
Accrued expenses	20,000		
Proposed dividend	4,000		
Taxes payable	<u>3,500</u>	<u>(55,500)</u>	<u>902,900</u>
			<u>2,702,900</u>
<b>Financed by:</b>			
Ordinary share capital			
100,000 ordinary shares of Sh. 10 each			1,000,000
Share premium			500,000
Retained profits			452,900
<b>Long term liability:</b>			
Bank loan			<u>750,000</u>
			<u>2,702,900</u>



The following information has been extracted from the company's budget schedules:

	Sales	Rent	Overheads	Wages	Material stocks
	Shs.	Shs.	Shs.	Shs.	Shs.
2005					
November	500,000	80,000	180,000	40,000	272,000
December	340,000	80,000	180,000	60,000	320,000
2006					
January	400,000	80,000	190,000	60,000	480,000
February	600,000	80,000	200,000	80,000	464,000
March	580,000	80,000	200,000	74,000	464,000
April	580,000	80,000	200,000	70,000	500,000

**Additional information:**

- The company sells the farm tools at a mark up of 25%.
- Purchase of material stocks is on credit and it is paid for in the month of receipt by the company.
- Employees are paid wages at the end of every week with the earnings of the last week of the month being settled in the following month. (Assume one month has 4 weeks)
- Sales commission is paid one month in arrears at the rate of 1% of sales.
- Overheads include a monthly depreciation charge of Sh. 25,000.
- 25% of the sales are on cash basis. The other 75% is receivable two months after the sale.
- The company will receive a loan of Shs. 2, 500,000 in the month of March 2006 from Wakulima Bank.
- Old equipment will be sold for Shs. 250,00 in February 2006 and a new equipment will be purchased at Sh. 1,200,000 to replace the old equipment sold. The new equipment will be paid for in the month of March 2006.
- Rent is paid for quarterly in advance in the months of January, April, July and October.

**Required:**

- Cash budget for the three months ending 31 March 2006. (6 marks)
- Budgeted trading profit and loss account for the three months ending 31 March 2006. (6 marks)
- Budgeted balance sheet as at 31 March 2006. (8 marks)

**(Total: 20 marks)**

**QUESTION TWO**

- Briefly explain the following terms as used in cost accounting:
  - Mixed costs. (2 marks)
  - Cost behaviour (2 marks)
  - Incremental cost. (2 marks)
- Jogi Transporters operate in the transport industry. On 1 December 2005, the management acquired a new lorry to meet customer needs and cater for the increase in business volume.

The following information relates to the initial and maintenance cost of the lorry.

	Shs.
Cost	12,000,000
Scrap value	2,000,000
Insurance premium per annum	400,000
Annual road licence fee	12,000
Replacement of tyres after every 25,000 kilometres	48,000
Maintenance costs after every 5,000 kilometres	15,000
Replacement of spare parts per service	8,000
Price of fuel per litre	60

**Additional information:**

1. The lorry has an economic life of 4 years.
2. The lorry has 6 tyres each costing Sh. 8,000.
3. Service is carried out after every 5,000 kilometres.
4. On average the lorry covers 20 kilometres per litre of fuel consumed.
5. The lorry is projected to cover 100,000 kilometres in January 2006, 25,000 kilometres in February 2006 and 50,000 kilometres in March 2006.

**Required:**

Prepare a schedule for the three months showing:

- (i) Variable costs per kilometer. (4 marks)
  - (ii) Fixed costs per kilometer. (4 marks)
  - (iii) Total costs per kilometer. (2 marks)
- (c) “Fixed costs are actually variable costs.”  
With reference to (b) above, explain whether you agree or disagree with the statement. (4 marks)

**(Total: 20 marks)**

**QUESTION THREE**

XYZ Ltd. carries on its business in Nairobi. The company has been reporting its profits using absorption costing system. During the financial year ended 30 September 2005, the following summary statement was provided:

	Shs.	Shs.
Sales (4,000 units)		5,000,000
<b>Production cost of sales:</b>		
Variable	3,000,000	
Fixed	<u>1,000,000</u>	<u>(4,000,000)</u>
Gross profit		1,000,000
<b>Expenses:</b>		
Variable	800,000	
Fixed	<u>800,000</u>	<u>(1,600,000)</u>
Net loss		<u>(600,000)</u>

Currently the company is implementing strategies to improve its profitability, which are to be implemented in two phases; A and B. Each phase will cover a period of six months.

The expected production and sales in units for each of the phases are shown below:

	Phase A	Phase B
	Units	Units
Production	2,500	3,000
Sales	2,400	2,900

The fixed costs are expected to increase by 20% while the variable costs per unit will remain as they were in the previous period. The selling price per unit will be Shs. 1,500.

**Required:**

- (a) Profit and loss statements for phases A and B using:
  - (i) Marginal costing. (6 marks)
  - (ii) Absorption costing (6 marks)
- (b) Briefly explain the differences resulting from the two methods employed in (a) above of reporting profits. (2 marks)
- (c) Reconcile the resulting difference in the reported profit under the two methods. (2 marks)
- (d) Briefly explain which of the two methods is better in estimating profits of a manufacturing enterprise. (4 marks)

**(Total: 20 marks)**

**QUESTION FOUR**

MMC Ltd. produces machine parts on a job-order basis. Majority of the business contracts are obtained through bidding. Business firms competing with MMC Ltd. bid full cost plus 20 per cent mark up. Recently, with the expectation of increase in sales. MMC Ltd. reduced its mark up from 25 per cent to 20 per cent.

The company operates two support departments and two production departments. The budgeted costs and the normal activity levels for each department are given below:

	Support Departments		Production Departments	
	Maintenance	Power	Grinding	Assembly
Overhead costs (Shs.)	1,000,000	2,000,000	1,000,000	500,000
Number of employees	8	7	30	30
Maintenance hours	2,000	200	6,400	1,600
Machine hours	-	-	10,000	1,000
Labour hours	-	-	1,000	10,000

**Additional information:**

1. The direct costs of the maintenance department are allocated on the basis of employees while those of power department are allocated on the basis of maintenance hours.
2. Departmental overhead rates are used to assign costs to products. Grinding department uses machine hours and assembly department uses labour hours.

MMC Ltd. is preparing to bid for a contract, job K, that requires three machine hours per unit produced in grinding and zero hours in assembly department. The expected prime costs per unit are Shs. 670.

**Required:**

- (a) Allocate the support service costs to the production departments using the direct allocation method. (3 marks)
- (b) What will be the bid for job K if the direct allocation method is used? (3 marks)
- (c) Allocate the service costs to the production departments using the sequential allocation method. (4 marks)

- (d) What will be the bid for job K if the sequential allocation method is used? (3 marks)
- (e) Briefly explain the problems encountered in setting overhead cost standards. (3 marks)
- (f) Distinguish between cost allocation and cost apportionment. (4 marks)
- (Total: 20 marks)**

### QUESTION FIVE

- (a) In relation to process costing, explain the following terms:
- (i) Direct material costs (1 mark)
- (ii) Conversion costs (1 mark)
- (b) Explain the features that are necessary for process costing to be effectively applied in a business entity? (2 marks)
- (c) Pakawa Ltd. employs five processes to manufacture a hybrid fertilizer branded “Sunshine”. The data below relates to process C for the month of October 2005:

Opening work-in progress	<b>Shs.</b>
Transferred from process B	112,000
Labour costs from process B	76,500
	<b>Units</b>
Beginning work-in-progress	8,500 (50% complete)
Transferred from process B during the month	62,500
Completed during the month	56,000
Ending work-in-progress	9,000 (75% complete)
Current costs:	<b>Shs.</b>
Transferred in from process B	1,250,000
Material costs	750,400
Labour costs	491,000

Material costs are added to the product as the end of the process and conversion costs are assumed to be incurred uniformly throughout the process. Manufacturing overhead is applied to the product on the basis of 50 per cent of labour cost.

#### Additional information:

- Units lost during processing are considered to be a normal occurrence unless the number of lost units exceed 5 per cent of total units accounted for. The cost of normal loss is absorbed by the cost of total units accounted for.
- Lost units in excess of 5 per cent are considered abnormal. This cost is separately identified and written off as a loss. The company cost accounts follow a policy of assigning only transferred-in costs to abnormally lost units.

#### Required:

Using the FIFO method of valuing inventory, prepare process C statement for the month of October 2005 showing:

- (i) Total cost assigned to good units and transferred to process D. (8 marks)
- (ii) Total loss due to abnormal lost units. (2 marks)
- (iii) Valuation of closing work-in-progress in total and by elements of cost (3 marks)
- (d) Identify the causes of losses in process costing. (3 marks)
- (Total: 20 marks)**

## SECTION II

## QUESTION SIX

- (a) Summarize the sequence used in the compilation of the annual budget in a manufacturing company. (6 marks)
  - (b) Explain the advantages and disadvantages of zero base budgeting. (6 marks)
  - (c) (i) Briefly explain the limitations of relying on accounting based techniques for assessing the performance of a business organization. (6 marks)  
(ii) Briefly explain the term "management by exception." (2 marks)
- (Total: 20 marks)**

## QUESTION SEVEN

- (a) Briefly explain just in time (JIT) technique. (2 marks)
  - (b) Many organizations do not maintain a perpetual inventory control system. What considerations should be taken into account in such organizations, to ensure accurate results during the annual stock taking? (11 marks)
  - (c) (i) Define the term „standard cost“. (2 marks)  
(ii) State the disadvantages of using standard costing in a manufacturing firm. (5 marks)
- (Total: 20 marks)**

## ANSWERS - PAST PAPERS

### SUGGESTED SOLUTIONS TO THE PAST PAPER QUESTIONS

#### MAY 2008

#### QUESTION ONE

Healthcross Products Ltd

Sales Debtor Collection Schedule for May to September 2000.

	May Shs „000“	June Shs „000“	July Shs „000“	August Shs „000“	September Shs „000“
Sales	200	200	380	560	620
Payment @ 60%	120	120	228	336	372
Payment after 1 month	-	40	40	76	112
Payment @ 20%					
Payment after 2 months	-	-	30	30	57
Payment @ 15%					
Total Sales Collection	<u>120</u>	<u>160</u>	<u>298</u>	<u>442</u>	<u>541</u>

Healthcross Products Limited

Purchases Schedule for May to September 2000

	May	June	July	August	September
Units of purchase	5,000	5,000	9,000	20,000	12,000
Cost per unit (shs)	20	20	24	30	30
Purchases Value (Shs“000)	100	100	216	600	360
Payment	-	100	100	216	600

Healthcross Products Limited

Cashflow statement for July to September 2000

	July	August	September
<u>Receipts:</u>			
Sales	(A) 298	442	541
<u>Payments</u>			
Purchases	100	216	600
General and administrative expenses	80	80	80
Lease payments (see workings)	150	-	-
Corporation tax	-	-	150
Asset Supplies	-	-	200
Bank overdraft interest	-	1.64	-
Total payments	(B) <u>330</u>	<u>297.64</u>	<u>1,030</u>
Net Balance (A-B)	(32)	<u>144.36</u>	<u>(489)</u>
Bank Overdraft	82	<u>(82)</u>	<u>426.64</u>
Add: Opening Balance	<u>50</u>	<u>100</u>	<u>162.36</u>
Closing Balance	<u>100</u>	<u>162.36</u>	<u>100</u>

Working:

Lease payment per month = Shs 50,000

∴ Per Quarter Year = 3 months x 50,000 = Shs 150,000.

**QUESTION TWO**

Sancross Products Ltd

Cost Per Unit of Product	A	B
Direct Material – M1	60	80
-M2	<u>70</u>	<u>60</u>
Total Material Cost	130	140
Direct Labour:- L1	160	120
L2	<u>220</u>	<u>240</u>
Total Labour Cost	<u>380</u>	<u>360</u>
PRIME COST	510	500
Fixed Production Overheads	<u>380</u>	<u>360</u>
Production Cost	890	360
Administration, selling and Distribution costs @ 20%	<u>178</u>	<u>172</u>
Total Standard Cost of Product	1,068	1,032
Profit @ 25% of Product cost	<u>267</u>	<u>258</u>
Selling Price	<u>1,335</u>	<u>1,290</u>

a) Production Budget (Workings)

	A	B
Projected Sales	12,033,000	10,053,000
Selling Price/Unit	1,335	1,290
Sales Units Projected	9,013	7,793
Opening Stock (Shs)	Shs 3,000,000	Shs 2,000,000
Opening Stock (Units)	3,000,000/890 = 3,371 Units	2,000,000/860 = 2,326 Units
Closing Stock (Shs)	Shs 5,000,000	Shs 4,000,000
Units	5,000,000/890 = <u>5,618</u> Units	Shs 4,000,000/860 = <u>4,651</u> Units

Sancross Products Limited

Production Budget (Units) for the year commencing 1 July 2000

	A	B
Sales	9,013	7,793
Closing Stock	<u>5,618</u>	<u>4,651</u>
Less Opening Stock	14,631	12,444
Production	<u>(3,371)</u>	<u>(2,326)</u>
	<u>11,260</u>	<u>10,118</u>

b)

Sancross Products Limited

Direct Materials Cost Budget

	M1		M2	
		Shs		Shs
Product A:	11,260 x 15 x 4	675,600	11,260 x 14 x 5	788,200
B:	10,118 X 20 X 4	<u>809,440</u>	10,118 x 12 x 5	<u>607,080</u>
		<u>1,463,800</u>		<u>1,416,520</u>

c)

Sancross Products Limited

Purchases Cost Budget for Raw Materials

	M1	M2
	Shs	Shs
Direct materials Usage	1,463,800	1,416,520
Add: Closing stock	220,000	270,000
	1,683,800	1,686,520
Less Opening stock	(200,000)	(250,000)
	<u>1,483,000</u>	<u>1,436,520</u>

d)

Sancross Products Ltd

Direct Labour Cost Budget

	L1		L2	
		Shs		Shs
Product A	20 x 8 x 11,260	1,801,600	22 x 10 x 11,260	2,447,200
Product B	15 x 8 x 10,118	<u>1,214,160</u>	24 x 10 x 10,118	<u>2,428,320</u>
		<u>3,015,760</u>		<u>4,905,520</u>

**QUESTION THREE**

a)

Solacross Limited

Profit and Loss Statement for the year ended 31<sup>st</sup> March 2000:Using Direct Costing Approach

		Shs „000“	Shs „000“
Sales:	(24,000 x 550)		13,200
Cost of Sales			
Direct Material	<u>7,200</u> x 24,000	5,760	
	30,000		
Direct labour	<u>1,800</u> x 24,000	1,440	
	30,000		
Variable Overheads	<u>1,500</u> x 24,000	<u>1,200</u>	(8,400)
	30,000		
GROSS CONTRIBUTION			4,800
Less: Variable Sales Commission	<u>300</u> x 24,000		(240)
	30,000		
NET CONTRIBUTION			4,560
Expenses: Fixed costs of selling & Administration			
Fixed overheads (of production)		2,700	
Sales salaries		450	
Promotion and advertising		480	
Other fixed costs		<u>720</u>	(4,350)
NET PROFIT			<u>210</u>



b)

Solacross Limited

Profit and Loss Statement for the year ended 31<sup>st</sup> March 2000

Using the Indirect Costing Method

	Shs „000“	Shs „000“
Sales:		13,200
Less Cost of Sales:		
Production costs: (7,200 + 1,800 + 1,500 + 720)	13,200	
Less: Closing Stock: ( <u>13,200</u> x 6,000)		
30,000	(2,640)	10,560
GROSS PROFIT		2,640
Expenses of Selling and Administration		
Sales Salaries	450	
Variable Selling Commission	300	
Promotion and advertising	480	
Other fixed costs	<u>720</u>	(1,950)
NET PROFIT		690

Differences in the profit using the direct and indirect costing approaches arise due to the valuation of stocks. In the direct method, cost of stocks is only variable costs while in the indirect method, the costs of stocks is made up of both variable costs and the fixed production overheads.

In direct costing, fixed production overheads are fully written off or expensed on period costs. In indirect approach, part of them are carried forward in closing stocks to be written off in the next accounting period.

**QUESTION FOUR**

(a)

2000 Products Ltd

Store Perpetual Inventory Record for item P0003 for April 2000 Using LIFO

DATE	RECEIPTS			ISSUES			BALANCE		
Year 2000	Units	Cost/Unit	Value	Units	Cost/Unit	Value	Units	Cost/Unit	Value
April		Shs	Shs		Shs	Shs		Shs	Shs
1							3,000	19	57,000
3	2,400	18	43,200	-	-	-	<u>2,400</u>	18	<u>43,200</u>
							5,400		100,200
4	-	-	-	2,400	18	43,200			
				<u>800</u>	19	<u>15,200</u>			
				3,200		58,400	2,200	19	41,800
6	2,600	20	52,000	-	-	-	<u>2,600</u>	20	<u>52,000</u>
							<u>4,800</u>		<u>93,800</u>
12	-	-	-	2,600	20	52,000			
				<u>100</u>	19	<u>1,900</u>			
						53,900	2,100	19	39,900
14	3,000	22	66,000	-	-	-	<u>3,000</u>	22	<u>66,000</u>
							<u>5,100</u>		<u>105,900</u>
18	2,800	21	58,800	-	-	-	7,900	-	164,700
20	-	-	-	2,200	21	46,200	5,700	-	118,500
22	2,600	23	59,800	-	-	-	8,300	-	178,300
25	-	-	-	2,600	23	59,800			
				<u>600</u>	21	<u>12,600</u>			
				<u>600</u>	22	<u>13,200</u>			
				<u>3,800</u>		<u>85,600</u>	<u>4,500</u>	=	<u>92,700</u>
26	3,100	24	74,400	-	-	-	7,600		167,100
27	2,500	25	62,500	-	-	-	10,100		229,600
28	3,200	26	83,200	-	-	-	13,300		312,800
29	-	-	-	3,200	26	83,200			
				2,500	25	62,500			
				<u>1,200</u>	24	<u>28,800</u>			
				<u>6,900</u>		<u>174,500</u>	<u>6,400</u>	=	<u>138,300</u>
TOTALS	22,200	-	499,900	18,800		418,600			

b)

Valuation of Closing Stocks

Units	Cost/Unit	Amount
	Shs	Shs
2,100	19	39,900
2,400	22	52,800
<u>1,900</u>	24	<u>45,600</u>
<u>6,400</u>		<u>138,300</u>

**QUESTION FIVE**

a)

**SANNET PRODUCTS LTD**

	PRODUCTS		
	A	B	C
Units produced	320	640	1,200
Time allowed per unit (minutes)	63	120	100
Time allowed for units produced in minutes	20,160	76,800	120,000
Time allowed in hours	336	1,280	2,000

∴ Total time allowed to produce the three products = 336 + 1,280 + 2,000 = 3,616 hours

Hours Actually Worked:

	<u>GRADE OF WORKERS</u>		
Number of workers	1/20	2/8	3/32
Hours worked per worker	30	64	50
Total hours worked per Grade	600	512	1,600

Total hours worked by all the workers = 600 + 512 + 1,600 = 2,712 hours

Hours saved = 3,616 – 2,712 = 904 hours

∴ Percentage of Hours saved to Hours taken =  $\frac{904}{2,712} \times 100 = \underline{33.33\%}$

Bonus due to the Group

Grade of workers:	<u>1</u>	<u>2</u>	<u>3</u>
Base rate per hour	30	27	24
Bonus rate @ 75% per hour:	22.50	20.25	18

Total Bonus Rate per hour = 22.50 + 20.25 + 18 = Sh 60.75

Total hours saved = 904

∴ Total bonus due = 904 x 60.75 = Shs 54,918.

Shared out to workers as follows:

To each:  $\frac{\text{Time Spent}}{\text{Total time}} \times \text{Bonus}$

To	1:	$\frac{600}{2,712} \times 54,918 = \text{Shs } 12,150$
	2:	$\frac{512}{2,712} \times 54,918 = \text{Shs } 10,368$
	3:	$\frac{1,600}{2,712} \times 54,918 = \text{Shs } 32,400$

Gross Earnings due to the Group:

Gross Earnings = Basic Pay + Bonus Pay

Grade of workers	<u>1</u>	<u>2</u>	<u>3</u>
Hours worked	600	512	1,600
Base rate (Shs)	30	27	24
Basic pay (Shs)	18,000	13,824	38,400
Add Bonus (Shs)	12,150	10,368	32,400
Gross earnings	30,150	24,192	70,800

## SECTION II

## QUESTION SIX

a)

To: The Management, Magicross Limited  
 From: The Cost Accountant, Magicross Limited

Re: Increasing Bank Overdraft in spite of a Reported Profitability:

The following factors could be the cause of increased bank overdraft in spite of the fact that the accounts have reported an increased profitability.

- (i) **Increased debtors:** This leads to increased sales, thus increased profits; but the cash available decreases if the debtors are not quickly realized thus making the company borrow.
- (ii) **Failure to purchase on Credit:** The company pays for supplies in cash thus it depletes the available cash resources.
- (iii) **Purchase of fixed assets:** The fixed assets usually need heavy initial capital investment thus may greatly reduce the available cash resources of the company, despite the fact that the assets could be used to produce a lot of goods for sale.
- (iv) **Prepayments:** If the company spends a lot of money prepaying its expenses, the cash resources prepaid will not be available for its use.
- (v) **Non-cash items:** Profits reported could increase due to reduction in non-cash flow expenses such as depreciation and losses on disposal of fixed assets. Non cash flow incomes such as reduction in provision for bad and doubtful debts as well as profits on disposal of fixed assets could also increase the reported profit without increasing the cash flow of the company.

b) The company can improve its liquidity without seeking external funds by:

- (i) **Improving debtor's collection:** Ensuring the debtors pay as soon as their credit period lapses.
- (ii) **Increase Credit Purchases:** Maximize on the use of credit in purchasing supplies in order to preserve the company's liquidity.
- (iii) **Use of Just-in-Time System of Stock:** Purchase the stock only when there is a ready sales order, but do not stock pile.
- (iv) **Purchase of EOQ Stocks:** The Company can minimize its cash outflows in creditors payments if it purchases the economic order quantity of stocks, as this will minimize its cash payments to creditors. It also minimizes its stock holding costs such as handling costs, insurance costs and stock losses through pilferages, frauds, obsolescence etc
- (v) **Minimize prepayments:** Only pay for goods or services when provided or after provision.
- (vi) **Investment Policy:** Only invest the excess liquidity in short-term investments that have a rate of return acceptable to the firm.
- (vii) **Purchase from suppliers with credit:** Preferably purchase from those who can offer the longest credit period and can offer acceptable to the firm.

- (viii) **Take advantage of discounts:** Quality and cash discounts from suppliers should be utilized as far as possible.
- (ix) **Dispose redundant Assets:** Excess assets should be sold to avoid idle capacities and holding of cash in assets for no reason.
- (x) **Quality Decision Making:** The management should make decisions that maximize the company's net present value.

### QUESTION SEVEN

**Flexible Budgeting:** This is a budgetary approach that considers the actual level of activities achieved in a given period, and adjusts the budgeted cost (at the budgeted activity level) to the actual activity level. The fixed budget is therefore flexed to the actual performance. The actual performance flexed budget is then used to evaluate the performance of the company.

This method is more equitable as it considers the fact that different levels of activities will inevitably consume levels of resources (costs) different from those budgeted. It would be more equitable only to evaluate the actual performance from the same basis of output level (flexed level) and not from the budgeted level.

a) How flexible budgeting may be utilized to control costs:

**Provides information about actual performance:** The management needs to be informed on the performance level achieved and the cost levels expected for that performance level. This will form a good basis of performance level.

**Business Dynamism:** Business environments and activities are never static. Thus, it is illogical to expect the actual activity level to coincide with the budgeted activity level. Flexible budgeting enables the static fixed budgets to be useful for purposes of evaluating business performance in a dynamic environment.

**Provides useful control information:** The variances calculated by comparing actual performance with expected (flexed) performance provides managers with useful performance control information.

## **COST ACCOUNTING**

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JULY 2008

## QUESTION ONE

- (a) Marginal costing refers to a method of costing products (goods and services) in which the cost per unit is only the variable costs. Thus, the current production and closing stocks are valued at their variable costs only. The manufacturing fixed overheads are written off or expensed wholly in the period in which they are incurred.

**Limitations of Marginal costing:**

These arise from the assumptions of marginal costing which are:

Costs can be classified as either fixed or variable. Marginal costing does not therefore consider the mixed costs.

Selling price is assumed constant: in reality, the selling price per unit decreases with increased sales due to the effect of quantity discount.

Fixed costs are assumed to remain fixed within the relevant range; in reality, stepped costs functions exist i.e. fixed costs rise to a higher level when certain critical production levels are achieved.

Constant sales mix: or single product is assumed; in reality, organizations produce many products and also change their product mix when circumstances dictate.

Variable costs are assumed to be constant: in reality, this is not true due to decreasing costs per unit due to the effect of large scale production.

- (b)

Kenya Limited:

	Shs. „000“
Sales	24,000
Less: variable costs @ 60% x 20 million:	<u>(12,000)</u>
Contribution:	12,000
Less: fixed costs @ 40% x 20 million	<u>(8,000)</u>
NET PROFIT	<u>4,000</u>

- (i) Margin of Safety = Current Sales – Break even Sales

$$\begin{aligned} \text{But Break Even Sales} &= \frac{\text{Fixed Costs}}{\text{Contribution margin ratio}} = \frac{8,000,000}{[12,000,000/24,000,000]} \\ &= \text{Shs } 16,000,000 \end{aligned}$$

$$\text{Margin of Safety} = 24,000,000 - 16,000,000 = \text{Shs } 8,000,000$$

- (ii) Break Even point in Sales =  $\frac{\text{Fixed Cost}}{\text{Contribution Margin Ratio}} = \frac{8,000,000}{(120,000,000/24,000,000)}$

- (iii) Sales required to earn a profit of Shs 6,000,000. = Shs 16,000,000

$$\begin{aligned} &= \frac{\text{Fixed Costs} + \text{Target Profits}}{\text{Contribution sales ratio}} = \frac{(8,000,000 + 6,000,000)}{(12\text{million}/24\text{million})} = \text{Shs } 28,000,000 \end{aligned}$$

- (iv) Option 1: Fixed costs will rise by Sh 2.5m.  
2: Variable cost to sales ratio will be 50/95.

## Profit Statements

	Option 1 Shs „000“	Option 2 Shs „000“
Sales	30,000	27,600
Variable costs (50%)	(15,000)	(14,526)
Contribution	15,000	13,074
Fixed costs	(10,500)	(8,000)
NET PROFIT	<u>4,500</u>	<u>5,074</u>

NB: Initial profit was Shs 4,000,000.

Advise to Management: decrease sales price by 5% as this will result in the highest net profit.

**QUESTION TWO**

Advantages of centralized systems of maintaining stores:

- Lower stocks on average which lowers the holding costs. Less risk of duplication of costs and efforts.
- Closer control of stocks and costs is possible at the central site.
- Higher quality staff may be efficiently employed to specialize in various aspects of store keeping.
- Reduced paperwork
- Bulk purchasing reduces the purchase cost due to quantity discounts Stock taking is facilitated
- It is cost effective to employ expensive and advanced technology.
- Standardization of procedures is possible and easily enforced.

- a) Economic Order Quantity (EOQ) refers to the quantity of purchase of stocks or materials that minimizes the holding costs and the ordering costs. It is therefore the optimal ordering amount. It is computed as:

$$EOQ = \sqrt{\frac{2DC_o}{Ch}}$$

Where: D = Annual demand

Co = Cost of Ordering per unit

Ch = cost of holding one unit of stock per annum.

Assumptions behind EOQ:

- Constant and known holding costs.
- Constant and known ordering costs.
- Annual demand and the rate of demand per given period of time is know.
- Know and constant purchase price per unit.
  - Instantaneous replenishment of stocks i.e. a whole batch is delivered to stores at once.

c) Material Y-20

Re order level

= Maximum consumption x Maximum Re-order period

= 1,200 X 24 = 28,800 UNITS

Minimum Stock Level = Re-order level – [Normal consumption x Normal R-order period.]



$$= 28,800 - \left[ 900 \times \frac{(12 + 24)}{2} \right] = 12,600 \text{ units}$$

$$\text{Maximum stock level} = \text{Re-order Level} - \left[ \frac{\text{Minimum Consumption} \times \text{minimum Re-order period}}{2} \right] + \text{Re-order Quantity}$$

$$= 28,800 - [800 \times 12] + 32,000 = 51,200 \text{ units.}$$

### QUESTION THREE

(a)

- (i) **Normal Loss:** This is a process loss that is inherent in the process and is therefore expected to occur. For example, in boiling, we would expect evaporation to occur. The cost of normal loss is absorbed as a cost of production.
- (ii) **Abnormal Loss:** Is a process loss that is above the expected level of loss i.e. Actual Loss – Normal Loss. It occurs due to such factors as carelessness, breakdown of machines etc. Abnormal losses are valued just like good production.
- (iii) **Joint products:** These are products that are processed together but each has a high saleable value to merit recognition as a main product. To produce the two products, the inputs have to be processed together and the products are separated during later stages of process.

(b)

Timau Ltd

Production Statement: June 2000

	Inputs	Total output Units	Material Units	Labour Units	Overhead Units
Baa b/f	5,000	21,000	21,000	21,000	21,000
Mixing Process	<u>20,000</u>	<u>4,000</u>	<u>4,000</u>	<u>1,600</u>	<u>2,400</u>
	<u>25,000</u>	<u>25,000</u>	<u>25,000</u>	<u>22,600</u>	<u>23,400</u>
		Total Cost (Shs)	Equivalent Units of Production (Shs)		
Balance b/f (W.I.P)		185,000	100,000	25,000	60,000
Costs Added		<u>278,400</u>	<u>45,300</u>	<u>125,000</u>	<u>108,100</u>
Total Costs to account for:		<u>463,400</u>	<u>145,300</u>	<u>150,000</u>	<u>168,100</u>
Cost per Equivalent Unit:		19.633	5.812	6.637	7.184
Costs Accounted for as follows:					
Transfer to finished goods: 21,000 x 19.633		412,291	122,050	139,380	150,859
Closing work in Process:		<u>51,109</u>	<u>23,248</u>	<u>10,619</u>	<u>17,242</u>
Total Costs Accounted for:		<u>463,400</u>	<u>145,300</u>	<u>149,999</u>	<u>168,101</u>

Refining Process A/C					
	Units	Unit Cost	Value		Units Unit cost Value
Bal b/f (W.I.P)	5,000		185,000	Finished goods	21,000 19.633 412,291
Units added	20,000			Closing W.I.P	
Costs added				Bal c/f	4,000 12.777 51,109
Raw material	-		45,300		
Labour			125,000		
overheads			108,100		
	<u>25,000</u>		<u>463,400</u>		<u>25,000 463,400</u>

**QUESTION FOUR**

- a) Overhead Variance = Total Budgeted overheads – Total Actual Overheads  
 $= (88,000 + 55,000) - (90,000 + 58,000) = \text{Shs } 143,000 - \text{Shs } 148,000$   
 $= \text{Shs } 5,000\text{A}$
- b) Fixed Production Overhead Variance  
 $= \text{Actual Fixed Overheads} - \text{Standard Fixed Overheads}$   
 $= \text{Shs } 90,000 - (2,700 \times [88,000/2,750])$   
 $= \text{Shs } 90,000 - 86,400$   
 $= \text{Shs } 3,600\text{(A)}$
- c) Variable Production Overhead Variance  
 $= \text{Actual Variable Overheads} - \text{Standard Variable Overheads}$   
 $= 58,000 - [2,700 \times (55,000/2,750)]$   
 $= 58,000 - 54,000$   
 $= \text{Shs } 4,000\text{(A)}$
- d) Fixed Production Overhead Expenditure Variance  
 $= 90,000 - 88,000$   
 $= \text{Shs } 2,000\text{(A)}$
- e) Fixed Production Overhead Volume Variance  
 $= (\text{Budgeted} - \text{Actual Units}) \times \text{Fixed Overhead Absorption Rate per unit}$   
 $= (2,750 - 2,700) \times 32$   
 $= \text{Shs } 1,600\text{(A)}$
- f) fixed Production Overhead Efficiency or Productivity Variance  
 $= (\text{Actual Hours} - \text{Standard Hours}) \times \text{F.O.A.R per hour}$   
 $= (21,500 - 21,600) \times 88,000/22,000$   
 $= 100(4)$   
 $= \text{Shs } 400\text{F}$
- g) Capacity Variance Also called Fixed Overhead Capacity Variance  
 $= (\text{Budgeted Hours} - \text{Actual Hours}) \times \text{F.O.A.R Per hour}$   
 $= (22,000 - 21,500) \times 4$   
 $= \text{Shs } 2,000\text{(A)}$

**QUESTION FIVE**

(a)

A cash budget is a quantitative expression of the cashflows (inflows and outflow) of a given business entity for a defined period of time. It is used as a budgetary control measure to **basically ensure that the firm's cash requirements are met in a timely manner and the firm's cash flow is healthy.**

**Importance of a cash budget:**

To reveal in advance point of cash shortages and surplus, so that cash sources and investments can be arranged in advance.

To ensure the cashflow of a firm is healthy, (there are no shortages).

To allow management to consider the ways in which surpluses can be put into in advance.

To enable management formulate organizational policy e.g. credit policies when purchasing inputs, payroll policy (when to pay wages and salaries and in what amounts etc)

(b)

Cash Budget for the 2<sup>nd</sup> Quarter of Year 2001

<b>Cash Inflows</b>	<b>April Shs</b>	<b>May Shs</b>	<b>June Shs</b>
Cash from debtors (wk 1)	402,500	351,995	349,820
Debentures issued	-	125,000	-
<b>Total cash inflow (A)</b>	<b>402,500</b>	<b>476,995</b>	<b>349,820</b>
<b>Cash Outflows</b>			
Purchases	100,000	135,000	90,000
Purchase of machine	-	150,000	-
Dividends	-	-	100,000
Production overheads	40,000	45,000	36,000
Administration overheads	27,000	22,000	25,000
Selling and distribution overheads	18,000	13,000	11,000
Wages (wk 2)	79,000	58,500	60,750
Sales commission	13,200	10,500	10,800
<b>Total cash out flows (B)</b>	<b>277,200</b>	<b>434,000</b>	<b>333,500</b>
<b>Net cash flow (A – B)</b>	<b>125,300</b>	<b>42,995</b>	<b>16,270</b>
Add: opening cash balance	90,000	215,300	258,295
<b>Closing cash balance</b>	<b>215,300</b>	<b>258,295</b>	<b>274,565</b>

Workings:Debtors' collection

		<b>April Shs</b>	<b>May Shs</b>	<b>June Shs</b>
Sales in:				
February	350,000	35,000	-	-
March	440,000	300,300	44,000	-
April	350,000	67,200	238,875	35,000
May	360,000	-	69,120	245,700
June	360,000	-	-	69,120
		<b>402,500</b>	<b>351,995</b>	<b>349,820</b>

## Wages Payment

Month:	Wages	April Shs	May Shs	June Shs
March	100,000	25,000	-	-
April	72,000	54,000	18,000	-
May	54,000	-	40,500	13,500
June	63,000	-	-	47,250
		79,000	58,500	60,750

## SECTION II

## QUESTION SIX

(a)

In the account classification method, costs are simply distinguished as either fixed or variable, just like they are recorded in the books. The method may not be very objective as it depends a lot on the analysis judgement.

In the high-low method (Range Method), the cost figures for the highest and lowest output levels are compared. Their difference is taken to represent the variable costs. When this difference is divided by the difference in units, the variable cost per unit is obtained. This can then be substituted into either the high or low level costs and the fixed costs obtained. The method is reliable and objective, but uses only two sets of data.

(b)

- (i) **Direct Costs:** These are resources or costs that can be charged to a specific unit of production as they are incurred to produce it e.g. direct labour, direct raw material and direct expenses such as hire of special equipment.
- (ii) **Indirect costs:** Are costs incurred for the activities of a whole organisation and cannot therefore be identified with a specific unit of production for example, rents, rates, electricity etc.
- (iii) **Cost centre:** Is any geographical or physical part of an organisation in respect of which costs may be ascertained, allocated and related for purposes of cost control. It could be a department or function.
- (iv) **Cost Unit:** Refers to a quantitative unit of a product or service in relation to which costs are ascertained. This could be a unit of production (such as a tonne, kilogram) or a process equivalent unit.
- (v) **Joint Products:** Refers to two or more products using the same process but separated in the course of processing; each has a sufficiently high saleable value to merit recognition as a main product e.g. milk and butter.
- (vi) **By Products:** Is incidental output from the material used to manufacture the main products. They have relatively low realizable value when compared to the sale value of the main products e.g. sugar and molasses.
- (vii) **Period costs:** These are costs which relate to a particular period and are therefore usually expensed in that period. They are also called fixed costs because they do not change with changes in the level of output. They are therefore usually irrelevant for decision-making.
- (viii) **Product Costs:** Refer to costs incurred to produce output. It is made up of direct materials, direct labour, direct expenses and production overheads.

## QUESTION SEVEN

The Budget Committee formulates the general programme for the preparation of the budget. It performs the following duties:

Coordinating the whole budget preparation process.

Issuing budget preparation guidelines to the budgeting officers.

Providing historical information and forecasts to help the managers in preparing budgets.

Helping managers and other budget officers resolve any difficulties they may encounter during the budgetary process.

Ensuring that the officers (managers) prepare their budgets in time.

Suggesting budget reviews after critical evaluation of draft budgets forwarded to them by the managers.

Performing a final evaluation of budgets and approving them.

Preparing the budget summaries.

Submitting the budgets to the top managers.

(b)

Key factor also called the Critical Success Factor (CSF) or the Critical Constrain Factor (CCF) refers to the main factor that will have to be considered and incorporated into the budges to ensure that the prepared budgets are reasonable and executable. Key factor in most organisations is the demand for the units or service produced; once estimated, the other budgets can be prepared from its estimated budget.

(c)

Five key factors that affect the budgeting process:

- (i) **Demand:** the annual demand or any relevant period's demand must be estimated first before the purchases, production and expenses budgets can be prepared.
- (ii) **Plant capacity:** Is a critical factor especially in small firms in high growth markets. They must utilize their plant capacity in such a way as to maximize profits.
- (iii) **Labour:** Highly skilled labour is a key factor to consider especially in the developing countries where such labour may not be readily available or is very expensive.
- (iv) **Capital:** This is the main key factor in capital budgeting. The projects that will utilize the cash to generate the highest level of profits are taken first, *ceteris paribus*.
- (v) **Raw material:** This is a key factor especially if the materials' supply fluctuates over time. Some materials are also very expensive.
- (vi) **Machine hours:** These are a constraint in capital intensive firms because the machine capacity may be lower than the capacity required to meet the market demand. The available capacity will have to be utilized in such a way that profits are maximized.

## DECEMBER 2008

## QUESTION ONE

Nyali Mbali Ltd

Stores Ledger Account for July to September 2000 (Using FIFO Basis)

DATE	RECEIPTS			ISSUES			BALANCES		
Year	Units	Cost/ unit	Value (Shs)	Unit	Cost/ unit	Value (Shs)	Units	Cost/ unit	Value (Shs)
2000									
July 3							5000	165	825,000
July 10	22,000	145	3,190,000				<u>22,000</u>	145	3,190,000
							27,000		<u>4,015,000</u>
July 31	-	-	-	5,000	165	825,000			
				<u>15,000</u>	145	2,175,000			
				<u>20,000</u>		<u>3,000,000</u>	7,000	145	1,015,000
Aug 4	14,000	175	2,450,000				<u>14,000</u>	175	<u>2,450,000</u>
							<u>21,000</u>	-	<u>3,465,000</u>
Aug 30				7,000	145	1,015,000			
				<u>7,000</u>	175	<u>1,225,000</u>			
				<u>14,000</u>		<u>2,240,000</u>	7,000	175	1,225,000
Sept 1	24,000	195	4,680,000				<u>24,000</u>	195	<u>4,680,000</u>
							<u>31,000</u>		<u>5,905,000</u>
Sept 30				7,000	175	1,225,000			
				<u>20,000</u>	195	<u>3,900,000</u>			
				<u>27,000</u>		<u>5,125,000</u>	4,000	195	780,000
Totals	60,000		10,320,000	61,000		10,365,000			

Nyali Mbali Ltd

Stores Ledger Account for July to September 2000 (Using the Weighted Average Approach)

Date	RECEIPTS			ISSUES			BALANCES		
Year	Units	Cost/ unit	Value (Shs)	Unit	Cost/ unit	Value (Shs)	Units	Cost/ unit	Value (shs)
2000									
July 3	-	-	-	-	-	-	5,000	165	825,000
July 10	22,000	145	3,190,000	-	-	-	<u>22,000</u>	145	3,190,000
							27,000	149	<u>4,015,000</u>
July 31	-	-	-	20,000	149	2,974,074	7,000	149	1,040,926
Aug 4	14,000	175	2,450,000	-	-	-	<u>14,000</u>	175	<u>2,450,000</u>
							<u>21,000</u>	-	<u>3,490,926</u>
Aug 30	-	-	-	14,000	166	2,327,284	7,000	166	1,163,642
Sept 1	24,000	195	4,680,000				<u>24,000</u>	195	<u>4,680,000</u>
							<u>31,000</u>	188	<u>5,843,642</u>
Sept 30	-	-	-	27,000	188	5,089,624	4,000	188	754,018
Totals	60,000		10,320,000	61,000		10,390,982			

Sales: 31 July: 20,000 x 220	4,400,000
30 August: 14,000 x 230	3,220,000
30 September: 27,000 x 240	<u>6,480,000</u>
	<u>14,100,000</u>

Nyali Mbali Ltd

Trading Account for the period ended 30<sup>th</sup> September 2000 (Using FIFO Basis)

	Shs	Shs
Cost of Sales:		14,100,000
Opening stock	825,000	
Purchases	<u>10,320,000</u>	
Goods available for sale	11,145,000	
Less closing stock	<u>(780,000)</u>	
Cost of sales		<u>(10,365,000)</u>
GROSS PROFIT		<u>3,735,000</u>

Nyali Mbali Ltd

Trading Account for the period ended 30<sup>th</sup> September 2000 (Using the Weighted Average Basis)

	Shs	Shs
Sales		14,100,000
<b>Less cost of sales</b>		
Opening stock	825,000	
Add Purchases	<u>10,320,000</u>	
	11,145,000	
Less closing stock	<u>(754,018)</u>	
Cost of sales		<u>(10,390,982)</u>
GROSS PROFIT		<u>3,709,018</u>

## QUESTION TWO

Lotus Limited

Shs	Shs „000“	Shs „000“
Sales: 100,000 x 1,125		112,500
Less cost of sales:		
Variable costs: 100,000 x <u>300,000</u>		
	400,000	<u>(75,000)</u>
Incremental contribution to fixed overheads and profit:		<u>37,500</u>

The offer should be accepted because it has a positive contribution (to fixed overheads and profits) of Shs 37,500.

The Profit and Loss Account of Lotus Limited will be as follows:

Lotus Limited

Profit and Loss Account (After Accepting the Offer):

	Shs.	Shs.	Shs.
Sales: Normal:	400,000 units x 1,500	600,000	
Special offer	100,000 units x 1,125	<u>112,500</u>	
Total Sales Revenue			712,500
Less cost of sales:			
Manufacturing costs			
Variable costs: Normal sales		300,000	
Special order		75,000	
Fixed costs		<u>187,500</u>	<u>(562,500)</u>
GROSS PROFIT			150,000
Less Selling and administration costs			
Variable costs: (freight and commission)		30,000	
Fixed costs		<u>60,000</u>	<u>(90,000)</u>
Net Profit			<u>60,000</u>

The Profit and Loss Account before accepting the offer is as follows:

Lotus Limited

Profit and Loss Account (Normal Sales Only)

	Shs.	Shs.
Sales		600,000
Less cost of sales		
Variable costs	300,000	
Fixed overheads	<u>187,500</u>	<u>(487,500)</u>
GROSS PROFIT		112,500
Less Selling & administrative costs		
Variable cost (freight and commission)	30,000	
Fixed costs	<u>60,000</u>	<u>(90,000)</u>
Net Profit		<u>22,500</u>

Therefore incremental Net Profit = Shs 60,000 – 22,500 = Sh 37,500.

- ii) Factors to consider before accepting the offer include:
- ⇒ Will the vendor sell the mobile phones in the same market as we do?
  - ⇒ How do we finance the working capital requirements of the order?
  - ⇒ Will he pay before or after delivery?
  - ⇒ One likely future business with the customer: Is he likely to be a permanent and material customer?

(b)

Wassant Manufacturers

		Shs.	Shs.
Direct material	10 kg @ 25		250
Direct labour	Dept 1: 0.75 hrs @ Shs 120	90	
	Dept 2: 0.60 hrs @ Shs 125	75	<u>165</u>
Prime cost			415
Variable overheads			80
Production fixed overheads	20% of labour cost		<u>33</u>
Current Cost Per Unit			<u>528</u>



If the product is bought, the fixed production overheads will be  $75\% \times 33 = \text{Sh } 24.75$

∴ New cost per unit of import purchased:

	Shs
Purchase cost	510
Add: Unavoidable fixed production overheads	<u>24.75</u>
Relevant cost per unit of import	<u>534.75</u>

Decision:

The management should make the product as it will be cheaper by  
 $534.75 - 528 = \text{Shs } 6.75$  per unit.

ii) Factors to consider before making the decision.

⇒ The stability of inputs' prices: are they likely to rise in the near future?

⇒ Quality of the two products.

⇒ Opportunity costs: can we put the machines to better use if we purchase the imported product?

⇒ Legal considerations: Are our production systems compliant to legal requirements?

⇒ Technology: Is the technology we are using up to date or likely to change and in what direction: for better or worse?

### QUESTION THREE

#### REFINING PROCESS ACCOUNT

Process Inputs:	Units	Cost	Transferred to:	Units	Cost (Shs)
Opening W.I.P	5,000	185,000	Finished Products	21,000	403,074
Input:	20,000	-	Closing W.I.P	4,000	60,326.20
Conversion Costs	-	125,000			
Labour	-				
Overheads	-	108,100			
Other Materials	-	45,300			
	<u>25,000</u>	<u>463,400</u>		<u>25,000</u>	<u>463,400</u>

Valuation of Finished Units:

Equivalent Units of:

Materials:  $\frac{\text{Finished Goods} + \text{W.I.P}}{21,000 + (4,000 \times 100\%)} = 25,000 \text{ UNITS}$

Cost per Unit of Raw Material =  $\frac{100,000 + 45,300}{25,000} = \text{Sh } 5.812$

Labour:  $21,000 + (4,000 \times 80\%) = 24,200$

Cost per unit of labour =  $\frac{25,000 + 125,000}{24,200} = \text{Sh } 6.1983$

Overheads:  $21,000 + (4,000 \times 60\%) = 23,400$  units

Cost per unit of Overhead =  $\frac{60,000 + 108,100}{23,000}$

= Sh 7.184

Cost per finished Unit =  $5.812 + 6.1983 + 7.184$

= Sh 19.194

#### TINN LTD

#### PRODUCTION STATEMENT

##### Physical Units:

<u>Inputs:</u>	Units	Unit Cost
Opening Stock	5,000	-
Units Introduced	<u>20,000</u>	-
	25,000	
Units Accounted for as:		
To finished goods	21,000	-
To work in process	<u>4,000</u>	-
	<u>25,000</u>	

##### Cost Statement

	Shs.
Opening Stock	185,100
<u>Costs Added</u>	
Labour	125,000
Overheads	108,000
Materials	<u>45,300</u>
Costs to Account for	<u>463,400</u>
Accounted for as follows:	
To finished goods:	
21,000 x 19.194	403,074
To work in process:	
Material: 4000 x 5.812	23,248
Labour: 3,200 x 6.1983	19,836.4
Overheads: 2,400 x 7.184	17,241.6
Valuation of work in process	60,326
Total Costs accounted for:	<u>463,400</u>

#### **QUESTION FOUR**

Kenya Ltd

- b) Let the total cost of service department X be X  
Let the total cost of service department Y be Y

Therefore:

$$X = 86,000 + 0.10 y \text{----- Equation (i)}$$

$$Y = 44,000 + 0.15 x \text{----- Equation (ii)}$$

Substituting Equation (i) into (ii), we get

$$Y = 44,000 + 0.15 (86,000 + 0.10Y)$$

$$Y = 44,000 + 12,900 + 0.015 Y$$

$$0.985Y = 56,900$$

$$Y = \text{Sh } 57,767$$

$$X = 86,000 + 0.10Y = 86,000 + 0.10 (57,766)$$

$$= 86,000 + 5,777$$

$$= \text{Sh } 91,777$$

b)

Production Department

	<u>A</u>	<u>B</u>	<u>C</u>
Overhead costs:	275,685	224,863	269,452
Budgeted Direct Labour Hours:	1,000	2,500	4,000
Overhead Absorption Rate			
= $\frac{\text{Budgeted Overheads}}{\text{Budgeted Labour Hours}}$	= Shs $\frac{275,685}{1,000 \text{ hrs}}$	= Shs $\frac{224,863}{2,500 \text{ hrs}}$	= Shs $\frac{269,452}{4,000 \text{ hrs}}$
	= Shs 275.70/hr	= Shs 90/hr	= Shs 67.40/hr

### QUESTION FIVE

Material Mix Variance = (Standard Price of Standard Mix – Standard Price of Actual Mix)

But Standard Price of Standard Mix =  $\frac{\text{Quantity Mixed}}{\text{Quantity per Mix}} \times \text{Standard Cost of Mix}$

$$= \frac{199,000}{5} \times 275 = \text{Shs } 10,945,000$$

Standard Price of Actual Mix: A: 78,000 X 25 = 1,950,000  
B: 121,000 x 75 = 9,075,000 Shs 11,025,000

Material Mix Variance = SH 10,945,000 – Shs 11,025,000 = Shs 80,000 (A)

Material Yield Variance = Standard Cost of Mix ( Standard Yield – Actual Yield)

$$= 275 \left( \frac{199,000}{5} - 40,000 \right) = \text{Shs } 55,000 \text{ F}$$

therefore Material Usage Variance = Material Mix Variance + Material Yield Variance

$$= 80,000 (A) + 55,000 (F) = \text{Shs } 25,000 \text{ A}$$

ii) Variable Overhead Absorption Rate =  $\frac{\text{Sh } 80}{4 \text{ hrs}} = \text{Shs } 20/\text{hr} = \text{V.O.A.R}$

Fixed Overhead Absorption Rate =  $\frac{\text{Sh } 25}{4 \text{ hrs}} = 6.25/\text{hr}$

$$\begin{aligned}
 &\text{Variable Overhead Expenditure Variance} \\
 &= \text{Actual Variable Overheads Incurred} - \text{Actual Hours} \times \text{V.O.A.R} \\
 &= \text{Shs } 3,000,000 - (156,000 \times 20) \\
 &= \text{Shs } 3,000,000 - 3,120,000 \\
 &= 120,000 \text{ Favourable}
 \end{aligned}$$

$$\begin{aligned}
 &\text{Variable Overhead Efficiency Variance} \\
 &= (\text{Actual Hours} \times \text{V.O.A.R}) - (\text{Standard Hours} \times \text{V.O.A.R}) \\
 &= 3,120,000 - (40,000 \times 4 \times 20) \\
 &= 3,120,000 - 3,200,000 \\
 &= \underline{80,000} \text{ Favourable}
 \end{aligned}$$

$$\begin{aligned}
 \text{NB: Variable Overhead Cost Variance} &= \text{Standard Variable Overhead} - \text{Actual Variable Overhead} \\
 &= 3,200,000 - 3,000,000 \\
 &= \text{Shs } \underline{200,000} \\
 &= \text{Variable Overhead Expenditure Variance} + \text{Variable Overhead Efficiency Variance}
 \end{aligned}$$

Tonga Ltd  
Standard Cost Card

Output Level:	40,000 Units
Cost Item:	Shs
Direct Material: A: 40,000 x 2 x 25:	2,000,000
B: 40,000 x 3 x 75:	<u>9,000,000</u>
Total Material Cost	11,000,000
Direct Labour: (4 x 30 x 40,000)	<u>4,800,000</u>
PRIME COST	15,800,000
Variable Overheads: 20 x 4 x 40,000:	<u>3,200,000</u>
	19,000,000
Fixed Overheads: 4 x 6.25 x 40,000	<u>1,000,000</u>
Total Production Cost	<u>20,000,000</u>

## SECTION II

### QUESTION SIX

Factors to consider when designing a wage incentive scheme:

- (i) **Reward workers individually:** Each person's output and working time should be determined separately and the individual rewarded for his work.
- (ii) **Bonus payment:** Should be as soon as the work is done. This has a motivating effect on the individual.
- (iii) **Ease of administration:** The bonus system or wage incentive scheme should be easy to understand and operate.
- (iv) **Improvement of efficiency:** The scheme should improve the workers' working efficiency by reducing waste and absenteeism.
- (v) **Cost effectiveness:** Its benefits to the organization should be more than its benefits.
- (vi) **Achievable:** The set output levels and time limits should be achievable with reasonable efforts, else the wage incentive will be useless.

- (vii) Equitable: The wage incentive should reward the employees reasonably for their extra efforts.
- (viii) Flexibility: It should be flexible to allow for changes to be made when need arises.
- (ix) **Compatibility: It must fit within the organization's personnel policy framework as well as the organizational procedures.**
- (x) Reliable: It must be able to give consistently valid, accurate and timely results of the workers' efforts.

## QUESTION SEVEN

(a)

**Budgetary Control:** refers to the process of preparing budgets as tools of communicating the expected organizational performance within a specified time period, then using them to evaluate performance. Corrective measures are taken on significant positive or negative variances of actual performance from budgeted performance.

**Advantages of a Budgetary Control System:**

**Co-ordination:** The activities of the whole organization can only be ran smoothly if they are planned for in advance. Budgetary control enables the relationships between organizational activities to be determined in advance and therefore their smooth implementation (co-ordination) made possible.

**Clarification of Authority and Responsibility:** Budgets clarify where the authority and responsibility of performance of each activity lies in the organization.

**Communication:** Budgetary control enables the effective and efficient communication (both horizontal and identical) to occur within the organization between managers and their employees.

**Control:** Budgets acts as yardsticks against which the actual performance is compare so as to determine whether there is positive or negative deviation or whether the actual performance is satisfactory.

**Motivation:** Budgets form a sound basis of motivating employees. Budgeting and budgetary control calls for genuine participation of workers and their managers, which has a motivating effect.

**Compromise:** In budgeting, managers compromise their individual departments' goals so as to achieve the overall organizational goals, thus avoiding instances of sub optimality.

**Asset utilization maximization:** Budgeting enables a company to foresee deficiencies and excesses of assets in advances thus enabling the managers to avoid idle capacities and shortages. A company can only make full use of its available assets if it has a budgetary control system in place.

a) **Limitations of budgets in management of business firms:**

**Exerting undue pressure:** Unrealistic goals may be set in budgets especially where workers are not adequately involved in their preparation. This causes antagonism and undue pressure as staff members strive to meet the set targets.

**Too much reliance:** Managers may see the budgets as the end rather than the means to an end. This would lead to too much reliance on budgets as a substitute for good management.

Poor variance Analysis: This would end up frustrating the workers, sometimes rewarding those who don't deserve, and punishing the wrong persons. Late corrective measures may cost the company a lot!

Past orientation: Budgetary control is a terminal exercise thus any variances and investigations thereafter may be completely useless for current and future operations.

Rigidity: Fixed budgets are not appropriate for business firms as their environments are dynamic. Instead, a flexible budgeting approach needs to be adopted.

Poor Communication: However smartly drafted, budgets will be useless if not effectively communicated to those who will actually implement them.

## JUNE 2009

## QUESTION ONE

(a) Reasons why construction companies find it prudent to declare profits on uncompleted Contracts:

- Contract jobs take long durations before they are finished. It would only be just and fair to report the profit that has accrued on the work done. Investors also need to be rewarded periodically on their investment which necessitates the periodic recognition of accrued profits.
- International Accounting Standard recommends that contracts profits can be recognized using the percentage of completion method if the contract has been substantially completed.
- It would be an over-extension of prudence to wait until the contract work e.g. for 15 years, is complete to recognize any profits!

(b) (i)

Pendo Construction Company  
Contract Account (Shs'000)

Balance b/f:			
Cost of work done:	158,200	Materials transferred out	15,000
Materials on site:	4,500	Materials sold	19.8
Plant	150,000	Plant c/d @ 87.5% of (15,000 + 120,000)	236,250
Materials issued from stores	14,600	Materials c/d	51,000
Materials from suppliers	128,400	Costs of work done c/d	485,980.20
Plant purchased	120,000		
Sub-contractors fees	18,450		
Consultancy fees	28,000		
Inspection fees	500		
Salaries and wages	161,550		
Head office expenses	1,200		
Direct expenses	<u>2,600</u>		
	<u>788,250</u>		<u>788,250</u>
Cost of work done b/d	485,980.20	Value of work certified	820,000
Contract profit	<u>376,019.80</u>	Cost of work not certified c/d	<u>42,000</u>
	<u>862,000</u>		<u>702,000</u>
Balances b/d:			
Plant:	236,250		
Materials:	51,000		
Cost of work not certified	42,000		

NB: Work Certified Value = 660,000 + 160,000 = Shs 820,000

iii) Valuation of Work in Progress:

	Shs „000“
Costs incurred to 31 <sup>st</sup> December 2000:	485,980.20
Add: Contract Profit Realized:	<u>376,019.80</u>
Less: Value of work Certified Paid for:	862,000
Value of work in Process	<u>(580,000)</u>
	<u>282,000</u>

OR:

Cost of work not certified	42,000
Add money retained: (820,000 – 580,000)	<u>240,000</u>
Value of work in Process	<u>282,000</u>

iv) Mara Paradise Limited (Contractee)

Contract a/c:	820,000	Retention a/c:	
		(10% x 820,000)	82,000
		Cash a/c	580,000
		Bal c/d (debtor)	<u>158,000</u>
	<u>820,000</u>		<u>820,000</u>
Bal b/d	158,000		

## QUESTION TWO

Nyundo Limited

a) Material usage Variance = Standard Price (Standard Quantity – Actual Quantity)

Actual Quantity of Raw Material used is computed as follows:

	Cost (Shs)	Unit cost	Units
Opening Stock:	12,000	1.50 (i)	8,000
Purchases	42,000	3.50	<u>12,000</u>
	<u>54,000</u>		<u>20,000</u>
Less closing stock	(6,000)	2.50 (ii)	(2,400)
Raw material used	48,000		17,600

Opening stocks assumed valued at standard price of Shs 3/2 kg = Shs 1.5

Closing stocks assumed an average of both opening stock and purchases  $\frac{(1.50 + 3.50)}{2}$  = Shs 2.50

Standard Quantity = Quantity expected to be used for the actual output.

Quantity produced is computed as follows:

	Value (Shs)	Unit cost	Units
Opening Stock:	36,000	10	3,600
Sales	<u>100,000</u>	10	<u>10,000</u>
	136,000		136,000
Less closing stock	(42,500)	10	(4,250)
Production	<u>93,500</u>		<u>9,350</u>

NB: Units Cost at Standard = Sh 6 + Sh 3 + Sh 1 = Sh 10

9,350 units of production are expected to use: 2 kg x 9,350 = 18,700 kgs of raw material

∴ Material usage Variance = 1.50 (18,700 – 17,600)  
= Sh 1,650 (F)

b) Labour rate variance = Actual Hours (Standard Rate – Actual Rate)  
= 8,000 (4 – 3.75)



$$= \text{Sh } 2,000 \text{ (F)}$$

$$\begin{aligned} \text{Labour efficiency variance} &= \text{Standard Rate (Standard Hours – Actual Hours)} \\ &= 4 (9,350 \times 0.75) - 8,000 \\ &= \text{Sh } 3,950 \text{ (F)} \end{aligned}$$

$$\text{Variable Overhead Expenditure Variance} = \frac{\text{Actual Variable} - (\text{Actual hours} \times \text{V.O.A.R})}{\text{Overheads}}$$

$$\begin{aligned} \text{Where V.O.A.R} &= \text{Variable Overhead Absorption Rate} \\ &= 12,000 - (8,000 \times 1/0.75) = \text{Sh } 1,333 \text{ (A)} \end{aligned}$$

E) Variable Overheads Efficiency Variance

$$= \text{V.O.A.R (Actual labour hours – Standard labour hours)}$$

$$= 1 (8,000 - \frac{9,350}{0.75}) = \text{Shs } 4,467 \text{ (F)}$$

Possible causes of:

Favourable Material Usage Variance:

Good quality of labour  
High quality of material  
Optimum utilization of materials with little or no wastage

Favourable labour rate variance:

Employment of lower cost labour  
Overestimated labour rate  
Reducing prices of labour in the market

Favourable labour efficiency variance

High quality of labour  
Motivated labour force  
Underestimated standard output

Adverse variable overhead expenditure variance:

Underestimated overheads absorption rate  
Lower output level than expected  
Increase in overheads during the period

Favourable variable overhead efficiency variance

Less hours taken to produce units  
Increased efficiency in the output process

**QUESTION THREE**

(a) (i)

Bando Limited

Annual Cost for using own transport:

	Shs
Depreciate: $\frac{(1,500,000-300,000)}{5}$	240,000
Insurance	145,000
Road licence	6,000
Repairs and maintenance	90,000
Drivers salary: 25,000 x 12	300,000
Tyres and tubes	24,000
TLB Licence	2,500
Petrol Sh 5 x 15,600 km	78,000
Inspection fee	<u>2,000</u>
	<u>887,500</u>

$$\text{Cost per Kilometer} = \frac{\text{Sh } 887,500}{15,600} = 56.89$$

B) Hired Transport: Cost =

$$\begin{aligned} \text{Annual hire charges} &= 40,000 \times 12 = \text{Shs } 480,000 \\ \text{Drivers Allowances} &= 10,000 \times 12 = \text{Shs } 120,000 \\ &\underline{600,000} \end{aligned}$$

$$\text{Cost per kilometre} = \frac{\text{Sh } 600,000}{15,600} = \text{Shs } 38.46$$

- (b) The difference between the two options is significant (Shs 18.43). It is much cheaper to use the hired transport. However, we need to consider:

Availability of cash: to purchase the new vehicle and maintain it. Convenience to the company.

Likely changes in the prices of fuel, labour, licenses, tyres etc. Reliability of the transport selected.

Hidden costs.

Effect on staff morale to work.

**QUESTION FOUR****Process 1 a/c**

	Units	Unit cost	Shs		Units	Unit cost	Shs
Direct material	40,000	2.50	100,000	Process 2	35,000	5.56	194,444
Direct Labour	-	-	60,000	Normal Loss	4,000	2	8,000
Overheads	-	-	<u>48,000</u>	Abnormal Loss	<u>1,000</u>	5.56	<u>5,556</u>
	<u>40,000</u>		<u>208,000</u>		<u>40,000</u>		<u>208,000</u>

Valuation of Good Output and Abnormal Loss

$$= \text{Shs } \frac{(208,000-8,000)}{(35,000 + 1,000)} = \text{Shs } 5.56$$

Abnormal Loss A/C						
Units	Unit cost	Shs		Units	Unit cost	Shs
1,000	5.56	5,556	Bank	1,000	2	2,200
			P & L a/c	-	-	3,556
		<u>5,556</u>				<u>5,556</u>

Process 1 Output of Product				
	X	Y	Z	Total
Units (Kg)	10,000	16,000	9,000	35,000
Sales (Shs)	200,000	240,000	144,000	584,000
Costs of Processing				
Process 1: Joint costs				(194,444)
Process 2: Joint Costs (92,000 + 118,000)				(210,000)
Joint Costs Apportioned using sales:	<u>(138,508)</u>	<u>(166,210)</u>	<u>(99,726)</u>	<u>(404,444)</u>
Profits	<u>61,492</u>	<u>73,790</u>	<u>44,274</u>	<u>179,556</u>

The physical units methods apportions the joint costs using the physical quantity of output so that products with high physical output quantity end up getting higher proportions of joint costs. The sales value method apportions the joint costs using the sales value of output so that the product with the higher sales value receives a higher proportion of joint costs.

### QUESTION FIVE

Njoto Limited

Product:	Coolo		Besto		Zedo	
	Shs.	Shs.	Shs.	Shs.	Shs.	Shs.
Selling Price		60		48		59
<b>Less: variable cost per unit</b>						
Direct material	15		12		14	
Direct labour	25		20		23	
Variable overheads	5		30		6	
		<u>(45)</u>		<u>(35)</u>		<u>(43)</u>
Contribution per unit		<u>15</u>		<u>13</u>		<u>16</u>
Time required (minutes)		3		15		20
Contribution per minute (Shs.)		0.50		0.289		0.80

a) Ranking the products in priority of production based on machine hours: Zedo, Coolo then Besto. (Most profitable to least profitable).

b) Most Profitable Product Mix:

Machine time available = 30,000 x 60	= 1,800,000
Produce Zedo: 48,000 units @ 20 minutes:	<u>(960,000)</u>
	840,000
Produce Coolo: 20,000 units @ 30 minutes:	<u>(600,000)</u>
	240,000
Produce Besto: 240,000 units = 5,333 1/3 units	<u>(240,000)</u>
	-
	=====

Therefore the most profitable product Mix is:

Zedo: 48,000 units

Coolo:	20,000 units
Besto:	5,333 1/3 units

c) Resulting Net Profit:

Contribution by: Zedo:	48,000 X 16	768,000
Coolo:	20,000 x 15	300,000
Besto:	5,333 1/3 x 13	<u>69,334</u>
		1,137,334
Less fixed costs:	Zedo: 48,000 x 8 = 384,000	
	Coolo: 20,000 x 7 = 140,000	
	Besto: 25,000 x 5 = <u>125,000</u>	
		<u>(649,000)</u>
NET PROFIT:		<u><u>488,334</u></u>

## SECTION II

### QUESTION SIX

b) Duties of a cost accountant in an organization.

**Cost Estimation:** Costs need to be estimated to enable the management to plan ahead. Estimated costs are also used to evaluate individuals and organizational performance. Prices are also set using estimated costs.

**Cost Control:** The cost accountant devices and advises managers on various ways of minimizing operation costs so as to maximize quality, after putting into consideration other relevant factors such as quality considerations.

**Provides management with information for decision-making:** The quality of decisions made by the management depends largely on the quality of information provided by the cost accountant. He advises management on the most profitable ways of doing things. Techniques such as break-even analysis, variance analysis, marginal costing and incremental analysis are critical in this area.

b)

**Relevant costs:** are the costs that change when a particular option or decision is selected. They are incremental and future costs of every decision made.

**Irrelevant costs:** are those costs that will not change when a particular option or decision is selected. They are non-incremental and past in nature e.g. fixed cost and sunk costs.

**Cost Centre:** any particular part of an enterprise to which costs may be ascertained and related for cost control purposes. This concept is especially useful in responsibility accounting whereby the costs incurred are attached to responsibility of the manager of a certain cost center.

**Unit Cost:** Refers to the cost of producing one unit of output which could be total cost or marginal cost, made of prime cost and overheads as applicable.

**Cost Unit:** refers to a quantitative unit of output to which costs can be ascertained.

**Semi-fixed and semi-Variable costs:** This refers to mixed costs which bear both aspects of fixed and variable costs. There is a fixed cost as well as a variable cost

per unit consumed. These costs are usually seen in telephone, internet, water, royalties etc and take the form of the following cost equation:

$$Y = a + bx$$

Where Y = total cost

A = fixed cost

B = variable cost per unit

X = output level

Sunk costs: refers to past costs. They are irrelevant costs for decision-making purposes as the management can do nothing about them e.g. rent already paid.

Product cost: refers to the cost of producing a given product. It is made up of direct material, direct labour and overheads.

## QUESTION SEVEN

a)

Assumptions underlying the break-even analysis:

- (i) All costs can be broken down into their fixed and variable components with none remaining in the mixed cost category.
- (ii) Fixed costs remain fixed within the relevant range
- (iii) Selling price per unit is constant
- (iv) The variable cost per unit is also constant
- (v) Output level is the only factor affecting cost level
- (vi) Changes in stock levels are not significant i.e. opening and closing stock levels remain relatively the same. All the units produced are therefore sold.
- (vii) Technology remains the same.
- (viii) The contribution sales ratio remains constant
- (ix) Product mix remains the same.

c) How to analyse marketing cost:

Marketing costs are the costs incurred to increase or maintain the sales level in the market.

**They are also incurred to gain the knowledge of what consumer's need, and their response to the organizations products.** The total marketing costs = fixed marketing costs + variable marketing costs.

Fixed Marketing Costs: they do not increase with increase in the sales level e.g. fixed salaries of sales persons.

Variable Marketing Costs: they increase proportionately with the increase in sales e.g. salespersons sales commissions, the sales manager commissioning delivery costs.

The analysis would serve the following purposes:

Enable us to understand the cost behaviour of marketing costs for cost control purposes. E.g. which costs are fixed and therefore beyond a manager's control and which costs are variable and therefore within a manager's control.

Enable us to undertake an objective performance

evaluation. Useful in planning the marketing costs.

**DECEMBER 2009****QUESTION**

ONE a)

**Basic Standards**

These are standards which are kept unaltered over a long period of time and may be out of date. These are used to show changes in efficiency or performance over a long period of time.

However, the CIMA official terminology describes them as standards „established for use over a long period of time, from which a current standard can be developed.“

**Current Standards**

These are standards based on current working conditions (current wastage, current inefficiencies) etc.

The CIMA official terminology defines a current standard as „a standard established for use over a short period of time, related to the current conditions.

**Ideal Standards**

These are based on perfect operating conditions i.e. no wastage, no spoilage, no inefficiencies, no idle time etc.

Variances from ideal standards are useful for pinpointing areas where a close examination may result in large savings, but they are likely to have an unfavourable motivational impact because reported variances will always be adverse. Employees will often feel that the goals are unattainable and not work so hard.

**Normal Attainable Standards**

These are based on normal operating conditions and consequently some allowance is made for wastage, inefficiencies etc.

Well-set attainable standards provide a useful psychological incentive by giving employees a realistic but challenging target of efficiency.

The CIMA official terminology defines it as “a standard which can be attained if a standard unit of work is carried out efficiently, a machine properly operated or material properly used. The standard represents future performance and objectives which are reasonably attainable.

b) To answer any questioning dealing with variances work out the rates and the cost per unit i.e. work out the standard cost per unit.

**Standard Cost****Cost/ unit (shs)**

Fixed overhead	40 hr week at sh 3,500		14,000
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Fixed overhead	rate per unit	=	$\frac{\text{sh } 14,000}{40}$	=	3,500
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Calculation of fixed overhead cost/unit and rate per hour

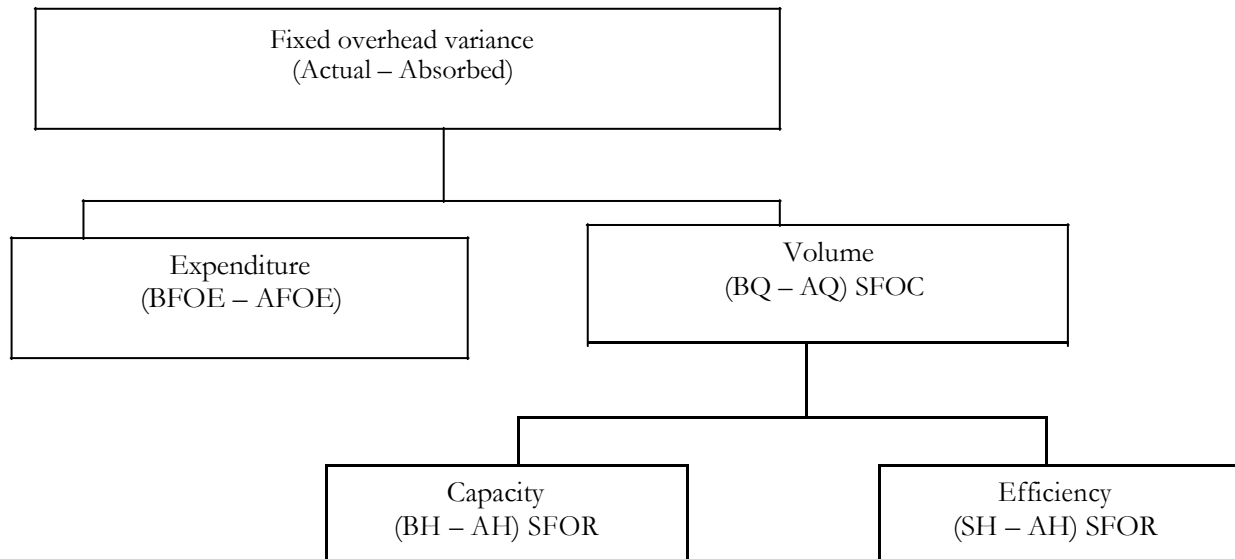
The cost per unit	=	$\frac{\text{sh } 140,000}{14,000 \text{ units}}$	=	sh 10
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In 1 hour	$\frac{14,000 \text{ units}}{40 \text{ hrs}}$	=	350 units are produced
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The rate per hour	=	$\frac{\text{sh } 140,000}{40 \text{ hrs}}$	=	sh 3,500
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Each unit requires  $\frac{40}{14,000}$  hrs.

Therefore the standard cost			Cost/unit (shs)
Fixed overhead	40 hrs at sh 3,500	14,000	10



Expenditure = Budgeted fixed overhead expenditure - Actual fixed overhead expenditure

Volume = Difference in Budgeted quantity and Actual quantity at **Standard cost**

### Capacity and efficiency

Volume variance and expenditure variance explains the over/under absorbed overheads at standard cost i.e. total fixed overhead variance

Volume variance can be explained by capacity variance and efficiency variance.

Capacity = difference between **budgeted hours** and actual hours at **standard fixed overhead rate**

Efficiency is equal to the difference between **standard hours** and actual hours at **standard fixed overhead rate**

- |                                  |   |                   |   |                      |   |                |
|----------------------------------|---|-------------------|---|----------------------|---|----------------|
| a) Expenditure variance          | = | BFOE – AFOE       | = | 140,000 – 150,000    | = | 10,000 Adverse |
| b) Volume variance               | = | (BQ – AQ) SFOC    | = | (14,000 – 12,000) 10 | = | 20,000A        |
| c) Total fixed overhead variance | = | Actual – Absorbed | = | 150,000 – 12,000x10  | = | 30,000A        |

Note C:  $a + b = 30,000A = 10,000a + 20,000A$

Capacity  $= (BH - AH) \text{ SFOR}$   
 $= (40 - 32) 3500 = 28,000A.$

d) Efficiency  $= (SH - AH) \text{ SFOR}$   
 $= (40 \times 12,000 - 32) 3500 = 8000 \text{ favourable}$   
 $(14,000)$

Note:  $d + e = b$   
 $28,000 (A) + 8000F = 20,000 A$

a. Reasons for adverse expenditure overhead variance

- Increase in cost of services used
- Excessive use of services

b. Reasons for adverse volume variance

- Excessive idle time
- Shortage of plant capacity

## QUESTION TWO

### STORES LEDGER CARD (LIFO)

Date	Sales			Purchases					
2001	Units	Price	Cost	Units	Price	Cost	Units	Price	Cost
1.6							4,500	50	225,000
1.6	5000	48	240,000				9,500		465,000
4.6				5,000	48	240,000			
				<u>1,000</u>	50	<u>50,000</u>			
				<u>6,000</u>		<u>290,000</u>	3,500		175,000
									444,500
5.6	5,500	49	269,500				9,000		644,500
7.6	4,000	50	200,000				13,000		
11.6				4,000	50	200,000			
				<u>3,500</u>	49	<u>171,500</u>			273,000
				<u>7,500</u>		<u>371,500</u>	5,500		523,000
12.6	5000	50	250,000				10,500		805,000
13.6	6000	47	282,000				16,500		
18.6				6,000	47	282,000			
				<u>1,000</u>	50	<u>50,000</u>			473,000
				<u>7,000</u>		<u>332,000</u>	9,500		
19.6				4,000	50	200,000			
				2,000	49	98,000			
				<u>2,000</u>	50	<u>100,000</u>			75,000
				<u>8,000</u>		<u>398,000</u>	1,500		372,000
20.6	6,000	49.5	297,000				7,500		124,500
21.6				5,000	49.5	247,500	2,500		474,500
22.6	7,000	50	350,000				9,500		768,500
25.6	6,000	49	294,000				15,500		862,500
26.6	2,000	47	94,000				17,500		839,000
28.6							17,000		
29.6				500	47	23,500			
				1,500	47	70,500			
				6,000	49	294,000			
				<u>6,500</u>	50	<u>325,000</u>			149,500
				<u>14,000</u>		<u>689,500</u>	3,000		



Closing stock valuation

3000 units at sh 149,500.

### QUESTION THREE

#### TINDO LTD TRADING ACCOUNT

		Shs
Sales (WI)		2,984,000.00
Less cost of sales		
Opening stock	225,000.00	
Purchases	<u>2,276,500.00</u>	
	2,501,500.00	
Less closing stock	<u>(149,500.00)</u>	
Cost of Sales		<u>(2,352,000.00)</u>
GROSS PROFIT		632,000.00
Less costs		<u>(450,000.00)</u>
Net Profit		<u><u>182,000.00</u></u>

3. Wastes are

**Inputs that don't become part** of the outputs. The most common example is material that is lost or evaporates or shrinks or is a residue with no economic value. Examples are gases, dust and toxic residues. Sometimes waste disposal is costly: for instance nuclear waste.

Spoilage are:

Unacceptable units of production that are discarded and sold for disposal value. Spoilage may be partially completed or fully completed units.

Spoilage can either be normal or abnormal spoilage.

**Normal spoilage (Normal loss)** is what arises under efficient operating conditions: it is an inherent result of the particular process and thus uncontrollable in the short run.

**Abnormal spoilage (Abnormal loss)** is spoilage that is not expected to arise under efficient operating conditions. It is not an inherent part of the selected production process.

Three possible methods of accounting for spoilage are:

- 1) Ignoring the spoilage when the cost per unit is calculated. Cost per unit based on actual output.
- 2) Assuming that the lost units have a cost and therefore charging the spoilage to the P and L account, whenever they occur i.e. the cost per unit is based on the input units rather than output units.
- 3) It is a compromise system which is based on the view that:
  - a) If some loss is to be expected, it shouldn't be given a cost but
  - b) If there is some loss that shouldn't happen, it ought to give a cost.

(B)

FIFO Method is used in answering the question since percentages of completion have been given.

Under the FIFO method:

Only current costs are used in the calculations of cost/unit

Equivalent units consist of units worked on during the current period only.

The units transferred to department III are made up to opening units (2600) and what was started and completed during the period (8000 units)

## Process A/C

Opening WIP	2,600	6,500	Normal loss	1,300	1,800
Input	13,000	19,500	Abnormal loss	2,200	11,818
Materials		15,900	To Dept III	10,600	54,504
Labour		13,100	Closing WIP	1,500	4,380
Overhead		17,500			
	<u>15,600</u>	<u>72,500</u>		<u>15,600</u>	<u>72,500</u>

Workings:1. Statement of equivalent units

	I	II	Labour	Overheads
Opening WIP	2,600 -	1,040	1,300	1,560
Started	8,000 8,000	8,000	8,000	8,000
Closing WIP	1,500 1,500	450	600	600
Abnormal loss	<u>2,200</u> <u>2,200</u>	<u>2,200</u>	<u>2,200</u>	<u>2,200</u>
EQUIVALENT UNITS	<u>15,600</u> <u>11,700</u>	<u>11,690</u>	<u>12,100</u>	<u>12,360</u>

2. Statement of Cost

	Materials		Labour	Overheads
	I	II		
Costs incurred	19,500	15,900	13,100	17,500
Less scrap value (900 x 2)	<u>(1,800)</u>			
	17,700			
Cost/ equivalent Unit	<u>17,700</u> 11,700	<u>15,900</u> 11,690	<u>13,100</u> 12,100	<u>17,500</u> 12,360
5.3714	=	sh 1.5128	1.3601	1.0826
				1.4159

3. Statement of Evaluation

**Remember to add the cost incurred on opening stock units in the previous period.**

Department III	Units	Shs.
Opening Stock	2600	
Costs from previous period		6,500
Current period costs		
1040 x 1.3601 + 1300 x 1.0826 + 1560 x 1.416		5,031
Started and Completed: 8000 x 5.3714		<u>42,971</u>
		<b>54,502</b>

**Closing work in progress**

$$(1500 \times 1.513) + (450 \times 1.36) + (600 \times 1.0826) + (600 \times 1.416) = 4,380.$$

**QUESTION FOUR**

## Assumption of Break-even analysis

- 1) The behaviour of total costs and total revenues applies to relevant range only.

CVP analysis is appropriate only for decisions taken within the relevant production range. It is incorrect to project cost and revenue figures beyond the relevant range.

Relevant range refers to the output range at which the firm expects to be operating in the future and is equivalent to normal capacity. It represents the output levels which the firm has had experience of operating in the past and for which cost information is available.

- 2) All costs can be divided into fixed and variable elements.

CVP analysis assumes that costs can be accurately analyzed into their fixed and variable elements.

- 3) The analysis either covers a single product or assumes that a given sales mix will be maintained as total volume changes.

CVP analysis assumes that either a single product is sold, or if a range of products is sold that sales will be in accordance with a predetermined sales mix.

- 4) Volume is the only relevant factor affecting costs: all other variables remain constant.

It is assumed that all variables other than volume remain constant throughout the analysis.

i.e changes in other variables such as production efficiency, sales mix price levels and production methods do not have an influence on sales revenue and costs.

- 5) Single product or constant sales mix.

CVP analysis assumes that either a single product is sold or if a range of products are sold those sales will be in accordance with a predetermined sales mix.

- 6) Profits are calculated on variable costing basis i.e. the volume of sales or changes in beginning and ending inventory levels are insignificant in amount.

The analysis assumes that fixed costs incurred during the period are charged as an expense for that period. Therefore variable costing profit calculations are assumed. If absorption costing profit calculations are used; it is necessary to assume production is equal to sales.

- 7) Total costs and total revenue are linear functions of output.

Thee analysis assumes that unit variable cost and selling price are constant.

**(B)**

		Shs. „000“
Sales	30,000 x 0.97	29,100
Less Cost of Sales		
Materials	6,500 x 1.02	6,630

Labour	5,400 x 0.96	5,184	
Production overhead	(7,000 x 1.03)	<u>7,210</u>	
Cost of Sales			(19,024)
			10,076
Less other variable costs (2,600 x 0.95)			<u>(2,470)</u>
CONTRIBUTION			7,606
Less Expenses			
Fixed	1997		
Administration	<u>2100</u>		<u>(4,097)</u>
NET PROFIT			<u><u>3,509</u></u>

$$\text{a) B.E.P (shs) = Fixed Costs} = \frac{4,097,000 \times 29,100,000}{7,606,000}$$

$$\text{a. C/s ratio}$$

$$1. = \text{shs } 15,674,823$$

$$\text{b) Margin of Safety} = \text{Budgeted sales} - \text{Break even sales}$$

$$1. = 29,100,000 - 15,674,823$$

$$2. = \text{shs } 13,425,177$$

c) Sales value at which profit of sh. 4.5m will be achieved.

Use:

$$\text{Profit} = (P - V) X - \text{Fixed costs}$$

when X is sales in units.

$$\text{Profit} = C/S X - \text{Fixed Costs.}$$

when X is sales in shs.  
P – selling price per unit  
V- variable cost per unit  
C/S – contribution sales ratio

$$\text{Profit} = C/s X - \text{Fixed costs.}$$

$$4,500,000 = \frac{7,606}{29100} X - 4,097,000$$

$$X = \text{Shs. } 32,891,493.$$

d) Sales	32,891,493
Less Cost of Sales	<u>24,294,493</u>
CONTRIBUTION	8,597,000
Less Expenses	<u>(4,097,000)</u>
NET PROFIT	<u><u>4,500,000</u></u>

### QUESTION FIVE

The basis for absorbing production overhead largely on management choice and the organization concerned.

a) Direct Labour rate

This basis is appropriate when:

i) There is a direct relationship between overheads and direct labour hours.

- ii) Most of the production process is manual for example in a textile industry if cutting of materials is manual.
- iii) When the rates of pay per hour are similar for different categories (if direct labour cost includes other items not related too production e.g. bonuses.
- iv) Information on the number of direct labour hours associated with each product is readily available.

Percentage of direct materials – used where the value of materials has a significant relationship with the overhead. Use of this basis is restricted to allocating materials management costs.

It is used in the apportionment of stores department overheads.

b) Mutindwa Ltd

Hourly rate for direct labour

$$= \frac{\text{Direct labour cost}}{\text{Direct labour hours}} = \frac{\text{sh } 90,000}{4,500 \text{ hrs}} = \text{shs } 20 \text{ per hour.}$$

$$\begin{aligned} \text{Hourly rate overheads} &= 0 \\ \frac{\text{Overheads}}{\text{Setting up hours}} &= \frac{\text{sh. } 144,000}{5,750} \\ &= \text{sh. } 25.04 \text{ per hour.} \end{aligned}$$

Under the proposed system

$$\begin{aligned} \text{Rate for direct labour} &= \frac{\text{sh } 90,000}{4,500} = \text{sh } 20 \text{ per hour} \\ \text{Rate for setting up labour} &= \frac{\text{sh } 30,000}{1,250} = \text{sh } 24 \text{ per hour} \\ \text{Rate for overheads} &= \frac{\text{sh } 144,000 - 30,000}{4,500} \\ &= \text{sh } 25.33 \text{ per hour} \end{aligned}$$

c) Cost statement for the three jobs

	A	B	C	Total
Direct Material	36,320	4,200	25,480	66,000
Direct labour @ sh 20/hr	<u>48,000</u>	<u>6,000</u>	<u>36,000</u>	<u>90,000</u>
PRIME COST	84,320	10,200	61,480	156,000
Overheads @ sh 25.04/hr	<u>69,496</u>	<u>13,774</u>	<u>60,730</u>	<u>144,000</u>
Total Job Cost	<u>153,816</u>	<u>23,974</u>	<u>122,210</u>	<u>300,000</u>

## SECTION II

### QUESTION SIX

6. Integrated Accounting System

Are a system in which a set of accounting records which provides financial and cost accounts using a common input of data for all accounting purposes.

### Interlocking Accounting System

Are systems in which the cost accounts are distinct from the financial account: both sets are kept in agreement or are readily reconcilable.

- c) Items of expenditure that are unique to the two systems of accounting in (a) above are:
  - i. Appropriations of profits not dealt within the costing systems e.g. corporations tax, dividends paid and proposed etc.
  - ii. Expenditure of a purely financial nature (i.e. nothing to do with manufacturing e.g. losses on sale of fixed assets, interest on bank loans, bank charges etc)
- d) Three bases of cost classification are:
  - i) Costs for stock valuation
  - ii) Costs for decision making
  - iii) Costs for control

### QUESTION SEVEN

#### i. Relevant range

Is the band of activity (volume) in which a specific form of budgeted sales and cost (expenses) relationships will be valid.

#### Relevant costs

Are expected future costs that will differ under alternatives

#### ii. Controllable

Is a cost which is reasonably subject to regulation by the manager with whose responsibility that cost is being identified. Examples are variable costs.

#### Non-controllable costs

Are those costs which cannot be adjusted without the long term objectives of the firm. They are costs which cannot be changed by management within a given time span. Fixed costs are non-controllable within a certain range.

#### iii. Opportunity Cost

Is a cost which measures the benefit forgone lost or sacrificed when the choice of one course of action requires that an alternative course of action be given up.

#### Incremental (differential)

Are the additional costs which arise from the production of a group of additional units.

#### iv. Perpetual Inventory System

Is a stock recording system whereby the balance is shown on the record for a stock item after every movement either receipt or issue. The balances on the stock records represent the stock on hand.

#### Continuous Inventory Systems

Is a system e.g. stock checking whereby a proportion of stock items are checked each day. Sufficient items are checked each day so that in the course of a year all items are checked at least once.

#### v. Profit Centre

Area of responsibility accountable for the costs and revenues.

#### Cost Centre

Any area of activity, a department, a location or an item of equipment in relation to which costs may be ascertained for the purpose of cost control and product costing.

**JUNE 2010****QUESTION ONE**

(a)

Selling price per unit

From past data.

Units sold = 9,000 units

Fixed cost = 20M

Variable cost = 5,000 per unit

Let selling price be X

Fixed cost + Variable Cost + Profit = Sales Value

$$20M + 5,000 (9,000) - 2m = 9,000 (X)$$

$$X = 7,000$$

**PROPOSAL A**

Profit for local market

Sales	12,000 x 7,000	84,000,000
Variable cost	5,500 x 2,000	<u>66,000,000</u>
Contribution		18,000,000
Fixed cost		<u>20,000,000</u>
Loss		2,000,000

Neighbouring market

$$\begin{aligned} \text{Sales Value} &= 2,000,000 + 4,000,000 + 6,000 (x) \\ 7,000(x) &= 2,000,000 + 4,000,000 + 6,000 (x) \\ 1,000x &= 6,000,000 \\ X &= 6,000 \\ \text{Total units need} &= 6,000 + 12,000 \\ &= 18,000 \text{ units.} \end{aligned}$$

**PROPOSAL B**

Local market

Sales	12,000 x 7,000	84,000,000
Variable cost	12,000 x 5,000	<u>60,000,000</u>
		24,000,000
Fixed cost	(2M + 20M)	<u>22,000,000</u>
		<u>2,000,000</u>

Neighbouring

$$\begin{aligned}
 \text{Sales Value} &= 4M - 2M + \text{Variable Cost} \\
 7,000 (x) &= 2M + 5,500 (x) \\
 X &= \frac{2M}{1.5} = 1,334 \\
 \text{Total Sales} &= 12,000 + 1,334 = 1,334 \text{ units}
 \end{aligned}$$

**PROPOSAL C**

## Local Market

Sales	6,500 x 12,000	= 78,000,000
Variable cost	12,000 x 5,000	= <u>60,000,000</u>
		18,000,000
Fixed Cost		<u>20,000,000</u>
Loss		<u><u>(2,000,000)</u></u>

## Neighbouring Market

$$\begin{aligned}
 \text{Sales Value} &= 4M + 2M + 5,500(x) \\
 5,500(x) &= 6M + 5,500x \\
 X &= 6,000 \\
 \text{Total units} &= 1,200 + 6,000 \\
 &= 18,000
 \end{aligned}$$

## Assumption

All the 12,000 units are absorbed in the local market before going to the neighbouring market.

(b)

## Local market

Sales	9,000 x 7,000	= 63,000,000
Variable cost	4,000 x 9,000	= <u>36,000,000</u>
Contribution		= 27,000,000

$$\begin{aligned}
 \text{Fixed Cost} &= \text{Contribution} - \text{Target Profit} \\
 &= 27,000,000 - 4,000,000 \\
 &= 23,000,000
 \end{aligned}$$

$$\begin{aligned}
 \text{Maximum increase in fixed cost} &= 23,000,000 - 20,000,000 \\
 &= 3,000,000
 \end{aligned}$$

$$\text{Percentage} = \frac{23,000,000 - 20,000,000}{20,000,000} \times 100 = 15\%$$

## (c) Benefits of Break-even Analysis

Help management understand the component of variable costs, fixed cost, and their proportion in the total costs.



To help management analyse the cost incurred and the budgeted cost with a view of ascertaining the variances and which corrective action can be taken i.e. performance evaluation and control purposes.

It enables us to understand the cost behaviour with a predefined relevance range.

Is useful for planning purposes i.e. profit planning. Once the budgeted profit is ascertained, one can then calculate the expected variable costs and fixed costs for the whole organization and its departments.

Decision making aid: Breakeven analysis is useful in deciding whether to make or buy a product, and in allocating scarce resources or constraint factors to production.

## QUESTION TWO

a)		<b>Shs.</b>
Selling price		7,200
Variable costs		
Material (1 x 2,800)	2,800	
Labour (2 x 360)	720	<u>3,520</u>
Contribution per unit		<u>3,680</u>

Contribution per Sh of labour  $\frac{\text{Sh } 3,680}{720} = 5.11$

Contribution per labour hour  $= \frac{3,680}{2} = 1,840$

b) Make or buy

Buying from outside = Sh 3,600

		<b>Shs.</b>
Making	Labour (12 x 360)	4,320
	Material	<u>14,400</u>
		<u>18,720</u>

Should make since the additional cost is Sh 18,720 which is lower than the purchase price of Sh 36,000.

### Hint:

Fixed costs are not considered in making the decision since they will have to be incurred whether they make or buy.

(c)

Value of offer		648,000
Variable cost	136,800	
Material	7,200	
Labour (20 x 360)	<u>18,720</u>	<u>162,720</u>
Special component		<u>485,280</u>
Contribution		

Should accept since the contribution will increase by Sh 485,280.

(d)

(i). Fixed cost

Not relevant since they will have to be incurred with or without:

Making or buying the special component

Accepting or rejecting the offer

(ii). Total Wage bill

It is a variable asset hence relevant in decision making – it affects both.

**QUESTION THREE**

(a)

Asante Sana Ltd

Income Statement (Absorption /Full Costing Method)

For the Period I

	Shs.	Shs.
Sales		2,550,000
<u>Less Cost of Sales</u>		
Opening Stock	80,000	
<u>Add Production Costs:</u>		
Variable Manufacturing Costs:	720,000	
Fixed Manufacturing Costs:	<u>560,000</u>	
	1,360,000	
Less Closing Stock:		
Cost of Sales:		<u>(1,360,000)</u>
GROSS PROFIT		1,190,000
Expenses		
Under absorbed Fixed Manufacturing Costs (560,000 – 640,000)	80,000	
Variable Selling and Administration Costs:	136,000	
Fixed Selling and Administration Costs:	<u>540,000</u>	
NET PROFIT		<u>434,000</u>

Asante Sana Ltd  
Income Statement (Absorption /Full Costing Method)  
For the Period II

	Shs.	Shs.
Sales		2,700,000
<u>Less Cost of Sales</u>		
Opening Stock	-	
<u>Add: Production Costs:</u>		
Variable Manufacturing Costs:	828,000	
Fixed Manufacturing Costs:	<u>644,000</u>	
	1,472,000	
Less Closing Stock:	<u>32,000</u>	
Cost of Sales:		<u>(1,440,000)</u>
GROSS PROFIT		1,260,000
<u>Add: Over absorbed Overheads:</u>		
Fixed Manufacturing Costs: (644,000 – 630,000)	14,000	
Variable Selling and Administration Costs (147,200 – 144,000)	3,200	
Fixed Selling and Administration Costs (552,000 – 540,000)	<u>12,000</u>	<u>29,200</u>
		1,289,200
<u>Expenses:</u>		
Variable Selling and Administration Costs:	147,200	
Fixed Selling and Administration Costs:	<u>552,000</u>	<u>(699,200)</u>
NET PROFIT:		<u>590,000</u>

b)

Asante Sana Limited  
Income Statement (Marginal Costing Method)  
For the Period:

	I		II	
	Shs.	Shs.	Shs.	Shs.
Sales		2,550,000		2,700,000
<u>Less Cost of Sales</u>				
Opening Stock	45,000		-	
<u>Add: Production Costs:</u>				
Variable Manufacturing Costs:	<u>720,000</u>		<u>828,000</u>	
	765,000		828,000	
Less Closing Stock:	<u>-</u>		<u>(18,000)</u>	
Cost of Sales:		<u>(765,000)</u>		<u>(810,000)</u>
GROSS CONTRIBUTION:		1,785,000		1,890,000
Less Variable Selling and Administration Costs:		<u>(136,000)</u>		<u>(144,000)</u>
NET CONTRIBUTION:		1,649,000		1,746,000
Add:				
Over absorbed Overheads:				
Fixed Manufacturing Overheads:		-	14,000	
Fixed Selling and Administration Costs:		<u>-</u>	<u>12,000</u>	<u>26,000</u>
		1,649,000		1,772,000
Period Expenses:				
Fixed Manufacturing Costs:	560,000		644,000	
Under absorbed Fixed Manufacturing costs:	<u>80,000</u>			
	640,000			
Fixed Selling & administration Costs:	480,000		552,000	
Add Under absorbed Overheads:	<u>60,000</u>	<u>540,000</u>	<u>(1,180,000)</u>	<u>(1,196,000)</u>
NET PROFIT:		<u>469,000</u>		<u>576,000</u>

**(c) Reconciliation of Profits for Period I**

	Shs
Net Profit as per Absorption Costing	434,000
Add: Over-valuation of opening stocks as per Absorption costing: (80,000 – 45,000)	<u>35,000</u>
Net Profit as per Marginal Costing:	<u>469,000</u>

**Reconciliation of Profits for Period II**

	Shs
Net Profit as per Absorption Costing:	590,000
Less: Over-valuation of closing stocks as per Absorption Costing: (32,000 – 18,000)	<u>(14,000)</u>
Net Profit as per Marginal Costing:	<u>576,000</u>

**Workings:**

	Absorption Costing:	Marginal Costing:
Standard Cost Per unit of Stock:		
Variable Manufacturing Costs	45	45
Fixed Manufacturing costs	<u>35</u>	<u>-</u>
	<u>80</u>	<u>45</u>
Units of Opening Stock:	= Sales – Production = 17,000 – 16,000 = 1,000	
		B/F = 0
Value of Opening Stocks:	= 100 x 80 = <u>80,000</u>	
Units of Closing Stocks	Production – sales - = 18,400 – 18,000 = <u>400</u>	
Value of Closing Stocks:	- = 400 x 45 = <u>18,000</u>	

**b) Arguments in favour of Absorption (Full) Costing:**

1. Fixed Manufacturing Costs are not divorced from production. They are very significant especially in the modern automated industry. Thus, they should be included in the cost of production and consequently in stock valuation.
2. Where production is constant but sales fluctuate (which is what happens in real business life), the net profit does not fluctuate as significantly as in marginal costing.
3. Where stock building or piling is necessary part of operations, (for example, in timber seasoning) inclusion of fixed costs in stock valuation is necessary and desirable for statements to show a true and fair view. Otherwise, a series of fictitious losses will be shown in earlier periods, only to be offset eventually by excessive profits when the goods are sold.
4. Calculating the total costs of producing a good makes a firm to set a selling price that is NOT below total cost. Calculating marginal cost and contribution may make a firm to set prices that are below total cost while still producing some contribution.
5. Matching concepts advocates for absorption costing: Costs and revenues must be matched in the period when revenue arises, and not when costs are incurred. SSAP (Stocks and Work in Progress) advocates for the matching concept and recommends that stock valuations must include production overheads incurred in the normal course of business even if not time related.

**Arguments in favour of Marginal Costing:**

- Simple to understand and operate.

- No apportionment of overhead costs (which are frequently based on arbitrary basis) to products and departments are necessary.
- Where sales are constant and production fluctuates, marginal costing shows a constant net profit while absorption costing net profit would be varying.
- Over or under absorption of overheads (due to levels of activities being different from the budgeted) is almost entirely avoided.
- Fixed costs are incurred on a time basis e.g. rent, rates, salaries, and they should therefore be written off or expensed in the period in which they are incurred.
- Accounts prepared using marginal costing more nearly approach the actual cashflow position.

#### QUESTION FOUR

##### Lamu Limited

##### Original (State) Budgeted Income Statements

		Shs.
Sales (208,000 x 12)		2,496,000
Less variable cost		
Direct material (2.5 x 208,000)	520,000	
Direct labour (200 x 2,080)	416,000	
Variable factory overheads (275 x 2,080)	572,000	
Selling cost (0.8 x 208,000)	<u>166,400</u>	<u>(1,674,400)</u>
Net contribution		821,600
Less fixed cost		<u>(500,000)</u>
Net profit		<u>321,600</u>

Notes:

Output = 100 x 52 x 40 = 208,000 Units

##### Actual Income Statement

	Shs.	Shs.
Sales (12.75 x 40 x 52 x 98%)		2,598,960
Less variable cost		
Direct material (95% x 2.5 x 203,840)	484,120	
Direct labour (200 x 52 x 40)	416,000	
Variable factory overheads	550,000	
Selling cost (0.8 x 203,840)	<u>163,072</u>	<u>(1,613,192)</u>
Net contribution		985,768
Less fixed costs		<u>(480,000)</u>
Net profit		<u>505,768</u>

##### Notes:

Output	=	98 x 40 x 52	=	203,840
Direct material	=	95% [203,840 x 2.5]		
Hours	=	40 x 52	=	2,080

##### Flexible Budget

	Shs	Shs
Sales (203,840 x 12)		2,446,080
Variable cost		
Direct material (2.5 x 203,840)	509,600	
Direct labour (200 x 2,080)	416,000	
Variable factory overheads (275 X 40 x 52)	572,000	
Selling cost (variable) 0.8 x 203,840	<u>163,072</u>	<u>1,660,672</u>
Net contribution		785,408
Less fixed costs		<u>(500,000)</u>
Net profit		<u>285,408</u>

Hint:

For Flexible budget we base it on the actual output but not the standard (budgeted) output.

### QUESTION FIVE

(a) Advantages of Standard Costing:

- (i). Planning: is made easier by use of already set price and cost standards.
- (ii). Managerial performance Evaluation is made easier and comprehensive by use of pre-defined standards of cost and revenue.
- (iii). For control purposes, standard costing enables variances to be detected where they occur and corrective measures taken before it is too late.
- (iv). It can be used for prediction purposes whereby future costs and revenues can be projected.
- (v). It makes inventory valuations much easier.
- (vi). When proper standards are set, then they provide motivation, as they are targets and yardsticks for performance measurement.
- (vii). Decision-making: Standard costing can be used to decide on what level of activity is achievable within a given period of time given a certain resource constrain.

(b)

- (i). Material Price Variance = Actual Usage in the Actual mix at the Actual price - Actual usage in the actual mix at the standard price

Actual Usage in the Actual Mix at the Actual Price

$$= 175,000 + 152,000 = 327,000$$

Actual Usage in the Actual Mix at the Standard Price:

AB: 1,400 x 120	=	168,000	
QP: 1,600 x 60	=	<u>160,000</u>	
			<u>328,000</u>
			<u>1,000 (F)</u>

### ALTERNATIVELY

Material Price Variance = (Actual Price – Standard Price) Actual Quantity

AB: (125 – 120) 1,400 = 7,000(A)

QP: 95 – 100) 1,600 = 8,000 (F)  
1,000 (F)

NB: Price per KG: AB = 175,000 ÷ 1,400 = 125

QP = 152,000 ÷ 1,600 = 95

- (ii). Material Usage variance = Material Mix Variance + Material Yield Variance  
 = 4,000 (A) + 6,105.84 (F)  
 = 2,105.84 (F)

See Calculations for yield and mix variance in the parts that follow.

- (iii). Material Mix Variance = Actual Usage in Actual Mix – Actual Usage at the Standard Mix  
 At the standard price

Actual Usage in Actual Mix at Standard Price:

	Shs
AB: 1,400 x 120 = 168,000	
QP: 1,600 x 100 = <u>160,000</u>	328,000

Actual Usage at Standard Mix at Standard Price

AB: 3,000 x 40% X 120 =	144,000	
QP: 3,000 x 60% X 100 =	<u>180,000</u>	<u>324,000</u>
		<u>4,000 (A)</u>

- (iv). Material Yield Variance = Actual Usage at the standard – Standard Usage at standard  
Mix at standard price mix at the standard price

$$= \left[ \frac{\text{Actual Usage in}}{\text{Standard mix}} - \frac{\text{Standard Usage in}}{\text{standard mix}} \right] \text{Standard Price}$$

1kg of inputs produces 100% - 15% = 86% of output. Therefore to produce 2,500kg of Utopia Blend Output, we require total standard inputs of:

$$2,500\text{kg} \times \frac{100\%}{85\%} = 2,491.18 \text{ kg}$$

Standard Usage for the inputs in Standard Mix:

AB:	40% x 2,491.18	= 996.472
QP:	60% x 2,491.18	= 1,494.708

Then Yield Variance is computed as follows:

Inputs	Actual usage in standard mix	Standard usage for the output in standard proportion	Different	Standard Price	Variance
AB	3,000 x 40% = 1,200	996.472	203.528	120	24,423.36 (A)
QP	3,000 x 60% = <u>1,800</u>	<u>1,494.708</u>	305.292	100	<u>30,529.20 (F)</u>
	<u>3,000</u>	<u>2,491.18</u>			<u>6,105.84 (F)</u>

- (v). Material Cost Variance = (Actual Cost – Standard Cost)

Standard Cost of Material Used in 1kg of Output (Utopia Blend)

AB:	40% x 120	= Shs 48
QP:	<u>60%</u> x 100	= Shs <u>60</u>
	100% OR 1 kg of inputs = Shs 118	

But 1kg of Standard inputs produces 0.85kg of output because of the normal loss of 15%.

$$\therefore \text{Standard Cost of Inputs per kg of output} = 118 \times \frac{100\%}{85\%} = \text{Shs } 138.8235294$$

We produced 2,500kg of Utopia Blend.

$$\text{Therefore the standard cost of inputs} = \text{Sh } 138.82 \times 2,500 = \text{Sh } 347,058.8235$$

Less Actual costs of inputs:

AB:	175,000	
QP:	<u>152,000</u>	<u>(327,000)</u>
Total Material Cost Variance:		<u>20,058.8235</u> (F)

### QUESTION SIX

On the basis of the time the inventory takes to move through a given work cell. A work cell is a product-oriented center including the machines and levels necessary to produce a family of products. Other common basis used in ABC includes the number of purchase orders, the number of material handling hours and the number of set up hours.

The ABC System can therefore be described as constituting the following stages.

1. **Identifying the main activities in the organization:** The main organizational activities such as machine related activities, direct labour related activities as well as auxiliary activities (such as ordering, receiving, material handling costs etc) are identified.
2. **Cost Pooling:** Involves the assigning of costs to cost centers or cost pools. A cost center is created for each activity e.g., the total costs of all set-ups might constitute one cost center of all set-up related costs.
3. **Identifying the cost drivers:** Cost drivers are the factors that cause an activity to occur. They therefore influence the cost of a particular activity. Cost drivers capture the demand placed on an activity by a product for example; purchasing department costs may be done by the number of purchase orders processed.
4. **Absorption of Overheads to products:** Using the selected cost drivers, the overhead costs are applied to or absorbed by the products depending on the level of activities that the product has consumed.

The use of ABC therefore requires a change in the way overheads are classified by an organization. In a traditional costing system, overheads would be charged to products using at the most two absorption bases, usually labour hours and machine hours. ABC System, on the other hand, utilizes many cost drivers to absorb overheads into products. It is therefore claimed, and justly so, that the use of ABC products is a more realistic service or product cost, especially for service organizations and organizations with high overhead costs. However, managers used to the old system may resist the use of the ABC. Also, selecting the most appropriate cost driver from a host of the many may not be a straight forward activity. The relationship between the various activities that are involved in production may be time consuming and tedious exercise.

However, ABC is bound to produce the most accurate and the most relevant data for an organization's planning, decision making, and performance evaluation and control purposes.

### QUESTION SEVEN

(a)

Essential requirements of an effective stock control system include:

- (i) **Separation of duties:** There should be a clear separation of duties between those who receive, record, issue and account for stocks.
- (ii) **Coordination and Co-operation:** There should be proper coordination and co-operation between the various departments dealing in materials i.e. purchasing department, accounting department etc.
- (iii) **Stock Coding:** There should be proper classification and coding of materials.



- (iv) Planning: Material requirements for the individual departments and the whole organisation should be properly planned.
- (v) **Centralization Degree:** The degree of centralization of the purchasing and stores function should be compatible with the size of the organisation. However, the idea is a central purchasing department under the control of a competent expert purchase manager.
- (vi) **Working Perpetual Inventory System:** One perpetual inventory system should be operated so that up-to-date information is available about the quantity of material in stock.
- (vii) **Proper Accounting System:** Adequate records should be maintained to control materials during production and to be able to produce timely, accurate and complete stock reports.
- (viii) **Storage:** The storage of all materials should be well-planned and subject to adequate safeguards and supervision.
- (ix) **Stock Levels:** The various stock levels for each item of materials should be fixed e.g. stock re-order level, minimum stock or maximum stock.
- (x) **Budgeting:** Raw material purchases should be controlled through budgets based on annual demand.
- (xi) **Internal Controls:** An efficient system of internal audit and internal check should be operated so that all transactions involving materials are checked by reliable and independent persons.
- (xii) **Regular Reporting:** There should be regular reporting to management regarding purchases, issues and stocks of materials. Special reports should be prepared for obsolete items, spoilage, returns to suppliers etc. A system to deal with slow moving stocks and those near expiry should be in place e.g. to declare a special offer on them so as to clear them.
- (xiii) **Economic Order Quantity:** All purchases should be done at their EOQ so as to minimize the total stock costs.

Possible causes of discrepancies revealed by physical stock counts include:

- (i) **Human Errors:** Stock could have been erroneously counted or entered in the stock sheets or stock records, stocks could be double counted etc.
- (ii) **Normal Losses:** Expected losses due to evaporation and spillage could have occurred during loading, reloading, issues, storage etc.
- (iii) **Abnormal Losses:** There could be stock theft, or pilferages taking place in the organization.
- (iv) **Omissions:** Some stocks may not have been counted.

These discrepancies can be dealt with by:

- (i) **Recounting:** This would reveal errors previously made.
- (ii) **Enquiry:** Seek information on the normal losses expected on each stock item.
- (iii) **Install Adequate Controls:** The organization must install adequate system of internal controls to prevent stock fraud.
- (iv) **Recheck:** A thorough check of the bin cards would indicate which stocks have not been counted.

## DECEMBER 2010

## QUESTION ONE

## (a) (i)

Department	Forming	Machining	Finishing	Shs „000“
Overheads: (Budgeted)	20,000	80,000	60,000	
	80,000	40,000	120,000	
Departmental overhead absorption Rate				
= $\frac{\text{Overheads}}{\text{Labour cost}} \times 100$	$\frac{20,000}{80,000} \times 100$	$\frac{80,000}{40,000} \times 100$	$\frac{60,000}{120,000} \times 100$	
	= 25%	= 200%	= 50%	
<u>Costs Absorbed:</u>				
Labour Cost	88,000	38,000	144,000	
Overheads applied:	25% x 88,000 = 22,000	200% x 38,000 = 76,000	50% x 144,000 = 72,000	

$$\therefore \text{Total Overheads Applied (absorbed)} = 22,000 + 76,000 + 72,000 = 170,000$$

$$\text{Actual Costs Incurred:} = 24,000 + 72,000 + 78,000 = 174,000$$

$$\text{Overheads Underabsorbed} = 4,000$$

- ii) To dispose the above underabsorbed overheads (according to Note 5) we have to calculate the cost of goods sold:

	Sh „000“
Direct material:	360,000
Direct Labour	270,000
Manufacturing overheads	<u>174,000</u>
	804,000
Less: closing work in process	<u>(39,000)</u>
	765,000
Less closing finishing goods stocks	<u>(121,000)</u>
Cost of sales	<u>644,000</u>

The underabsorbed overheads are disposed as follows:

	Amount Shs. „000“	%
Work in Process	39,000	17.41
Finished goods	121,000	54.02
Cost of goods sold	<u>64,000</u>	<u>28.57</u>
	<u>224,000</u>	<u>100%</u>

## iii) Journal Entry:

	Amount Shs. „000“	%
Dr Work in Progress a/c	17.41% x 4,000	696.4
Dr Finished goods a/c	54.02% x 4,000	2,160.8
Dr Cost of goods sold	28.57% x 4,000	<u>1,142.8</u>
Cr Manufacturing overhead a/c		<u>4,000</u>

Being the proportion of underabsorbed manufacturing overheads.

b) Overheads applied on the basis of direct labour cost:

Using a factory wide overhead absorption rate:

$$\begin{aligned}\text{Factory Wide Overhead Absorption Rate} &= \frac{\text{Total Factory Budgeted Overheads} \times 100}{\text{Total Factory Labour Cost}} \\ &= \frac{(\text{Sh } 20,000 + \text{Sh } 80,000 + \text{Sh } 60,000) \times 100}{(\text{Sh } 80,000 + \text{Sh } 40,000 + \text{Sh } 120,000)} \\ &= \frac{\text{Sh } 160,000 \times 100}{\text{Sh } 240,000} = 66.67\%\end{aligned}$$

$$\begin{aligned}\text{Overheads applied} &= \text{Overhead Application Rate} \times \text{Direct Labour Cost} \\ &= 66.67\% \times (400,000 + 380,000 + 480,000) \\ &= 66.67\% \times 1,260,000 \\ &= \text{Sh } 8,400,420\end{aligned}$$

## QUESTION TWO

Moulding Department:

Statement of Physical Units

	Physical Units	Equivalent Units in:	
		Material	Conversion
Beginning work in Process	10,000		
Units started during October	<u>40,000</u>		
Units to account for	<u>50,000</u>		
Transferred to finishing Department	48,000	48,000	48,000
Ending work in process	<u>2,000</u>	<u>2,000</u>	<u>1,000</u>
Units accounted for:	<u>50,000</u>	<u>50,000</u>	<u>49,000</u>

Statement of Production Cost

	Total (Shs)	Materials (Shs)	Conversion costs (Shs)
Cost of Beginning work in process	7,500	6,000	1,500
Costs added currently	<u>40,000</u>	22,000	18,000
Costs to account for (A)	<u>47,500</u>	<u>28,000</u>	<u>19,500</u>
Equivalent units (B)		<u>50,000</u>	<u>49,000</u>
Unit Costs (A/B)	0.957959	0.56	0.397959

Cost applied as follows:

	Total (Shs)	Materials (Shs)	Conversion costs (Shs)
To: Completed units transferred to the finishing department: 48,000 x 0.957959	(C) <u>45,982</u>		
To: Ending work in process:			
Material: 200 x 0.56	1,120	1,120	-
Conversion cost: 1000 x 0.397959	<u>398</u>	<u>-</u>	<u>398</u>
Value of work in Process	(D) <u>1,518</u>	<u>1,120</u>	<u>398</u>
Total costs accounted for: (C + D)	47,500		

Finishing Department:

Statement of Physical Units

	Physical Units	Equivalent Units Material	Conversion
Beginning work in process	12,000		
Units started during October	<u>48,000</u>		
Units to account for	<u>60,000</u>		
Units transferred to finishing goods in store			
Ending work in process	44,000	44,000	44,000
Work done to date	<u>16,000</u>	<u>-</u>	<u>6,000</u>
	<u>60,000</u>	<u>44,000</u>	<u>50,000</u>

	Total (Shs)	Transfer in Shs	Materials (Shs)	Conversion Cost (Shs)
Beginning work in Process	21,000	9,800	-	11,200
Costs added during the month	<u>122,182</u>	<u>45,982</u>	<u>13,200</u>	<u>63,000</u>
Costs to account for (A)	<u>143,182</u>	<u>55,782</u>	<u>13,200</u>	<u>74,200</u>

	Total (Shs)	Transfer (Shs)	Materials (Shs)	Conversion Cost (Shs)
Equivalent Units (B)	-	60,000	44,000	50,000
Cost per unit	<u>2.7137</u>	<u>0.9297</u>	<u>0.30</u>	<u>1.484</u>

Cost Applied as follows:

Completed Units transferred to finished goods store:				
44,000 x 2.7137: (c)	119,403:			
Work in Process:				
Materials:	0	-	0	-
Conversion: 6,000 x 1.484:	<u>8,904</u>	<u>-</u>	<u>-</u>	<u>8,904</u>
(D)	<u>23,779</u>			<u>8,904</u>

Total Costs accounted for (C + D): 143,182

C) See the valuation of Closing work in Process in the "cost Applied as Follows" section of the Statement of Production Cost.

**QUESTION THREE**

- (a) Four ways of financing a cash deficit:

Bank overdraft facilities  
 Long term loans  
 Sale of fixed assets  
 Reduction in credit period to debtors  
 Bargaining for more time from creditors

- (b)
- Digital Trading Company

Cash Budget for November and December 2002.

Receipts	November	December
Opening cash balance	800,000	-
Collections from sales	<u>18,552,000</u>	<u>22,864,000</u>
Total cash available	(A) <u>19,352,000</u>	<u>22,864,000</u>
<u>Payments:</u>		
Purchases	14,700,000	1,134,000
Selling and administration expenses: Fixed	800,000	800,000
Variable	4,000,000	2,000,000
Loan Repayment: Principle	-	8,000,000
Interest	<u>-</u>	<u>600,000</u>
Total payments	(B) <u>19,500,000</u>	<u>22,740,000</u>
Surplus/deficit	(A – B) (148,000)	124,000
Borrowing	<u>148,000</u>	<u>-</u>
Balance c/f	<u><u>-</u></u>	<u>124,000</u>

Workings:

## Receipts from Sales

	September	October	November	December
Sales (Units)	<u>520,000</u>	<u>1,000,000</u>	<u>1,200,000</u>	<u>600,000</u>
Cost of Sales @ 14	7,280,000	14,000,000	16,800,000	8,400,000
Add: opening stocks	<u>6,300,000</u>	<u>7,000,000</u>	<u>4,900,000</u>	<u>4,480,000</u>
	13,580,000	21,000,000	21,700,000	12,880,000
Less: opening stock	<u>-</u>	<u>(6,300,000)</u>	<u>(7,000,000)</u>	<u>(4,900,000)</u>
Purchases necessary		<u>14,700,000</u>	<u>14,700,000</u>	<u>7,980,000</u>
Payments for purchases:				
In month of Purchase: 50%		7,350,000	7,350,000	399,000
Following month		<u>-</u>	<u>7,350,000</u>	<u>735,000</u>
Total purchase payments		<u>7,350,000</u>	<u>14,700,000</u>	<u>11,340,000</u>

- ii) Sales Revenue = Units x Sh 20

Amount collected within discount period = Sales Revenue x 70% x 98%.

- iii) Ending inventory = (200,000 units @ 14) + (25% of following month cost of sales)

**QUESTION FOUR**

(a)

Jiwe Construction Company Limited

Contract Account for the Period ended 31<sup>st</sup> March 2002.

	Shs		Shs
Material issued: Stores	5,500,000	Bal c/d	
Suppliers	14,200,000	Material:	2,100,300
Wages: paid	10,100,000	Plant and machinery:	4,800,000
Accrued	350,000	Cost of work certified	35,085,700
<b>Subcontractor's fees: Paid</b>	<b>4,501,000</b>		
Accrued	25,000		
Plant and machinery	6,000,000		
Loose tools and consumables	126,000		
Head office expenses apportioned	<u>1,184,000</u>		
	<u>41,986,000</u>		<u>-</u>
Cost of work certified b/d	35,085,700	Value of work certified	40,000,000
Profit taken: (2/3)	3,516,200	Work not certified c/d	360,000
Profit not taken	<u>1,758,100</u>		<u>-</u>
	<u>40,360,000</u>		<u>40,360,000</u>

Workings:

Value of work certified =  $\frac{\text{Payment (Sh 36,000,000)}}{10\%} = \text{Sh } 40,000,000$  (100% - 10%)

b) Profit to be taken to the Company's Revenue A/C:

	Shs.
Value of work certified	40,000,000
Add: value of work not yet certified	<u>360,000</u>
	40,360,000
Less: cost of work done:	<u>(35,085,700)</u>
Profit:	<u>3,274,300</u>
Profit taken @ 2/3:	3,516,200
Profit not taken @ 1/3:	<u>1,758,100</u>

c) Work in Progress Valuation:

	Shs.
Cost of work done:	35,085,700
Add: Profit taken	<u>3,516,200</u>
	38,601,900
Less money received	<u>(36,000,000)</u>
Value of closing W.I.P	<u>2,601,900</u>

OR:

	Shs
Cost of work not certified:	360,000
Add: money Retained	<u>4,000,000</u>
	4,360,000
Less: Profit not taken	<u>(1,758,100)</u>
	<u>2,601,900</u>

d)

Jiwe Construction Company

Balance Sheet (Extract) as at 31<sup>st</sup> March 2002:

	<u>Cost</u>	<u>Depreciation</u>	<u>NBV</u>
<u>Fixed Assets</u>			
Plant and machinery	6,000,000	(1,200,000)	4,800,000
<u>Current Assets</u>			
Materials		2,100,300	
Work in Process		2,601,900	
<u>Current Liabilities</u>			
Accruals: Wages	350,000		
Subcontractors' fees	25,000		

**QUESTION FIVE**

(a)

- Variable costs will only vary at a constant cost per unit only within a specified range of output and sales, beyond which it changes. Similarly, fixed costs are only fixed within a specified relevant range only, beyond which they change as extra machines are purchased, hired, etc.
- The learning curve effect also makes variable costs and fixed production costs to change over time.
- **The random interference of factors beyond the organization's control e.g.** technology changes and government regulations, may also make fixed and variable costs to behave differently. Thus, fixed and variable costs will only be well behaved only and only if the activity levels are within the relevant range.

b)

$$(1) \text{ Direct materials variable cost permit} = \frac{(800,000 - 600,000)}{(4,000 - 3,000)} \times 1,000 = \text{Shs } 200,000$$

$$\begin{aligned} \text{NB: } 60\% & \Rightarrow 3,000 \text{ Cars} \\ 80\% & = \frac{3,000}{60\%} \times 80\% = 4,000 \text{ Cars} \end{aligned}$$

$$\therefore \text{ Equation of cost is: } Y_{DM} = 0 + 200,000X$$

NB: Total Cost, Y = Fixed cost + Variable Costs.

At 4,000 output level, Y = FC + 4,000 (200,000)

But Y = 800,000,000.

Therefore 800,000,000 = FC + 4,000 (200,000) ----- Equation (i)

Similarly at Activity level 3,000 units, Y = FC + 3,000 (200,000) ----- Equation (ii)

Solving Equation (i) and (ii) simultaneously shows that FC = 0.

$$(2) \text{ Direct Labour Cost Per Unit} = \frac{(200,000,000 - 150,000,000)}{4,000 - 3,000} = \text{Shs } 50,000$$

$$\therefore Y_{DL} = 0 + 50,000X \quad \text{Also, no variable costs.}$$

$$(3) \text{ Indirect Labour Cost per Unit} = \frac{(240,000,000 - 200,000,000)}{4,000 - 3,000} = \text{Shs } 40,000$$

At output level 3,000 cars:  $200,000,000 = \text{FC} + 40,000 (3,000)$

$$\begin{aligned} \text{FC} &= 200,000,000 - 120,000,000 \\ &= \text{Shs } 80,000,000 \end{aligned}$$

$$\therefore Y_{IL} = 80,000,000 + 40,000X$$

$$(4) \text{ factory fuel and power: Cost per unit: } \frac{(130,000,000 - 100,000,000)}{4,000 - 3,000}$$

$$= \text{Shs } 30,000$$

At low Activity level of 3,000 units,

$$\text{Thus } 100,000,000 = \text{FC} + 30,000 (3,000)$$

$$\text{FC} = 100,000,000 - 90,000,000 = \text{Shs } 10,000,000$$

$$\therefore Y_{FP} = 10,000,000 + 30,000X$$

$$(5) \text{ factory Repairs Cost per Unit} = \text{Shs} \frac{(155,000,000 - 130,000,000)}{4,000 - 3,000}$$

$$= \text{Shs } 25,000.$$

At high activity level of 4,000 units,

$$\begin{aligned} 155,000,000 &= \text{FC} + 25,000 (4,000) \\ \text{FC} &= 155,000,000 - 100,000,000 \\ &= 55,000,000 \end{aligned}$$

$$\text{Therefore } Y_{FR} = 55,000,000 + 25,000X$$

At 120% level of operation, the output level is:  $\frac{3,000 \times 120\%}{60\%} = 6,000$  cars

Kenya Auto Assemblers Ltd  
Cost Statement for 6,000 cars

Variable Costs	Shs	Shs
Direct Material:	200,000 x 6,000	1,200,000,000
Direct Labour:	50,000 x 6,000	300,000,000
Indirect Labour:	40,000 x 6,000	240,000,000
Factory Fuel & Power:	30,000 x 6,000	180,000,000
Factory Repairs:	25,000 x 6,000	<u>150,000,000</u>
		2,070,000,000
Fixed Costs		
Indirect Labour:	80,000,000	
Factory fuel and power:	10,000,000	
Factory Repairs	55,000,000	<u>145,000,000</u>
		<u>2,215,000,000</u>

## QUESTION

SIX a)

Cost account and financial accounting distinction:



<b>Users:</b>	Cost accounting statements are used by internal users (the Management) for planning, control and decision making purposes. Financial accounting statements are used by external users (especially shareholders and the government.)
<b>Orientation:</b>	Financial accounting reports past information as it is based on historical accounting concepts. Cost accounting is future oriented as it provides information to be used for planning, controlling and decision making by the organizations managers.
<b>Regulation:</b>	Financial accounting is regulated by the accounting standards (also called the generally accepted accounting practices) while cost accounting is not.
<b>Reporting Period:</b>	Financial accounts are prepared for fixed periods usually annually while cost accounts are prepared as need arises.
<b>Scope:</b>	Financial accounting covers only the financial aspects of an organization. Cost accounting covers financial as well as other organizational aspects such as management etc.
<b>Presentation Format:</b>	There is no fixed format for cost accounting information. <b>It is presented in the manager's preferred format.</b> Financial accounting information is prepared using fixed formats.
<b>Auditing requirements:</b>	Cost accounting information is not subjected to external or internal audits while accounting information is.

b)

- i) Service departments provide services to production departments and sometimes provide reciprocal information to other service departments. These services are therefore not meant for income generation.
- ii) The cost of service departments should be distributed because of the following reasons:
  - The services have to be paid for and hence should be allocated or distributed to centers where revenue is generated or is available.
  - The cost of units passing through the production departments should include services ancillary to the production orders to be complete.
  - When managers are made aware that costs will be recovered on their departments, they are likely to exercise care and prudence on the use of the services from the service departments.
  - Managers performance can only be objectively evaluated if all the costs incurred by their (including in service centers) are included in their responsibility centers.

c) Methods of distribution service center costs:

Direct method: The percentage of services given out to other service departments is ignored and service costs apportioned in the ratio of remaining percentages.

Repeated Distribution: Service costs are apportioned repeatedly using the percentages given until the amount involved is too small (e.g. 1 digit). The single digit is apportioned using the direct method.

Step down: Apportionment is done starting with the service department giving out the highest percentage and moving down in that order. Once a service department cost is distributed, it is considered closed and subsequent department apportionment done using the ratio of the remaining percentages.

Linear Algebra: Simultaneous equations are formed and solved to establish total cost in each service department. The total cost is then apportioned using the percentages given.

### QUESTION SEVEN

(c) Five assumptions underlying the Cost-Volume-Profit analysis:

- (i) That all costs can be broken down into their fixed and variable components, with no cost failing to fit into either the fixed or variable cost category.
- (ii) The only factor that affects costs is the volume of production. All other factors are held constant.
- (iii) Fixed costs remain fixed over the relevant range.
- (iv) Selling price per unit is constant.
- (v) The variable cost per unit does not change over the relevant range.
- (vi) The product mix is constant.
- (vii) The technology level or production method does not change.

B)

- (i) Relevant Range: Refers to the activity band and time span over which the assumptions of the CVP to analysis apply. Beyond this range, the assumptions fail to hold and CVP analysis cannot be used.
- (ii) Margin of Safety: is the extent to which a firm is secure i.e., by how much the sales and profits need to decrease before the firm can make a loss. It is expressed as:

$$\frac{\text{Sales} - \text{B.E.P}}{\text{Sales}} \times 100$$

- (iii) Sensitivity Analysis: Refers to an analysis used to evaluate the effect on profits if the inputs are altered, for example, what happens to profits if the variable costs rise by 10%? Sensitivity analysis is used to model the future business conditions since they are usually unstable.
- (iv) Contribution Margin per Unit: Is the difference between the selling price per unit and the variable costs unit. It shows how much funds every unit sold contributes to **cover to the firm's fixed costs and contribute** to its profits.
- (v) Contribution Sales Ratio: Is the proportion of contribution to sales expressed as:

$$\frac{\text{Contribution}}{\text{Sales}} \times 100$$

It indicates the surplus available to meet fixed costs and profits as a percentage of realized sales.

JUNE 2011

## QUESTION ONE

- (a) Computation of Overhead Absorption Rates per Machine Hour

Overhead	Absorption basis	A Sh."000"	B Sh."000"	C Sh."000"	D Sh."000"	Total Sh."000"
Indirect wages	No. of indirect workers	3,478	4,870	2,261	1,391	12,000
Holiday pay & National Insurance	No. of workers (Total)	3,210	4,080	1,800	1,200	10,200
Supervision	Actual	5,170	4,720	3,630	3,160	16,680
Machine maintenance (wages)	Machine maintenance hours	4,200	2,800	5,600	1,400	14,000
Supplies	Actual	1,200	800	200	400	2,600
Power	Machine power	2,200	1,080	320	600	4,200
Tooling costs	Actual	5,400	4,100	2,600	1,200	13,300
Insurance – Machinery	Cost of machines	960	720	300	540	2,520
Insurance – buildings	Floor space	600	480	320	200	1,600
Depreciation	Cost of machines	4,000	3,000	1,250	2,250	10,500
Rent & rates	Floor space	4,650	3,720	2,480	1,550	12,400
Total		34,978	30,370	20,761	13,891	100,000
Therefore No. of machine hours:		30	60	25	10	
Absorption rate per machine hour		1,165.93	506.17	830.44	1,389.1	

- (b)
- PRODUCT XY 123**

(i)	Absorption rate	No. of Hours	Overhead Absorbed Sh."000"
A	1,165.93	8	9,327.44
B	506.17	3	1,518.51
C	830.44	1	830.44
D	1,389.10	4	<u>5,556.40</u>
			<u>17,232.79</u>

- (ii) Overhead:

= 70% of direct wages

= 70% x 22,000 = 15,400

**QUESTION TWO**

(a) Material price variance = Actual Quantity Purchased(Standard price – Actual price)

$$\text{Powder X} = 100,000 (7.5 - 7) = 50,000 \text{ F}$$

$$\text{Liquid chemical Y} = 6,000 (24 - 23) = 6,000 \text{ F}$$

$$\text{Plastic Tube} = 2,000 (3 - 4) = 2,000 \text{ A}$$

(b) Material Usage variance:

$$= \text{Standard price}(\text{Standard quantity used} - \text{Actual quantity used})$$

(i) **Determining Quantities (both standard & Actual)**

	<b>Standard</b>	<b>Actual</b>
Powder X	2 kg per tube x 45,000 90,000 kg	98,000
Liquid Y	¼ Litre tube x 45,000 11,250	10,500
Plastic tubes	1 piece per tube 45,000	45,200

(ii) **Variance computations**

$$\text{Powder X} = 7.5(90,000 - 98,000) = 60,000 \text{ A}$$

$$\text{Liquid chemical Y} = 24(11,250 - 10,500) = 18,000 \text{ F}$$

$$\text{Plastic Tube} = 3(45,000 - 45,200) = 600 \text{ A}$$

(c) **Direct Labour efficiency variance**

$$= \text{Standard rate} (\text{Standard hours} - \text{Actual hours})$$

$$\text{Standard hours} = \frac{18}{45} \times 45,000 = 18,000 \text{ hours}$$

$$= 45(18,000 - 2,050) = 717,750 \text{ F}$$

(d) **Direct wages rate variance**

$$= \text{Actual hrs} (\text{Standard rate} - \text{Actual rate})$$

$$= \frac{2,050}{45} \left[ \frac{(8,910,000)}{2,050} - \frac{(2,050)}{45} \right] = 8,817,750 \text{ A}$$

**QUESTION THREE**

- (a) Marginal Co. Ltd  
(variable costing statement)

	2001	2002	2001	2002
Sales	6,000	14,000	150,000	350,000
units				
<u>Less Variable costs</u>				
Opening stock			-	40,000
Direct materials @ 5,000			50,000	50,000
Direct labour @ 3,000			30,000	30,000
Man. Overhead @ 2,000			<u>20,000</u>	<u>20,000</u>
			100,000	140,000
Less closing stock			<u>(40,000)</u>	-
Variable production cost			60,000	140,000
Variable market costs			<u>7,500</u>	<u>17,500</u>
CONTRIBUTION			82,500	192,500
<u>Fixed costs</u>				
Fixed overhead 3,000 x 10,000			30,000	30,000
Fixed marketing			15,000	15,000
Fixed admin.			<u>17,000</u>	<u>17,000</u>
NET PROFIT			<u>20,500</u>	<u>130,500</u>

- (b) Reconciliation

	2001	2002
Profit per marginal costing	20,500	130,500
Difference in opening stocks	-	(12,000)
Difference in closing stocks (52,000 – 40,000)	<u>12,000</u>	-
Profit per absorption costing	<u>32,500</u>	<u>118,500</u>

- (c) Marginal costing is more suitable for managerial decision making because:
- It presents expenses according to cost behaviour (variability with level of activity)
  - Approximates actual cash flows position of a firm
  - Eliminates over(under) absorption of overheads
  - Fixed costs are incurred on a time basis hence logical to write them off in periods incurred.
  - Instances where sales are constant but production fluctuates, marginal costing will report constant profits (while absorption costing would report fluctuating profits).

**QUESTION FOUR**

Process 1					
	Units	Sh.		Units	Sh.
Input (initial)	250,000	15,625,000	Normal loss	25,000	468,750
Material		5,750,000			
Labour		4,812,500	Process 2	200,000	24,694,444
Overhead		<u>2,062,600</u>	Abnormal loss	25,000	<u>3,086,806</u>
	<u>250,000</u>	<u>28,250,000</u>		<u>250,000</u>	<u>28,250,000</u>

Abnormal Loss A/c					
	Units	Sh.		Units	Sh.
Process 1	25,000	3,086,806	Cash (scrap value)		468,750
Process 2		749,308			
Process 2 A/c					
	Units	Sh.		Units	Sh.
Process 1	200,000	24,694,444	Normal loss	10,000	425,000
Material		4,606,250	Finished goods	162,500	30,665,804
Labour		3,806,250	Bal. C/f	25,000	3,906,832
Overhead		2,640,000			
	200,000			197,500	
			Abnormal loss	2,500	749,308
	<u>200,000</u>	<u>35,746,944</u>		<u>250,000</u>	<u>28,250,000</u>

(b) Normal loss = Increases cost/unit

Scrap value = Reduces cost/unit

#### Production cost report – Process 2 (workings)

	Total	Transferred in	Material	Labour	OHS
From Process 1	<u>200,000</u>				
Normal loss	10,000				
Abnormal loss	2,500	2,500	1,750	1,250	1,250
Completed & transferred	162,000	162,500	162,500	16,250	162,500
Ending WIP	25,000	25,000	20,000	17,500	12,500
	<u>200,000</u>	<u>90,000</u>	<u>184,250</u>	<u>181,250</u>	<u>176,250</u>
<u>Cost flow</u>					
Process 1	24,694,444	24,694,444	-	-	-
Current costs	1,052,500	-	4,606,250	3,806,250	2,640,000
	<u>35,746,944</u>	<u>24,694,444</u>	<u>4,606,250</u>	<u>3,806,250</u>	<u>2,640,000</u>
Normal loss	(425,000)	-	-	-	-
Costs to apportion	<u>35,321,944</u>	<u>24,269,444</u>	<u>4,606,250</u>	<u>3,806,250</u>	<u>2,640,000</u>
Equivalent units		÷190,000	÷184,250	÷181,250	÷176,250
Cost/equivalent unit		Sh.127.73	Sh.251	Sh.21	Sh.14.98
<u>Application of costs</u>					
	30,665,804	2,075,676	4,062,500	3,412,500	2,434,043
	749,308	319,335	43,750	367,500	18,723
Transferred out	3,806,832	3,193,348	500,000	26,250	187,234
Abnormal loss					
Ending WIP					
	<u>35,321,944</u>	<u>24,269,444</u>	<u>4,606,250</u>		

(c) Limitations of EOQ

- Unrealistic assumption that there is complete certainty of all variables
- It ignores the probability that discounts are awarded in purchase price based on quantities.

(d) Demand (D) = 144,000 units  
 Ordering costs (Co) = Ksh.12,500  
 Holding costs (Ch) = 20% Purchase price  
 Purchase price = Ksh.500

Safety stock(s) = NIL

$$\begin{aligned} \text{(i)} \quad \text{EOQ} &= \sqrt{\frac{2DC_o}{C_h}} \\ &= \sqrt{\frac{2 \times 144,000 \times 12,500}{(20\% \times 500)}} = 6,000 \text{ units} \end{aligned}$$

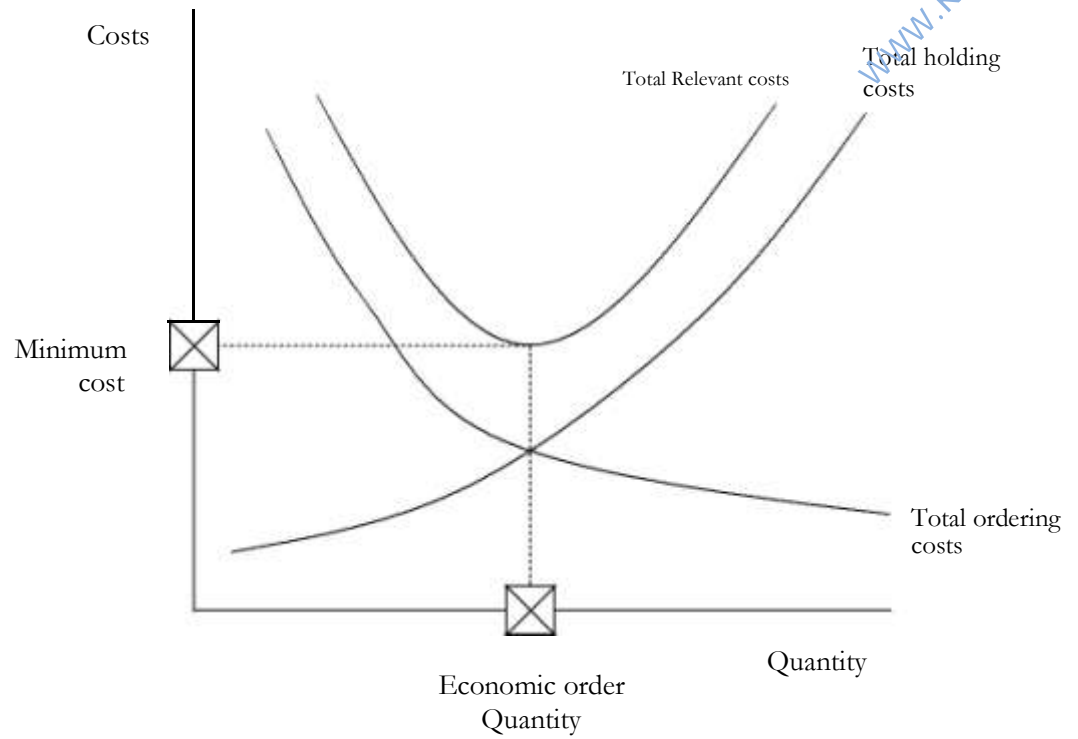
$$\begin{aligned} \text{(ii)} \quad \text{Number of orders per year} &= \frac{D}{\text{EOQ}} \\ &= \frac{144,000}{6,000} = 240 \text{ orders} \end{aligned}$$

$$\begin{aligned} \text{(iii)} \quad \text{Total costs} &= \frac{D}{\text{EOQ}} C_o + \left(\frac{1}{2}Q + s\right) C_H \\ &= \frac{144,000}{24} \times 12,500 + \left(\frac{1}{2} \times 6,000\right) (20\% \times 500) \\ &= 600,000 \end{aligned}$$

#### QUESTION FIVE

- (a) Possible causes for differences between stock record cards and actual physical stocks include:
- (i) Losses due to:
    - (a) evaporation
    - (b) shrinkage,
    - (c) theft
    - (d) obsolescence and deterioration.
  - (ii) Differences due to items in transit either to/from the store.

(b)





## DECEMBER 2011

## QUESTION ONE

- (a) Cash budget reveals the estimated cash balances for each month together with receipts and payments estimated to be received and paid during the period.

**Functions of a cash budget**

- Ensure that sufficient cash is available when required
- Can be helpful in revealing an unexpected cash shortage
- Can reveal cash surplus.

- (b) **Cash budget for Week 1 - 6**

	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6
Receipts:						
	1,000	7,000	9,100	28,000	54,300	52,800
<b>Opening balance</b>	24,000	16,800	21,000	16,800	12,600	
	<u>      </u>	<u>7,200</u>	<u>7,200</u>	<u>9,000</u>	<u>7,200</u>	<u>5,400</u>
70%						
30%						
	<u>24,000</u>	<u>24,000</u>	<u>28,200</u>	<u>25,800</u>	<u>19,800</u>	<u>5,400</u>
<b>Payments</b>						
Materials	8,000	12,500	6,000	-	-	-
Direct labour	3,200	4,200	2,800	-	-	-
Variable overheads	4,800	3,200	-	-	-	-
Fixed overhead	<u>2,000</u>	<u>2,000</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>
	<u>18,000</u>	<u>21,900</u>	<u>9,300</u>	<u>500</u>	<u>500</u>	<u>500</u>
Closing balance	<u>7,000</u>	<u>9,100</u>	<u>28,000</u>	<u>53,300</u>	<u>52,800</u>	<u>52,300</u>

## QUESTION TWO

- (a)
- C-V-P analysis that costs can easily and accurately be separated into fixed and variable elements.
  - Total fixed costs remain constant. However, they will increase in a step like fashion as output increases beyond certain ranges of activity levels.
  - The assumption that volume is the only factor affecting costs but other factors also affect costs e.g. inflation, economic and political factors.
  - It assumes that where a firm sells more than one product the sales – mix is constant. Sales mix keep on changing due to changes in demand.
  - Assumes that costs and sales can be predicted with certainty. These are uncertain variables to predict.
  - Assumes that sales volume is the same as the production volume implying that profit is dependent on sales level. Sales and production are not always equal and profit is affected by other factors.

- (b) (i) Total profit made during the year 2003

$$= \text{Contribution} - \text{Fixed costs}$$

$$\text{Contribution} = (\text{selling price} \times \text{quantity sold} - \text{variable costs})$$

$$= (100,000) \text{ units} \times \text{Sh.}300 - 20,000,000$$

$$= \text{Sh.}10,000,000$$

		Sh.		Sh.
New variable costs:	Material	= 500 x 1.2	=	600
	Labour	= 600 x 1.1667	=	700
	Other direct costs	= 60 x 1.67	=	100
	Variable overheads	= 40 x 1.25	=	<u>50</u>
				<u>1,450</u>

$$\begin{aligned} \text{New contribution required} &= \text{Profit} + \text{Fixed Costs} \\ &= \text{Sh.}10,000,000 + 20,000,000 \times 1.05 \\ &= \text{Sh.}31,000,000 \end{aligned}$$

$$\text{Therefore contribution per unit} = \frac{\text{Sh.}31,000,000}{100,000} = \text{Sh.}310$$

$$\begin{aligned} \text{And selling price} &= \text{Variable cost} + \text{contribution} \\ &= \text{Sh.}(1,450 + 310) \\ &= \text{Sh.}1,760 \end{aligned}$$

An increase of Sh.260 on the previous price of Sh.1,500 or 17.33% which is below 17.5%.

(ii)

$$\begin{aligned} \text{Number of units to be sold} &= \frac{\text{Fixed costs} + \text{profit}}{\text{Contribution/unit}} \\ &= \frac{\text{Sh.}(21,000,000 + 10,000)}{\text{Sh.}(1500 - 1450)} \\ &= \frac{\text{Sh.}31,000,000}{50} \\ &= 620,000 \text{ units} \end{aligned}$$

(iii) A 17.5% increase in price on Sh.1,500 = Sh.1,762.50

Thus if price charged is slightly below this figure there is no effect on the number of units sold and total sales = 100,000 units @ Sh.1,762.50 = Sh.176,250,000.

But if price charged is an 18.5% on Sh.1,500 = 1,777.50 the units sold drop by 2% from 100,000 to 98,000 units.

$$\text{Total revenue} = 98,000 \text{ units} \times 1,777.50$$

$$= \text{Sh.174,195,000}$$

**QUESTION THREE**

(a)

	<b>Actual Sh."000"</b>	<b>Flexible Sh."000"</b>
Sales	480,000	432,000
<u>Costs</u>		
Direct labour	120,000	108,000
Direct materials	125,000	112,500
Variable overheads	85,000	76,500
Fixed overheads	<u>80,000</u>	<u>80,000</u>
	<u>387,400</u>	<u>386,214</u>
Profit	70,000	55,000

(b)

	X	Y
High	200	960
Low	<u>120</u>	<u>770</u>
	80	190

$$\text{Slop } b = \frac{\Delta Y}{\Delta X} = \frac{190}{80} = 2.375$$

$$\begin{aligned} Y &= a + bx \\ 960 &= a + 2.375 \times 200 \\ 960 &= a + 475 \\ a &= 485 \end{aligned}$$

$$\text{Formula: } Y = 485 + 2.375$$

$$\begin{aligned} \text{Where: } Y &= \text{Overhead cost} \\ X &= \text{Output in tonnes „000"} \end{aligned}$$

OR

PERIOD	X	Y	XY	X <sup>2</sup>
1	120	770	92,400	14,400
2	150	820	123,000	22,500
3	160	810	129,000	25,600
4	170	830	141,100	28,900
5	200	960	192,000	40,000
6	170	900	153,000	28,900
7	200	940	188,000	40,000
8	200	950	190,000	40,000
9	180	940	169,200	32,400
10	160	870	139,200	25,600
11	140	800	112,000	19,600
12	150	820	123,000	22,500
13	<u>140</u>	<u>790</u>	<u>110,600</u>	<u>19,600</u>
	2,140	11,200	1,863,100	360,000

$$\sum Y = Na + b \sum X$$

$$\sum XY = a \sum X + b \sum X^2$$

$$\begin{array}{rcl}
 11,200 & = & 13a + 2,140b \dots\dots\dots 2,140 \\
 1,863,100 & = & 2,140a + 360,000 \\
 \\ 
 23968000 & = & 27820a + 4579600b \\
 - 24220300 & = & 27820a + 4680000b \\
 \hline
 252300 & & 100,400b
 \end{array}$$

$$a = \frac{252300}{100400}$$

$$b = 2.513$$

$$\begin{array}{rcl}
 11200 & = & 13a + 2140(2.513) \\
 11200 & = & 13a + 5377.82 \\
 a & = & \frac{11200 - 5377.82}{13}
 \end{array}$$

$$a = 447.86$$

$$\text{Formula: } Y = 447.86 + 2.513$$

#### QUESTION FOUR

##### (a) Process 1 Account

	Units	Cost/unit Sh.	Total Sh."000"		Units	Cost/unit Sh.	Total Sh."000"
Input	250,000	62.5	15,625	Normal loss	25,000	18.75	468.75
Materials			5,750	Abnormal loss	25,000	123.47	3,086.75
Labour			4,812.5	Transfer to			
Overhead			<u>2,062.5</u>	Process 2	<u>200,000</u>	123.47	<u>24,694.50</u>
	<u>250,000</u>		<u>28,250</u>		<u>250,000</u>		<u>28,250</u>

##### (b) STATEMENT OF EQUIVALENT UNITS

	PHYSICAL INPUT					
	Units	Materials		Material	Labour	Overhead
Closing W.I.P	25,000	25,000		20,000	17,500	12,500
Abnormal loss	2,500	2,500		1,750	1,250	1,250
Transfer to finished goods	<u>162,500</u>	<u>162,500</u>		<u>162,500</u>	<u>162,500</u>	<u>162,500</u>
		<u>190,000</u>		<u>184,250</u>	<u>181,250</u>	<u>176,250</u>
Total cost		24,494,500		4,606,250	3,806,250	2,640,000
Less normal scrap		<u>425,000</u>				
		24,269,500				
Cost per equivalent unit		127.73		25	21	14.979
Closing values						
To finished goods		22,296,630		4,062,500	3,412,500	2,434,090
W.I.P		3,430,250		500,000	367,500	187,240
Abnormal loss		343,030		43,750	26,250	18,720
				<b>Sh.</b>		
Total to process 2				32,205,720		
Output to finished goods				4,484,990		
Work-in-progress				431,750		

Process 2 Account					Units	Cost/ unit Sh.	Total Sh. "000"
Transfer Ex-pro	200,000	123.47	24,269,500	Normal loss	10,000	42.5	425,000
Material			4,606,250	Abnormal loss	2,500		431,750
Labour			3,806,250	Transfer to EG	162,500		32,205,720
Overhead			2,640,00	W.I.P c/f	<u>25,000</u>		<u>4,484,990</u>
	<u>200,000</u>		<u>37,546,740</u>		<u>200,000</u>		<u>37,547,746</u>

NB: The difference of Sh.806 is due to rounding error effect.

**Normal loss:** Is the loss inherent in a process, therefore will occur even if the process is 100% efficient e.g. losses due to evaporation is linkage etc.

**Scrap value:** Is the net sales value realised from the sale of scrapped units (units that cannot be reworked).

### QUESTION FIVE

- (a) (i) Under absorption of overheads occurs when using the pre-determined rates.

#### Reasons

- Inappropriate predetermined rates
- Wrong base for calculating the rates.

$$\text{OAR} = \frac{\text{Overheads}}{\text{Absorption base}}$$

$$= \frac{316,800,000}{22,000,000}$$

$$= \text{Sh.14.40/ labour hr.}$$

(ii)	Actual overheads	280,000,000
	Absorbed 21,600 x 14.4(000)	<u>311,040,000</u>
	Overhead absorbed	<u>31,040,000</u>

(iii)		<b>Alpha Sh.</b>	<b>Beta Sh.</b>
	Materials	1.60	1.80
	Direct labour	1.80	3.20
	Overheads @ 14.4 per hr	<u>14.40</u>	<u>28.80</u>
	Unit production cost	<u>17.80</u>	<u>33.80</u>
(iv)	Cost drivers rates		

Set up	$\frac{214,800,000}{60}$	= 3,580,000/set up
--------	--------------------------	--------------------

Orders cost	$\frac{36,000,000}{72}$	= 500,000/order
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Machine activity	$\frac{66,000,000}{40,000,000}$	= 1.65 per hour
------------------	---------------------------------	-----------------

**Overheads**

	<b>Alpha Sh.</b>	<b>Beta Sh.</b>
Set up @ 3,580,000	89,500,000	125,300,000
Orders @ 500,000	6,000,000	30,000,000
Machine activity @ 1.65 per hour	<u>39,600,000</u>	<u>26,400,000</u>
	135,100,000	181,700,000
	$\div \underline{6,000,000}$	$\div \underline{8,000,000}$
No. of units	22.50	22.70

**Unit Production Cost**

	<b>Alpha Sh.</b>	<b>Beta Sh.</b>
Materials	1.60	1.80
Direct labour	1.80	3.20
Overheads	<u>22.50</u>	<u>22.70</u>
Production cost	<u>25.90</u>	<u>27.70</u>

**(c) Reasons:**

1. Traditional method assumes that only one activity is the only cost driver.
2. Traditional method assumes that its products which consumes costs yet in **ABC it's the activity.**

A single absorption rate has problems in that:

- It does not relate incurrence of costs to the activity
- It over-allocates to products which consume/use more of the selected absorption base.
- Generally, volume of output determine overheads absorbed when a single rate is used which may not be realistic.
- It is not a good method for cost control.

**QUESTION SIX****(a) Controllable costs and non-controllable costs**

Controllable costs are those that may be directly regulated at a given level of management authority. This means that controllable costs can be influenced by a manager within a given time span.

**Non-controllable costs**

A non-controllable cost is any cost which is not under the influence of any manager. Such costs have to be incurred regardless of whether production takes place or not. Non-controllable costs are therefore fixed costs which cannot be altered in their incurrence.

**(b) Fixed costs and marginal costs**

Fixed costs are those costs which are not affected by the level of activity within a given range. They remain fixed in the short term but when the level of activity is changed, fixed costs will also change. Examples of fixed costs include: salaries, depreciation and rent.

**Marginal costs**

Marginal costs represent the additional cost resulting from a group of additional units of output.

(c) **Discretionary costs and periodic costs**

Discretionary costs are arising from periodic, usually yearly, budget appropriation decisions that directly reflect top management policies. Usually they have a fixed cost behaviour pattern.

**Periodic costs**

These are non-inventoriable costs. They are deducted as expenses during the current period without having previously classified as costs of inventory.

(d) **Cost tracing and cost accumulation**

Cost tracing is the assignment and re-assignment of a cost or group of costs to one or more cost objectives. It is also called cost allocation.

**Cost accumulation**

Cost accumulation is the collection of cost data in an organised way through an accounting system.

(e) **Sunk costs and standard (planned) costs**

Sunk costs are expenditures made in the past which cannot be changed and over which management no longer have control over. An example is the book value of an asset currently in use. In a decision as to whether or not the asset should be replaced, the book value will be irrelevant.

**Standard (planned) costs**

Standard (planned) costs are important for budgeting purposes. Historical costs are used for comparison with budgeted performance in order to highlight areas where control may be necessary.

**QUESTION SEVEN**(a) **A company should ensure material control in the following stages**

- Procurement/identification of appropriate suppliers for all relevant materials, and raised orders.
- Ensure that there are appropriate procedures on receipt of the materials after they have been ordered – i.e. receipts are according to order.
- Proper storage of the materials so that they are safe and secure.
- Maintenance of adequate stock records for all the classification of materials.
- Ensure that issues are properly authorised and accounted for.

**In order for the system to be efficient, the following should be taken into accounts:**

- Materials should be of the desired quality and specifications to avoid returns and reduce on wastage in the production process.
- Stock levels should be monitored. Materials should be ordered when authorised or required.
- Supplies should be efficient and effective. They should minimise lead-time and not overprice.
- Materials should be appropriately inspected before they are stored. This should be done against purchase order by knowledgeable personnel.
- Materials should be protected from physical deterioration and theft.
- There should be periodic views to check that all the quantities bought are accounted for.
- A simple method of coding all stocks of materials should be identified and properly classified before issue.

- There should be proper documentation at each stage from purchase requisition, order receipt up to when goods are issued.
- Materials issues should be properly allocated/charged to the relevant cost units for direct materials and to the appropriate cost centres for indirect costs.

(b) (i) **Three types of performance standard**

- Basic standards – Unchanging standards relating to past circumstances and which are rarely used. They help in identifying trends.
- Ideal standards – Assume perfect conditions. Materials and labour can be acquired at the cheapest rates, and there are no inefficiency wastage or machine breakdown. These standards are unrealistic and usually result in adverse motivation effect on the workforce.
- Expected/currently attainable standards – are realistic and do allow for some normal loss, machine breakdowns and inefficiency. Sometimes they are high enough to have motivation effect on employees.

(ii) **Problems in standard costing**

- Heavy load of input data is required which is expensive.
- Standard costing is only applicable where processes or jobs are of a repetitive nature
- Inaccurate standard costs will lead to bad results when compared with actual results.
- Because of uncertainty in areas like inflation standards need to be continually updated and revised.



## JUNE 2012

## QUESTION ONE

- (a) Calculation of fixed overhead absorption rates

	Quarter 2	Quarter 3	Quarter 4
	Sh.	Sh.	Sh.
Budgeted FOH	10,400,000	19,170,000	17,360,000
Budgeted Production (units)	8,000	14,200	12,400
FOH absorption rate (per unit)	1,300	1,350	1,400
FOH absorbed (actual units x rate)	10,920,000	18,360,000	12,880,000
Less actual FOH	<u>11,200,000</u>	<u>18,320,000</u>	<u>16,740,000</u>
	280,000	40,000	3,860,000
	Underabsorbed	Overabsorbed	Underabsorbed
Effects on Profit & Loss A/c	Deduction	Add back	Deduct
	Profit & Loss	In Profit & Loss	In Profit & Loss

- (b) Units in Closing Stock

	Quarter 2	Quarter 3	Quarter 4
	Sh.	Sh.	Sh.
Units	2,600	2,400	2,600
Opening stock	<u>8,400</u>	<u>13,600</u>	<u>9,200</u>
Add: Production	11,000	15,000	11,800
Less: Sales	<u>9,600</u>	<u>12,400</u>	<u>10,200</u>
Closing stock	<u>1,400</u>	<u>2,600</u>	<u>1,600</u>

Whether marginal costing or absorption costing produces a higher profit in a given period depends entirely on the amount of fixed overheads in opening and closing stocks. Fixed overhead content of stocks.

	Quarter 2	Quarter 3	Quarter 4
	Sh.	Sh.	Sh.
F.O content of closing stock	1,820,000	3,510,000	2,240,000
	(1,400 x 1,300)	(2,600 x 1,350)	(1,600 x 1,400)
Less F.O Content of opening Stock (given)	<u>3,315,000</u>	<u>1,820,000</u>	<u>3,510,000</u>
Difference	<u>(1,495,000)</u>	<u>1,690,000</u>	<u>(1,270,000)</u>

Note that opening stock in quarter 3 is the closing stock in quarter 2 and opening stock in quarter 4 is closing stock in quarter 3.

Absorption costing profit is therefore higher than margin profit in quarter 3 but lower in quarter 2 and 4.

- (c) Absorption costing is a product convention with many arbitrary assumptions and subjective assessments e.g. analysis apportionment and absorption of overheads, treatment of under/over absorption, the way cost centres are determined, the treatment of service cost centres

In consequence, information based on absorption costing principles is not suitable for use in decision making.

## QUESTION TWO

- (a) Advantages of high-low method

- Method is easy to use
- Not many data are needed
- Visually it gives the general direction of the trend

## Disadvantages

- Choice of the high and low points is subjective
- Method does not use all available data
- Cannot be used for more than one independent variable
- Not possible to defend the results statistically
- If the two points are outliers, the predictive equation will be wrong.
- Method may not be reliable

## (b) (i) High-low method

	Machine hours Sh. „000“	Fuel oil expense Sh. „000“
High-point (June 2004)	48	680
Low-point (January, 2004)	<u>26</u>	<u>500</u>
Difference	<u>22</u>	<u>180</u>

$$\begin{aligned} \text{Variable cost per machine hour} &= \frac{180,000}{22,000} \\ &= \text{Sh.8.182 per hour} \end{aligned}$$

Substituting for January 2004

$$\begin{aligned} \text{Variable costs (26 x 8.182)} &= 212,730 \\ \text{Fixed cost (difference)} &= \frac{287,270}{500,000} \end{aligned}$$

**Interpretation:**

Within the relevant range, Sh.282,270 will be incurred irrespective of the machine hour usage of the unit i.e. 282,270 is fixed.

The total fuel consumption will thereafter vary at the rate of Sh.8.182 for each machine hour usage.

$$\begin{aligned} \text{(ii) Fuel expense in November, 2004} \\ &= 287,264 + 8.182 \times 41,000 \\ &= \text{Sh.622,726} \end{aligned}$$

## (iii) Limitations of high-low method

- Relies only on two data points – highest and lowest which may be outside and therefore not representative of the entire data set.
- The method does not use robust statistical techniques, to measure the predictive quality of the resultant function.

**QUESTION THREE**

- (a) Calculation of standard product costs and selling price

	Quarter 3 Shs.	Quarter 4 Shs.
Direct Materials		
X = 10kg @ Sh.10		100
Y = 5 Kg @ Sh.50		250
Direct wages (5 hrs @ Sh.30)		150
Fixed overhead (5hrs @ 200% of Sh.30)		<u>300</u>
Standard costs		800
Profit   $\left( \frac{20}{100 - 20} \times \text{Sh.800} \right) =$		<u>200</u>
Selling price		<u>1,000</u>
Actual profit for the period:		10,450,000
Sales (9,500 units @ Sh.1,100)		
Direct materials:		
X	1,152,000	
Y	2,256,000	
Direct wages (46,000 x 32)	1,472,000	
Fixed overhead	<u>2,900,000</u>	<u>7,780,000</u>
Actual profit		<u>2,670,000</u>

- (b) Variances for direct materials:

Material price variance = (Standard price – Actual price) x Actual

quantity X = (Sh.10 – Sh.12) x 96,000 = Sh.192,000 U

Y = (5 – 4.70) x 48,000 = Sh.144,000 F

Material usage variance = (standard quantity – actual quantity) x Standard

price X = (9,500 x 10 – 96,000) x 10 = Sh.10,000 U

Y = (9,500 x 5 – 48,000) x 50 = Sh.25,000 U

Variances for direct wages:

Wage rate variance = (Standard rate – actual hours) x standard rate

= (9,500 x 5 – 46,000) x 30

= 45,000

Overhead variances:

F.O Spending variances = budgeted F.O – Actual F.O

= 10,000 x 30 x 5 x 200% - 2,900,000

= Sh.100,000 favourable

Volume efficiency variance = (Standard hours – actual hours) x fixed overhead rate

$$= (47,500 - 46,000) \times 60$$

$$= \text{Shs. } 90,000 \text{ favourable}$$

$$\text{Volume capacity variance} = (\text{Actual hours} - \text{budgeted hours}) \times \text{fixed overhead rate}$$

$$= (46,000 - 50,000) \times 60$$

$$= \text{Shs. } 240,000 \text{ unfavourable}$$

#### Sales variances:

$$\text{Sales margin variance} = (\text{Actual hours} - \text{standard margin}) \times \text{actual sales volume}$$

$$= \text{Shs. } (300 - 200) \times 9,500$$

$$= \text{Shs. } 950,000 \text{ favourable}$$

$$\text{Sales margin volume variance} = (\text{Actual Sales volume} - \text{Budget Sales volume}) \times \text{Standard margin}$$

$$\text{Shs. } (9,500 - 10,000) \times 200 = \text{Shs. } 100,000 \text{ U}$$

$$\text{Total} = \text{Shs. } 670,000 \text{ favourable}$$

#### QUESTION FOUR

- (a) (i) Reorder level is the point at which it is essential to initiate purchase requisitions for fresh supplies of the material. It is higher than minimum stock level to cover emergencies as abnormal usage or unexpected delays in delivery, it is also lower than the maximum stock level otherwise excess stock would be carried.
- (ii) Re-order quantity is the amount of stock/supplies for which purchase requisitions are initiated.
- (c) Factors to consider in determining re-order level
- Rate of consumption of the materials
  - Time necessary to obtain delivery of the materials
- The re-order quantity
- (d) Notice that the purchase cost is not constant per unit, it is therefore not possible to use the EOQ model schedule of costs should therefore be prepared.

Evaluation of optimal order size:

Size of order	No. of orders	Annual purchase costs (W1) Sh.	Storage costs Sh.	Administration costs Sh.	Total costs Shs.
2,400	1	172,800	30,000	500	203,300
1,200	2	172,800	15,000	1,000	188,800
600	4	182,400	7,500	2,000	191,900
200	12	192,000	2,500	6,000	200,500
100	24	192,000	1,250	12,000	205,250

Recommendation: Place two orders per year for 1,200 units at a cost of Sh.188,800.

## QUESTION FIVE

(a) **Wajenzi Ltd****Contract a/c for year ended 31.12.2003**

	Sh."000"		Sh."000"
Materials	18,000	Materials at site	800
Plant	5,000	Plant at site (W2)	2,700
Wages (25,000 + 3,000)	28,000	Abnormal loss a/c – Material lost	800
Expenses (1,200 + 200)	1,400	Plant lost by fire (W2)	925
Bal c/d (notional profit)	4,125	Plant transferred to other contracts	900
		W.I.P certified	50,000
		Work uncertified	400
	<u>56,525</u>		<u>56,525</u>

(b) **Abnormal Loss A/c**

	Sh."000"		Sh."000"
Contract account	800	Bank (scrap value realised)	200
Contract a/c (Plant destroyed)	<u>925</u>	Profit and loss account	<u>1,525</u>
	<u>1,725</u>		<u>1,725</u>

(c) **Profit and loss a/c for year ended 31.12.2003**

	Sh."000"		Sh."000"
Abnormal loss a/c	1,525		
Profit carried to Balance sheet	<u>675</u>	Contract a/c	<u>2,200</u>
	<u>2,200</u>		<u>2,200</u>

(d) **Balance sheet as at 31.12.2003**

	Sh"000"	Sh"000"		Sh"000"	Sh"000"
Liabilities		20,000	Assets		8,000
Share capital		675	Land & Building		2,700
Profit & Loss a/c		2,000	Plant at site		900
Creditors			Plant returned to store		
Outstanding expenses:			Materials at site		800
Wages	3,000		WIP Certified	50,000	
Other expenses	<u>200</u>	3,200	Uncertified	<u>400</u>	
				50,400	
			Provision	<u>(1,925)</u>	
				48,475	
			Cash received	<u>(40,000)</u>	8,475
			Bank (4,800 + 200)		<u>5,000</u>
		<u>25,875</u>			<u>25,875</u>

**Workings**

(1) Plant at site: (Original cost – lost in fire – returned to store)

	Shs.
(5,000,000 – 1,000,000 – 1,000,000) =	3,000,000
Less: Depreciation (10% x 3,000,000) =	<u>300,000</u>
Balance	<u>2,700,000</u>

(2) Plant lost by fire:

Original cost – Depreciation for 9 months  
 $[1,000,000 - (10\% \times 1,000,000 \times 9/12)]$   
 = Sh.925,000

(3) Plant returned to store:

Original cost – Depreciation  
 $(1,000,000 \{10\% \times 1,000,000\})$

= Sh.900,000

- (4) Profit taken to Profit & loss a/c  
 $\frac{2}{3} \times \text{notional profit} \times (\text{Cash received/Work certified})$   
 =  $\frac{2}{3} \times 4,125,000 \times 0.8$   
 = Sh.2,200,000

NB: Stage of completion =  $\text{Ksh.}50,000,000 / 100,000,000 = 50\%$

## QUESTION SIX

- (a) **“An equivalent unit” is a notional quantity of completed production substituted for** an actual quantity of incomplete physical units in process, when the aggregate work content of the incomplete units is deemed to be equivalent to that of the substituted quantity of completed units. The concept of equivalent units is applied in process costing to compute an appropriate value in terms of units for production which is incomplete at the beginning and at the end of a process.
- (b) -Marginal costing does not apportion or absorb fixed costs. Absorption costing absorbs fixed costs into units of production.
- Absorption costing values stocks on the basis of direct costs plus a proportion of overheads. Marginal costing carries forward stocks at variable production costs only.
  - Marginal costing writes off all fixed costs to the period in which they were incurred. In absorption costing, fixed costs are treated as product costs and are therefore unaffected by period.
  - Marginal costing is used for managerial decision making process.
  - Absorption costing is used for external reporting purposes.
- (c) Factors in deciding the suitable method of remuneration of labour
- The system should be simple and easy to understand and calculate.
  - It must offer a fair day's pay for a fair day's work.
  - It should take into account the relationship between quality and quantity of output.
  - It should be based on an acceptable method of work measurement and unit of work definition.
  - It should take into account differences of training and occupation.
  - It should recognise the values attached to skills and occupations of other employers in other industries.
- (d) Marginal costing is used when:
- Costing special one – off contracts/jobs in which case the job/contract will not very much affect the day to day operations of a business.
  - When making a make or buy decision marginal costing will be good since whichever decision is taken, what matters is contribution towards fixed cost.
  - When a business has a factor limiting production level marginal costing will assist in highlighting the contribution per unit of the limiting factor.
  - Marginal costing is used in the calculation of the breakeven point. This is the point where profits = zero and guides a business in organising its business production.

- In order to choose between two competing alternatives marginal costing method is the best.

### QUESTION SEVEN

- (a) A predetermined overhead rate is a rate set at the beginning of a period to estimate the probable expenditure given a correlated factor such as labour hours, direct labour costs or machine hours. This rate is used to allocate factory overhead to goods in process thus making it possible to determine the approximate complete costs of finished units as quickly as possible.

Over or under-applied overhead is the difference between the actual factory overhead incurred during the period and the amount applied to goods in process by use of a predetermined factory overhead rate.

- (b) A job costing system is a system of cost accounting under which the focal point of costing is a quantity of product known as a job. Costs of raw material, direct labour and factory overhead applicable to each job are compiled to arrive at average unit cost.

Processing costs are the cost of processing raw materials into finished products. They include direct labour and factory overhead costs.

- (c) Opportunity costs concern the cost of foregoing the next best alternative use of resources in a business. The concept of opportunity cost is important in decision making as for example the cost of using scarce production hours on making product which might be the profit foregone by not using those resources to make product B.

Variable costs describe costs which change in direct proportion to the volume of production. Variable cost per unit does not change but when the number of units produced is increased, the variable costs in total increase in direct proportion to units.

- (d) Period costs are those costs related to a certain costing or accounting period which should be written off against the profit of that period and not carried forward in the cost of stock or work-in-progress to be charged against a succeeding period. Period costs include administration, selling and research overheads.

Product costs include all costs incurred in manufacturing a product, e.g. direct labour, materials and a fair proportion of the overhead expense incurred in the manufacture of that stock.

- (e) Joint costs are costs incurred by two or more products in a production process. The products are produced simultaneously in a process and each is apportioned its equal share of the process cost.

Relevant costs are those future costs that will be changed by a decision. The relevance of costs will depend on the purpose for which they are being used. They change between the alternative courses of action being considered.

NOVEMBER 2012

## SECTION 1

## QUESTION ONE

	Exe Shs.	Wye Shs.	Zed Shs.
Selling price	12,000	20,000	22,500
<b>Variable costs</b>			
Direct material	3,000	9,000	6,000
Variable overhead	1,500	4,000	4,500
Direct labour	<u>2,500</u>	<u>3,900</u>	<u>5,500</u>
	<u>7,000</u>	<u>16,900</u>	<u>16,000</u>
Contribution margin	5,000	3,100	6,500
CM/Labour in Dept2	5000/1	3,100/2.5	6,500/4
=	Sh. 5,000/hr	1,240/hr	1,625/hr

## RANKING:

1. - Exe
2. - Zed
3. - Wye

## (a) Current Profit

$$(100,000 \times 5,000 + 50,000 \times 3,100 + 60,000 \times 6,500) - 500,000,000$$

$$= \text{Sh. } 545,000,000$$

(7 marks)

## (b) Labour hours in Dept2

	Hours
Exe 100,000 x 1 =	100,000
Wye 50,000 x 2.5 =	125,000
Zed 60,000 x 4 =	<u>240,000</u>
	<u>465,000</u>
Produce 125,000 units of Exe, total hours -	125,000
Produce 80,000 units of Zed, total hours -	320,000
Produce 8,000 units of Wye, total hours -	<u>20,000</u>
	<u>465,000</u>

∴ Optimum production mix

Exe	125,000 units	
Zed	80,000 units	
Wye	8,000 units	(7 marks)

## (c) Expected Profit

$$(125,000 \times 5,000 + 80,000 \times 6,500 + 8,000 \times 3,100) - 500,000,000$$

$$= \text{Sh. } 669,800,000$$

(3 marks)



(d) **Other factors to consider:**

- i) Economic factors affecting prices
- ii) Future cost structure
- iii) Government policy
- iv) Plant capacity

(3 marks)

**(TOTAL: 20 MARKS)****QUESTION TWO****Workings:**

	<b>Cost Sh.</b>	<b>Financial Sh.</b>	<b>Difference Sh.</b>
Opening stock of raw materials	160,000	150,000	10,000
Opening stock of work in progress	121,000	125,000	4,000
Opening stock of finished goods	258,000	240,000	18,000
Closing stock of raw materials	196,000	200,000	4,000
Closing stock of work in progress	125,000	130,000	5,000
Closing stock of finished goods	260,000	255,000	5,000
Factory overheads	262,500	300,000	37,500
Discount received	-	45,000	45,000
Income from investment	-	1,094,000	1,094,000
Depreciation	242,000	280,000	38,000
Interest on loan (expenses)	-	36,000	36,000
Debenture interest	-	25,000	25,000
Administration expense	632,000	600,000	32,000
Interest on capital (not)	140,000	-	140,000
Notional rent	420,000	-	420,000

**Profit reconciliation statement for the year ended 31 March 2004**

	<b>Shs.</b>	<b>Shs.</b>
Net profits as per financial account		2,418,000
Add: Depreciation in financial accounts	280,000	
Interest on loan	36,000	
Debenture interest	25,000	
Overstatement in opening stock of work in progress	4,000	
Understatement in closing stock of finished goods	5,000	
Overstatement in factory overheads	<u>37,500</u>	<u>387,500</u>
		2,805,500
Less: Overabsorbed administration expense	32,000	
Selling and distribution overhead applied	25,000	
Depreciation in cost accounts	242,000	
Discount received	45,000	
Income from investment	1,094,000	
Understatement in opening stock of raw materials	10,000	
Understatement in opening stock of finished goods	18,000	
Overstatement in closing stock of raw materials	4,000	
Overstatement in closing stock of work in progress	<u>5,000</u>	<u>1,475,000</u>
		<u>4,280,500</u>

Note: Notional charges in cost accounts should be ignored.

**(TOTAL: 20 MARKS)**

**ALTERNATIVE****RECONCILIATION STATEMENT**

	Shs.	Shs.
Profit as per cost accounts		2,328,400
Add: Overabsorbed Adm.	32,000	
Overabsorbed S/D	25,000	
Discount received	45,000	
Income Invest	1,094,000	
Opening stock Raw Materials	10,000	
Opening stock Finished goods	18,000	
Closing stock Raw Materials	4,000	
Closing stock Work in progress	5,000	1,233,000
Less: Depreciation	38,000	
Loan interest	36,000	
Debenture interest	25,000	
Opening stock work in progress	4,000	
Closing stock finished goods	5,000	
Overheads	37,500	(145,500)
Profit as per final accounts		<u>3,415,900</u>

**QUESTION THREE**(a) **Mamba Ltd.****Profit statement using conventional method:**

	X Sh. „000“	Y Sh. „000“	Z Sh. „000“
Sales	<u>225,000</u>	<u>380,000</u>	<u>219,000</u>
<u>Cost of production</u>			
Prime cost	16,000	33,600	19,500
<u>Overheads</u>			
Machine department	24,000	48,000	28,800
Assembly department			
Total cost	<u>57,750</u>	<u>19,800</u>	<u>9,900</u>
Profit/(loss)	<u>97,750</u>	<u>101,400</u>	<u>58,200</u>
	<u>127,250</u>	<u>278,600</u>	<u>160,800</u>

(6 marks)

(b) **SUPERCLEAN LTD.****(i) Amount of profit:**

	30 September 2003 Litres	„000“	30 September 2004 Litres	„000“	Difference „000“
Activity 10 litre container:	10 x 650,000 =	6,500.0	10 x 605,000 =	6,050	
Activity 20 litre container:	20 x 575,000 =	<u>11,500.0</u>	20 x 607,000 =	<u>12,140</u>	
		<u>18,000.0</u>		<u>18,190</u>	<u>190.0</u>
		<u>11,182.5</u>		<u>11,268</u>	<u>85.5</u>

Overheads (Sh.)

∴ 190,000 litres have a variable cost of 85,500

∴ Variables cost per unit of litre =  $\frac{85,500}{190,000} = 0.45$

Variable cost element for period ending 30 September 2003

$$= 180,000,000 \times 0.45 = 8,100,000$$

Total cost = Fixed cost + Variable cost

$$\therefore 11,182,500 = x + 8,100,000$$

$$\therefore \text{Fixed cost} = 11,182,500 - 8,100,000 = 3,082,500$$

**Unit contribution:**

	10 litre container Sh.	20 litre container Sh.
Direct cost	70	155
Variable overheads $10 \times 0.45 =$	<u>4.5</u>	<u>9</u>
Unit marginal cost	74.5	164
Selling price	<u>150</u>	<u>350</u>
Unit contribution	75.5	186

**Profit**

10 litre container $385,000 \times 75.5$	29,067,500
20 litre container $290,000 \times 186$	<u>53,940,000</u>
Total contribution from products	83,007,500
Less: Total fixed assets	<u>(3,082,500)</u>
<b>Profit</b>	<b>79,925,000</b>

(10 Marks)

(ii) **Main uses of marginal costing:**

- Used to provide information to management for planning and decision-making particularly important for short-run decisions involving changes in volume or activity and the resulting cost changes.
- Used in routine cost accounting system for calculation of costs and valuation of stock.

(4 Marks)

**(TOTAL: 20 MARKS)**

**ALTERNATIVE**

	10 Litre Sh. „000“	20 Litre Sh. „000“	Total
Sales	57,750	101,500	159,250
<u>Less variable costs</u>			
Direct costs	(26,950)	(44,950)	
Overheads	(?????)	(?????)	
Contribution			
Fixed costs	(?????)		<u>(?????)</u>
omit			<u>?????</u>

**Variable overheads**

Total litres – 003	$650,000 + 575,000 =$	1,225,000
- 004	$605,000 + 607,000 =$	<u>(1,212,000)</u>
Change in Activity		<u>13,000</u>

Costs	03	11,182,500
	04	<u>11,268,000</u>
Change in costs		85,500

$$\begin{aligned} \text{Variable cost per unit (litre)} & \quad \frac{85,500}{-13,000} \\ & = -6.57 \end{aligned}$$

**QUESTION FOUR**

(a)

	<b>PRODUCTS</b>	
	<b><u>A</u></b> <b>Sh.</b>	<b><u>B</u></b> <b>Sh.</b>
Material 1	100.0	40.0
Material 2	80.0	120.0
	180.0	160.0
Direct labour L1	240.0	300.0
L2	240.0	100.0
	660.0	560.0
Production overheads @ 1.60	32.0	24.0
	692.0	584.0
Selling and distribution 20%	138.4	116.8
	830.4	700.8
Profit margin 25%	<u>207.6</u>	<u>175.2</u>
Selling price per unit	<u>1,038.0</u>	<u>876.0</u>

**Units to be sold:**

<b><u>A</u></b>	<b><u>B</u></b>
13,494,000	18,816,000
1,038	876
<u>13,000</u>	<u>21,479</u>

**Opening stock finished goods in units:**

<b><u>A</u></b>	<b><u>B</u></b>
1,730,000	1,176,000
692	584
<u>2,500</u>	<u>2,014</u>

**Closing stock finished goods in units:**

<b><u>A</u></b>	<b><u>B</u></b>
1,038,000	1,568,000
692	584
<u>1,500</u>	<u>2,685</u>

**Ideal Products Ltd.**

Production budget in units

	<b><u>A</u></b>	<b><u>B</u></b>	<b><u>TOTAL</u></b>
Sales in units	13,000	21,479	34,479
Closing stock	<u>1,500</u>	<u>2,685</u>	<u>4,185</u>
	14,500	24,164	38,664
Less: Opening stock	<u>(2,500)</u>	<u>(2,014)</u>	<u>(4,514)</u>
<b>Production in units</b>	<b><u>12,000</u></b>	<b><u>22,150</u></b>	<b><u>34,150</u></b>

(8 marks)

## (b) Direct materials cost budget:

	M1 Sh.	M2 Sh.	Totals Sh.
Product A	1,200,000	960,000	2,160,000
Product B	886,000	2,658,000	3,544,000
Total	<u>2,086,000</u>	<u>3,618,000</u>	<u>5,704,000</u>

(3 marks)

## (c) Purchases budget:

	M1 Sh.	M2 Sh.	Totals Sh.
Material cost	2,086,000	3,618,000	5,704,000
Closing stock	<u>360,000</u>	<u>800,000</u>	<u>1,160,000</u>
	2,446,000	4,418,000	6,864,000
Opening stock	<u>(640,000)</u>	<u>(600,000)</u>	<u>(1,240,000)</u>
Material purchases in Sh.	<u>1,806,000</u>	<u>3,818,000</u>	<u>5,624,000</u>
Material purchases in Kg.	180,600	190,900	381,800

(6 marks)

## (d) Direct labour cost budget:

	LI Sh.	L2 Sh.	Totals Sh.
Product A	2,880,000	2,880,00	5,760,000
Product B	<u>6,645,000</u>	<u>2,215,000</u>	<u>8,860,000</u>
	9,525,000	5,095,000	14,620,000

(3 marks)

(TOTAL: 20 MARKS)

## (b)

## Material usage budget

	MI	M2
Prod. A: 12000 units	X10kg = 120,000kg	X4kg = 48,000kg
B: 22151 units	X4kg = <u>88,604kg</u>	X6kg = <u>132,906kg</u>
	208,604kg	180,906kg
Cost per unit	<u>X Sh. 10</u>	<u>X Sh. 20</u>
	<u>Sh. 2,086,040</u>	<u>Sh. 3,618,120</u>

## QUESTION FIVE

## (a)

## Process 1 Account

	Kg. „000“	Sh. „000“		Kg. „000“	Sh. „000“
Material			Normal loss (20%)	600	1,200
Labour	3,000	75,000	Transfer to Process 2	2,300	71,300
Process plant time		120	Abnormal loss	100	3,070
General overhead:		240			
(120,000/204,000 x 357,000)		210			
	<u>3,000</u>	<u>75,570</u>		<u>3,000</u>	<u>75,570</u>

$$\begin{aligned} \text{Cost per unit} &= \frac{\text{Cost of production less scrap value of normal loss}}{\text{Expected output}} \\ &= \frac{75,570,000 - 1,200,000}{2,400,000} = \text{Sh. 31} \end{aligned}$$

**Process 2 Account**

	<b>Kg. „000”</b>	<b>Sh. „000”</b>		<b>Kg. „000”</b>	<b>Sh. „000”</b>
Previous cost	2,300	71,300	Normal loss	430	1,290
Materials	2,000	80,000	Transfer of	4,000	155,581
			Finished stock		
Labour		84			
General overhead:					
(84,000/204,000 x 357,000)		147			
Process plant time		270			
Abnormal gain		151,801			
(130kg@ sh.39)	<u>130</u>	<u>5,070</u>			
	<u>4,430</u>	<u>156,871</u>		<u>4,430</u>	<u>156,871</u>

$$\text{Cost per unit} = \frac{151,801,000 - 1,290,000}{3,870,000} = \text{Sh.39}$$

(10 marks)

(b)

**Finished stock account**

	<b>Sh. „000”</b>
Process 2	155,581

(2 marks)

(c)

**Normal loss account (income due)**

	<b>Sh. „000”</b>		<b>Sh. „000”</b>
Process 1 normal loss	1,200	Balance of cash received	2,490
Process 2 normal loss	<u>1,290</u>		
	<u>2,490</u>		<u>2,490</u>

(4 marks)

(d)

**Abnormal loss accounts**

	<b>Sh. „000”</b>		<b>Sh. „000”</b>
Process 1	3,070	Normal loss (100 x 2)	200
	<u>3,070</u>	Profit and loss a/c	<u>2,870</u>
			<u>3,070</u>

**Abnormal gain accounts**

	<b>Sh. „000”</b>		<b>Sh. „000”</b>
Normal loss (loss of 130 @ 3	390	Process 2	5,070
Profit and loss a/c	<u>4,680</u>		
	<u>5,070</u>		<u>5,070</u>

(4 marks)

**(TOTAL: 20 MARKS)****SECTION II****QUESTION SIX**(a) **Joint products and by-products**

Joint products are products that have a relatively high sales value and are not separately identifiable as individual products until the split off point. They result from a single process producing simultaneously a group of individual products each of which has a significant relative sales value e.g. in the following industries: meat, vegetable, fruit.

By-products are products that have a low sales value compared with the sales value of main or joint products.

It is any product of value that is produced incidentally to the main product e.g. in converting iron into steel useful fertiliser can be a by-product. (4 marks)

(b) (i) **Reasons for allocation of joint costs**

- Inventory cost and cost of goods sold computation for external financial statement.
- Inventory cost and cost of goods sold computation for internal financial reporting such as divisional profitability analysis.
- Cost reimbursement (under contracts) used only when a portion of the separate products/services is sold or delivered to a single customer.

(4 marks)

(ii) **Methods of joint cost allocation**

- Physical measure method – allocation on the basis of relative proportions in physical measure i.e. output in kg/litres etc at the split off point.
- Allocation using market selling price data. Methods in this category include:
  1. Sales value of split-off point, i.e. on the basis of the relative sales value (in shillings, dollars, etc) at the split-off point.
  2. Estimated net realizable value (NRV) method – allocates costs on the basis of the relative estimated net realizable value (expected final sales value in the ordinary course of business minus expected separate cost of production and marketing).
  3. Constant gross-margin percentage net realizable value – allocates joint costs so that the overall gross margin, percentage is identical for each individual product.

(8 marks)

(iii) **Factors to be considered in selecting an appropriate method:**

- Simplicity – the method should be simple to work out especially in the phase of multiple products and multiple split-offs.
- Availability of meaningful common denominator to compute the weighting factors for allocation.
- Subsequent management decisions – the method chosen should take into account any anticipation of subsequent decisions intended by management for further processing of the joint products. (4 marks)

(TOTAL: 20 MARKS)

## QUESTION SEVEN

- a) **Disagree** –relevant costs are defined as expected future cost that differ among alternative courses of action: Valuable costs are costs that vary in direct proportion to changes in production activity – they would therefore differ at various levels of production activity and therefore relevant.

**Fixed costs are costs that remain constant (don't vary)** in total for a particular range of activity (relevant range) regardless of changes in activity. Fixed costs therefore are only irrelevant with respect to a defined range of activity but not absolutely. Once the defined range is exceeded, fixed costs also change and therefore become relevant.

(3 marks)

- b) **Agree** – book value or historical cost is a one time cost and once incurred is considered sunk and irreversible. Such costs have no influence on future decisions. (3 marks)
- c) **Disagree** – there is a thin line of difference between the two.

Differential costs – also known as incremental costs is the difference between cost for the corresponding items under each alternative course of action being considered. Relevant cost are first and foremost costs relating to future and will be affected/changed by whatever course of action adopted. (3 marks)

- d) **Disagree** – Profits per se of a product line is not enough consideration for discontinuation as it factors in an element of fixed costs allocated to the product line. These costs would remain whether the product line is discontinued or not.
- The deciding factor therefore should be the contribution margin of the product line, if the contribution margin is positive the product line should be retained as it contributes something towards the recovery of the fixed costs.
  - The product line should only be discontinued if the contribution margin (i.e. sales – variable costs) is negative. (3 marks)

- e) **Forecast** – is a prediction of „what will“ happen as a result of a given set of circumstances. It is therefore a judgement that can be done by any competent person.

**Budget** – is a planned result that an enterprise aims to attain. It is therefore an enterprise's objective that may be specified only by the authorized management.

(2 marks)

- f) **Disagree**

When an economist's total cost curve is plotted at the lower level the cost curve rises sharply as the initial activity is coming into being, then straightens out and rises steadily and consistently due to the constant returns. At higher activity levels the curve begins to rise more and more steeply (curve of diminishing returns).

On the other hand when an accountant's cost curve is plotted the relevant activity range of the cost curve is straight because an enterprise normally operates between the extremes of under-employment and over employment of facilities. (3 marks)

- g) **Opportunity cost of an activity** – is anything that the enterprise will process i.e. product or service. Opportunity cost of a resource is anything that the enterprise holds that can be disposed of without further processing e.g. land, labour. (3 marks)

**(TOTAL: 20 MARKS)**



## **COST ACCOUNTING**

**COST ACCOUNTING  
JUNE 2013  
SUGGESTED SOLUTIONS**

**QUESTION ONE**

a) **Briefly explain the term “limiting factor”**

A limiting factor is a binding constraint upon the organization. It prevents indefinite expansion or unlimited profits. It may be sales, availability of finance, skilled labour, supplies of material, lack of space etc. Where a single binding constraint exists, the general objective of maximizing contribution can be achieved by selecting this alternative which maximizes the contribution per unit of the key factor or limiting factor. The limiting factor changes from time to time e.g. a firm may have a shortage of orders, this can be overcome by appointing more salesmen and then find out there is a shortage of machine capacity.

b) **Identify and compute the limiting factor for Bidii Ltd**

If Bidii Ltd would produce according to maximum demand would there be a limiting factor?

	<b>Exe</b>	<b>Wye</b>	<b>Zed</b>	<b>Totals</b>
Maximum demand (units)	3,000	2,500	5,000	
Direct labour: machine hour per unit (hrs)	6	4	7	
Total machine hours needed (hrs)	18,000	10,000	35,000	63,000

The maximum capacity of machine hours is 50,000 hours but if the company was to produce to meet maximum demand it would need 63,000 hours. Machine hours is therefore a limiting factor as it constraints the organisation. It prevents expansion or unlimited profits. It is limiting by  $63,000 - 50,000 = 13,000$  hours.

What about assembling hours?

	<b>Exe</b>	<b>Wye</b>	<b>Zed</b>	<b>Totals</b>
Maximum demand (units)	3,000	2,500	5,000	
Direct labour: machine hour per unit (hrs)	6	6.5	7	
Total machine hours needed (hrs)	18,000	16,250	35,000	69,250

Total hours needed are 69,250 but maximum capacity is 75,000 hours therefore assembling hours are not a limiting factor.

c) **Determine which product(s) should be sourced from external supplier and the relevant quantities**

Based on the above information, what is the most appropriate mix to produce under the following assumption:-

- (i) If machine hours are limited to 50,000 hours in a period.

Whenever products have a positive contribution and there are no limiting factors they should be produced. However, in our case a limiting factor exists hence the products should be ranked in order of contribution per limiting factor and the most profitable product mix established.

	<b>Exe</b>	<b>Wye</b>	<b>Zed</b>
Selling price per unit (Shs)	2,000	1,580	2,240
Less: <u>Total variable costs</u> (Shs)	1,540	1,110	1,780
Contribution per unit (Shs)	460	470	460
Machine hours per unit (Shs)	6	4	7
Contribution/machine hours (Shs)	$\frac{460}{6} = 76.67$	$\frac{470}{4} = 117.5$	$\frac{460}{7} = 65.71$
Ranking	2	1	3

Therefore;

Produce;

2500 units of WYE using (2500 x 4) 10,000 hrs

3000 units of EXE using (3000 x 6) 18,000 hrs

3142 units of ZED using (3142 x 7) 21,994 hrs

49,994 hrs  $\approx$  50,000 hours

The company should source  $5000 - 3142 = 1858$  units from the external supplier which will cost him 2000 per unit.

- d) **Based on your recommendations in (c) above, determine the profits for the period commencing 1 March 2005 and ending 28 Feb 2006**

**Profit and Loss statement for the year ending 28 Feb 2006**

	Exe	Wye	Zed	Totals
Sales	6,000,000	3,950,000	11,200,000	21,150,000
Less: <u>Total variable costs</u>	4,250,000	2,775,000	5,592,760	(12,987,760)
Costs of sales	-	-	3,176,000	(3,176,000)
Direct labour – machine hours	1,440,000	355,200	1,759,520	<u>(3,554,720)</u>
Net profit				<u>1,431,520</u>

**QUESTION TWO**

- a) **State advantages of using standards costs in the manufacturing industry**
- It is an effective cost control tool as it compares expected performance with actual performance and it takes action on the basis of the variances for controlling costs.
  - It aids in planning i.e. it instills in management a habit of thinking in advance
  - It helps in fixing of selling prices and formulating of policies since standard costs are used
  - It facilitates delegation of authority i.e. responsibilities are assigned and performance evaluation will be based on the set responsibilities.
  - Valuations of stocks is simplified i.e. stocks are valued at a standard cost irrespective of their actual production cost
  - It helps in motivation as after performance evaluation employees with favourable variances will be rewarded.
  - It helps eliminate waste as only enough will be provided in the standards
  - It helps instill an attitude in employees of cost control since they have a guide
  - It is economical and simple as it results in cost savings through cost control, reduction in paper work.

- b) **(i) Material price variance**  
(Actual price – standard price) Actual quantity

$$\begin{aligned} &\text{Timber;} \\ &= \frac{1,125,000}{4,500} - 280 \quad 4,500 \\ &= 135,000 \text{ (F)} \end{aligned}$$

Varnish;

$$\begin{aligned} &= \frac{364,000}{300} - 290 \quad 290 \\ &= 276,950 \text{ (A)} \end{aligned}$$

- (ii) Material usage**

(Actual quantity – standard quantity) standard price

Timber;

$$(4,500 - (620 \times 6))280 \\ = 218,400 \text{ (A)}$$

Varnish;

$$(290 - (0.5 \times 620))300 \\ 6000 \text{ (A)}$$

**(iii) Labour rate of pay variance**

(Actual rate – standard rate)Actual hours

$$\left( \frac{364,000}{5,200} - 60 \right) 5,200$$

$$= (70 - 60) 5,200 \\ = 52,000 \text{ (A)}$$

**(iv) Labour efficiency variance**

(Actual hours – standard hours)standard rate

$$= (5,200 - (620 \times 8))60 \\ = 14,400 \text{ (A)}$$

**(v) Idle time variance**

(Hours worked – hours paid) standard labour rate  
OR

Idle hours x standard rate per hour

$$= 4,800 \times 60 \\ = 288,000 \text{ (A)}$$

**c) Possible cause of material variances**

**Price variances**

- i) Paying higher or lower prices than planned
- ii) Losing or gaining quantity discounts by buying large or small quantities than planned
- iii) Buying lower or higher quality than planned
- iv) Buying substitutes material due to unavailability of planned material

**Usage variances**

- i) Greater or lower yield from material than planned
- ii) Gains or losses due to use of substandard or higher quality than planned
- iii) Greater or lower rate of scrap than anticipated.

**QUESTION THREE**

**a) Ardhi Company**

**i) Basic guaranteed hourly rates used to calculate earnings**

	Mambo	Saidi	Mbogo	Zainabu
Actual hours worked	38	36	40	34
Basic hourly rate of pay	<u>30</u>	<u>20</u>	<u>25</u>	<u>36</u>
Earnings (Basic x actual hours worked)	<u>1140</u>	<u>720</u>	<u>1000</u>	<u>1224</u>

**ii) Piecework rates used to calculate earnings for employees**

	Mambo	Saidi	Mbogo	Zainabu
Number of minutes worked	2280	2160	2400	2040
Rate per minute	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>
Earnings (rate x number of minutes)	<u>1140</u>	<u>1080</u>	<u>1200</u>	<u>1020</u>

- iii) **Premium bonus**, given that an employee earns the premium bonus at a rate of  $\frac{2}{3}$  of the time saved.

	Mambo	Saidi	Mbogo	Zainabu
Hours allowed	38	23.4	12.5	52.5
Hours taken	38	36	40	34
Hours saved	-	-	-	18.5
Bonus hours ( $\frac{2}{3}$ x hours saved)				<u>12.33</u>
Bonus wage (bonus hours x hourly rate)				<u>444</u>

**b) Ushindi company**

- Calculate amount of bonus payable
- The total gross wage payable
- The wage cost per unit

	Mbotela	Juma
Wage rate (Shs)	18	18
Units produced	186	210
Hours allowed (hrs)	$(186 \times 0.5) = 93$ $(210 \times \frac{25}{60}) = 87.5$	
Hours worked (hrs)	44	39
Hours saved (hrs)	49	48.5
Bonus (hours saved x 20% x basic wage) - Shs	882*	873*
Basic wage rate (wage rate x hours worked upto max)	720*	702*
Overtime hours worked (hrs)	4	-
Overtime rate ( $18 \times 1.67$ )	30	-
Overtime pay (Shs)	<u>120*</u>	
Total gross wage payable (*) shs	<u>1722</u>	<u>1575</u>

Wage cost per unit

For;	Mbotela	Juma
<b>Total wages</b>	<u>1722</u>	<u>1575</u>
Units produced	186 = 9.258 shs/unit	210 = 7.5 shs/unit

**QUESTION FOUR**

- State objectives of budgetary planning and control systems**
  - To ensure that management plans ahead so that long term goals are achieved.
  - To establish a basis for internal audit regularly evaluating departmental results
  - To allow people to participate in setting of budgets thereby have a motivational impact on the workforce
  - To provide a yardstick against which the performance of the firm can be evaluated
  - To make people more responsible for items of cost and revenue
  - To identify areas of efficiency and inefficiency. Variance analysis will prompt remedial action where necessary
  - To ensure communication is increased throughout the firm and co-ordination improved.
- Limitations of using budgetary systems to regulate activities**
  - Its costly since it involves research and forecasting
  - Budgets create a risk of high expectation from budgets proposed to be implemented
  - As budgets are prepared at the beginning of the period they are based on estimates and forecast of parameters which may not actually occur or they may not have been included but they occurred
  - They may set unattainable targets

- e) It creates a danger of rigidity where persons implementing may implement the budgets without considering dangers that have occurred.
- f) Its time consuming
- g) When imposed by supervisors, subordinates may frustrate the achievement since budget at times involve changes
- h) It creates conflict within the department in an organisation especially where some activities of a department are not implemented while other department activities are implemented.

### Kunda Ltd

#### Flexible Budget based on a 50% level of activity

	Shs	Shs
Sales (4500 x 40.25)		181,125
Less: Costs		
Direct materials	31,500	
Direct wages	13,500	
Production overheads	27,900	
Administration overheads	31,500	
Selling and distribution overheads	40,500	144,900
Profit		36,225

$$\text{Total costs} = 144,900 - 80\% = 181,125 - 100\%$$

$$\text{Selling price} = \frac{181,125}{4,500} = 40.25 \text{ shillings}$$

- iii) Three problems which may arise from such a change in level of activity;
  - i) There could be a lot of idle capacity in the company
  - ii) **It would also lead to most of the company's staff being redundant or idle**
  - iii) The company could fail to meet the requirements of the customers
  - iv) The costs i.e. fixed costs remain the same hence this will reduce the profits of the firm

### QUESTION FIVE

#### Briefly explain

#### High Low Method

This is a simple cost technique which uses only the highest and the lowest values contained in a set of data and graphically or arithmetically determine the rate of cost change and hence the variable cost. The variable cost so established is used to estimate the fixed amount.

#### Simple regression method

Regression analysis determines mathematically the regression line of best fit. It is based on the principle that the sums of square of the vertical deviations from the line established is the least possible i.e.  $\sum(y - \hat{y})^2$  is minimized where  $y$  is the observed value and  $\hat{y}$  is the predicted value. The equation can be solved by the use of normal equations;

$$\sum y = na + b\sum x$$

$$\sum xy = a\sum x + b\sum x^2$$

- i) **Use the high-low method to estimate the overhead cost function**

Highest cost (OHs) - 15,280 level of activity 1690

Lowest cost (OHs) - 9150 level of activity 834

$$\text{Range} = \frac{15,280 - 9,150}{1690 - 834} = \frac{6130}{856} = 7.16$$

$$Y = a + bx \quad \text{where } b = 7.16$$

$$Y = 15,280$$

$$\text{Therefore } 15,280 = a + 7.16 \times 1690$$

$$a = 15,280 - (7.16 \times 1690)$$

$$a = 3180$$

$$\text{Therefore } y = 3,180,000 + 7160x$$

ii) **Use the regression method – determine the overhead cost function**

$$y = a + bx \text{ where } a = 3,709,000$$

$$b = 6487$$

$$\text{Therefore } y = 3,709,000 + 6487x$$

iii) **Equivalent units of production**

**Looking at the output side using FIFO method**

		Completion %	Conversion
Opening stock (WIP)	1,000,000	70	700,000
Completely processed during production	500,000	100	500,000
Closing stock (WIP)	1,200,000		<u>1,199,695</u>
Equivalent units with respect to conversion costs			<u>2,399,695</u>

iv) **Estimate on cost for the month of November**

$$Y = 3,709,000 + 6487x \quad \text{where } x = 1125$$

$$\text{Therefore } y = 3,709,000 + 6487 \times 1125$$

$$= 11,006,875$$

## QUESTION SIX

a) **Explain characteristics of an effective report**

- (i) It should be relevant to the users needs - for the communicator this required the following:-
  - Identifying the users
  - Getting the purpose right
  - Getting the volume right
- (ii) It should be accurate within the users need, it should be correct and error free
- (iii) It should inspire the users confidence. The report should not give the user any reason to mistrust, disbelieve or ignore it
- (iv) It should be timely, it should be readily available within the time period which makes it useful
- (v) It must be appropriately communicated, the report will lose its value if its not clearly communicated to the users in a suitable format and through a suitable medium
- (vi) It should be cost effective.

b) **Explain four factors that management should take into consideration when making such a decision**

- (i) Whether there are alternative products which can be produced and their contribution
- (ii) Whether we can be able to increase the sales of remaining product due to dropping of one product

- (iii) Will the prices of the products go up or not in future?  
 (iv) Whether the quality of the products is good
- c) Site and contract work prevent particular difficulties for cost control and accurate cost accounting. Explain the problems that are likely to arise and how these problems can be minimized.

(i) **Determination of profits**

The methods exist for computing profits to be taken to profit and loss account. They are;

- **Percentage of completion method:** If some specified proportion of work has been done corresponding proportion of revenue should be recognized as earned. The profits will be based on the proportion of work that has been done since revenue earning process on a contract is continuous as work progresses throughout the contract period.
- **Completed contract method:** the method assumes that no revenue should be recognized as earned on contract until the contract is complete and accepted i.e. until all the costs are known. The profits will be taken to profit and loss account on completion of the contract.

(ii) **Valuation of work in progress**

Represents work being done on a contract. It is an incomplete contract currently being executed. It is represented in the books as a current asset under stock/work in progress. It is valued at cost and reduced by the cash reserved on the contract.

$$\text{WIP} = \text{Costs to date} + \text{credited profit} - \text{cash received}$$

(iii) **Progress payment**

Represents cash received on the account of the contract. It is that part of work certified that has been paid for by the contractee. The amount is used to reduce value of work done when valuing the work in progress for balance sheet purposes.

b) **Outline the procedure followed in implementing job costing**

Each job to be done must have its own records, that is a job card where all the costs incurred in its execution are to be recorded.

Material required for the job will be drawn from regular supply (stores) and appropriately valued for material costing purposes. If other materials are required i.e. special materials not in stores, they will be purchased and directly recorded to the jobs concerned. For labour, they are to be booked on the job on the basis of documents used for time booking. The labour should be appropriately charged to the job by applying the established labour payment rates.

Direct expenses incurred on the job example cost of job contracting should be charged to the job since they can be identified with that job. Overheads have to be charged to the job on the basis of pre-determined overhead absorption rate and the overheads will be absorbed to the job on the basis of units of a base of that specific job.

## QUESTION SEVEN

(ii) **Distinguish between cost accounting and financial accounting**

	<b>Management accounting</b>	<b>Financial accounting</b>
1. Users	Internal	External
2. Nature	Future	Historical
3. Detail	More detailed	Summarized
4. Legality	Not legal	Legal – compulsory
5. Format	Not standardized	Standard – accounting standards



(iii) **Explain advantages of a cost accounting system**

- a) It helps in cost ascertainment
- b) It helps in decision making
- c) It allows or ensures disclosure of waste
- d) It ensures cost control
- e) It ensures planning
- f) It enables the setting of selling prices
- g) It aids in policy formation
- h) It checks the accuracy of financial accounts if differences are revealed.
- i) It allows the organization to measure efficiency.

(iii) **What factors should be taken into consideration before setting up a cost accounting system**

- a) Preliminary investigation should be done relating to the technical aspects of the business e.g. method of production, nature of product etc
- b) Organizational structure should be studied to ascertain the scope of authority and where the head of cost accounting system will be incorporated
- c) Current methods of purchase, storage and issue of materials should be examined for the purpose of improving them
- d) Existing methods of labour remuneration should be examined for purpose of introducing incentives
- e) Forms and accounts records should be designed so as to involve minimal clerical labour and expenditure
- f) The system should be effective in cost control and cost reduction
- g) The factory size should be organized in an economical way
- h) Installation and operation of the system should be economical, i.e. cost should not outweigh the benefits
- i) The system must have effective internal control system

## SUGGESTED SOLUTIONS

## COST ACCOUNTING

December 2013

Time Allowed: 3 hours

## SECTION I

## QUESTION ONE

(a)

## CASH BUDGET FOR 3 MONTHS TO 31 MARCH 2006

	January Shs.	February Shs.	March Shs.
Cash balance b/f	8,400	(472,500)	(535,500)
<b>Receipts:</b>			
Sales: Cash	100,000	150,000	145,000
Debtors	375,000	255,000	300,000
Loan			2,500,000
Sale of machinery		250,000	
Total cash available	483,400	182,500	2,409,500
<b>Payments:</b>			
Purchases	480,000	464,000	464,000
Staff wages $\frac{3}{4}$	45,000	60,000	55,500
$\frac{1}{4}$	15,000	15,000	20,000
Sales commission	3,400	4,000	6,000
Overhead expenses	165,000	175,000	175,000
Machinery			1,200,000
Rent	240,000		
Taxes	3,500		
Proposed dividends	4,000		
Total payments	955,900	718,000	1,920,500
Cash balance c/f	(472,500)	(535,500)	489,000

## (b) BUDGETED PROFIT AND LOSS ACCOUNT FOR THE PERIOD TO 31 MARCH 2006

	Shs.	Shs.
Sales		1,580,000
<b>Less cost of goods sold</b>		
Opening stock	320,000	
Purchases	<u>1,408,000</u>	
	1,728,000	
Less: closing stock	<u>464,000</u>	<u>1,264,000</u>
Gross profit		316,000
<b>Expenses:</b>		
Rent	240,000	
Overheads (including depreciation)	590,000	
Staff wages	214,000	
Sales commission	<u>15,800</u>	<u>1,059,800</u>
Net loss		(743,800)
Retained profits b/d		<u>452,900</u>
Loss c/f		<u>(290,900)</u>

**(c) BUDGETED BALANCE SHEET AS AT 31 MARCH 2006**

	<b>Cost Shs.</b>	<b>Depreciation Shs.</b>	<b>Net Book Value Shs.</b>
Fixed assets	<u>2,950,000</u>	<u>275,000</u>	2,675,000
<b>Current assets:</b>			
Inventory		464,000	
Trade Debtors		885,000	
Cash and bank balances		<u>495,500</u>	
		1,838,000	
<b>Current liabilities</b>			
Trade creditors	28,000		
Accrued expenses	<u>25,900</u>	<u>53,900</u>	<u>1,784,100</u>
			<u>4,459,100</u>
<b>Financed by:</b>			
Ordinary share capital			1,000,000
Share premium			500,000
Retained profits			(290,900)
Long term liabilities			
Loans			<u>3,250,000</u>
			<u>4,459,100</u>

**Workings:**

Accrued expenses = 20,000 – 15,000 – 3,400 + 5,800 + 18,500 = 25,900 (8 marks)

**(Total: 20 marks)**

**QUESTION TWO**

- (a) (i) Mixed costs are costs that change in total amount when the volume of activity changes, but not in direct proportion. They are neither fixed nor variable for they contain fixed cost and variable cost components. They are also called semi-fixed or semi-variable costs. (3 marks)
- (ii) Cost behaviour refers to the way in which a cost changes in relation to changes in activity level. It describes how the costs of activity inputs change with respect to changes in activity levels. Thus, variable costs change in direct proportion to changes in volume whereas fixed costs remain constant. Some types of fixed costs would however take the characteristics of both variable and fixed components only changing at different levels of activity. An example of semi-fixed cost are salaries paid to supervisors. (3 marks)
- (iii) Incremental cost is defined as the difference in total cost between two alternatives in a decision. Incremental cost is directly affected by the outcome of the decision.

It is that additional cost that management decides to choose whether to incur or not while planning for the future. (2 marks)

- (b) (i) **Variable costs per kilometer**  
**100,000 km – August**

$$\text{Tyres} \quad \frac{100,000}{25,000} \times 48,000 = 192,000$$

$$\text{Maintenance costs} \quad \frac{100,000}{5,000} \times 15,000 = 300,000$$

$$\begin{array}{rcl} \text{Replacement of spare parts} & \frac{100,000}{5,000} \times 8,000 = & \underline{160,000} \\ & & \underline{652,000} \end{array}$$

$$\begin{array}{rcl} \text{Variable costs per kilometer} & = & \frac{652,000}{100,000} \\ & = & \text{Shs. 6.52 per km} \end{array}$$

$$\begin{array}{rcl} + \text{fuel } \frac{60}{20} & & \underline{3.00} \\ & & \underline{9.52} \text{ per kilometer} \end{array}$$

25,000 km – September

$$\text{Tyres} \quad \frac{25,000}{25,000} \times 48,000 = 48,000$$

$$\text{Maintenance costs} \quad \frac{25,000}{5,000} \times 15,000 = 75,000$$

$$\begin{array}{rcl} \text{Replacement of spare parts} & \frac{25,000}{5,000} \times 8,000 = & \underline{40,000} \\ & & \underline{163,000} \end{array}$$

Variable costs per km

$$\frac{163,000}{25,000} = 6.52$$

$$\begin{array}{rcl} \text{Fuel } \frac{60}{20} & & \underline{3.00} \\ & & \underline{9.52} \text{ per kilometer} \end{array}$$

50,000 km – October

$$\text{Tyres} \quad \frac{50,000}{25,000} \times 48,000 = 96,000$$

$$\text{Maintenance costs} \quad \frac{50,000}{5,000} \times 15,000 = 150,000$$

$$\begin{array}{rcl} \text{Replacement of spare parts} & \frac{50,000}{5,000} \times 8,000 & \underline{80,000} \\ & & \underline{326,000} \end{array}$$

$$\text{Variable cost per km} = \frac{326,000}{50,000} = 6.52$$

$$\begin{array}{rcl} \text{Fuel} & = & \frac{60}{20} \\ & & \underline{3} \\ & & \underline{9.52} \text{ per km} \end{array}$$

$$\begin{array}{rcl} \text{(ii) Annual depreciation} & & \\ = & \frac{12,000,000 - 2,000,000}{4} & \end{array}$$

= Shs. 2,500,000

Fixed operating expenses per year

	Shs.
Depreciation	2,500,000
Insurance premium	400,000
Annual road licence	<u>12,000</u>
	<u>2,912,000</u>

Fixed costs per km at various levels

August	-	<u>2,912,000</u> 100,000	=	Shs. 29.12 per km
September	-	<u>2,912,000</u> 25,000	=	Shs. 116.48 per km
October	-	<u>2,912,000</u> 50,000	=	Shs. 58.24 per km

(iii) Operating costs per km

	100,000 km	25,000 km	50,000 km
Variable costs per km	9.52	9.52	9.52
Fixed costs	<u>2.43</u>	<u>9.71</u>	<u>4.85</u>
Total cost per km	<u>11.95</u>	<u>19.25</u>	<u>14.37</u>

(c) Fixed costs are really variable costs:

Fixed costs can be seen to be variable because:

1. The fixed costs per unit is not fixed and will vary with changes in the levels of production although inversely.
2. The total fixed costs will only be fixed within reasonable levels of activity or within a short time otherwise they will also change.
3. Fixed costs will be dependent on some decisions and therefore they are not actually fixed.
4. Practically some costs are not purely fixed or purely variable. (4 marks)

(Total: 20 marks)

### QUESTION THREE

(a) (i)

#### Profit statement (marginal costing)

	Phase A		Phase B	
	Shs. „000“	Shs. „000“	Shs. „000“	Shs. „000“
Sales		3,600		4,350
<b>Variable costs</b>				
Production	1,875		2,250	
Opening stock	-		75	
Closing stocks	<u>(75)</u>	<u>(1,800)</u>	<u>(150)</u>	<u>2,175</u>
Gross margin		1,800		2,175
Variable expense		<u>(480)</u>		<u>(580)</u>
		1,320		1,595
Fixed costs: Production		<u>(600)</u>		<u>(600)</u>
Expenses		<u>(480)</u>		<u>(480)</u>
Net profit		<u>240</u>		<u>515</u>

**Workings:**

Sales	2,400 x 1,500	=	3,600,000
	2,900 x 1,500	=	4,350,000

Production	<u>Variable costs</u>	<u>3,000,000</u>	=	750
	Unit	4,000		

Cost	750 x 2,500	=	1,875,000
	750 x 3,000	=	2,250,000

**Expenses**

Per unit	<u>800,000</u>	=	200
	4,000		

Cost	200 x 2,400 = 480,000
	200 x 2,900 = 580,000

Stocks	100 x 750 = 75,000
	200 x 750 = 150,000

Fixed costs – 1,000,000 x 1.2 = 1,200,000

$$\frac{1,200,000}{2} = 600,000$$

Fixed expenses 800,000 x 1.2 = 960,000

$$\frac{960,000}{2} = 480,000$$

(ii)

**Profit statement (absorption costing)**

	Phase A		Phase B	
	Shs. „000”	Shs. „000”	Shs. „000”	Shs. „000”
Sales		3,600		4,350
<u>Production costs</u>				
Variable	1,875		2,250	
Fixed	<u>625</u>		<u>750</u>	
	2,500		3,000	
Opening stock	-		135	
Closing stocks	<u>(135)</u>	<u>(2,365)</u>	<u>(270)</u>	<u>(2,865)</u>
		1,235		1,485
Expenses: Variable		(480)		(580)
Fixed		<u>(480)</u>		<u>(480)</u>
		275		425
Fixed overhead over/		<u>25</u>		<u>150</u>
(under) absorbed		<u>300</u>		<u>575</u>

**Workings:**

$$1. \quad \text{Overhead absorption rate} = \frac{1,000,000}{4,000} = 250$$

Absorbed Overhead	250 x 2,500 = 625,000
	250 x 3,000 = 750,000

2. Stocks cost per unit  $750 + 600 = 1,350$   
 $1,350 \times 100 = 135,000$   
 $1,350 \times 200 = 270,000$  (6 marks)
- (b) Difference in profits is caused by the valuation of stocks where in absorption costing system stocks are valued at the total production cost while in marginal costing system, stocks are valued at the variable production cost. The higher value of closing stocks reduces costs released in the current period, thereby increasing reported profits. (2 marks)
- (c) Reconciliation statement

	Shs.	Shs.
Profit as per marginal costing	240,000	515,000
Stock differences (135,000 – 75,000)	<u>60,000</u>	<u>60,000</u>
Profit as per absorption costing	<u>300,000</u>	<u>575,000</u>

- (a) For the above company absorption costing give a higher profitability than the marginal costing method. Generally having regard to the factors affecting the organization the accountant makes a judgment as to which technique is more appropriate. Absorption costing is based on financial accounts. Marginal costing system is usually used in the routine cost ascertainment procedures. Marginal costing principles are used in planning and decision making. (4 marks)

**(Total: 20 marks)**

#### QUESTION FOUR

- (a) Overhead allocation (Direct method)

	Production departments		Support departments	
	Grinding Shs.	Assembly Shs.	Maintenance Shs.	Power Shs.
Direct costs	1,000,000	500,000	1,000,000	2,000,000
Maintenance	500,000	500,000	(1,000,000)	-
Power	<u>1,600,000</u>	<u>400,000</u>	-	<u>(2,000,000)</u>
	<u>3,100,000</u>	<u>1,400,000</u>	<u>-</u>	<u>-</u>

- (b) Overhead Allocation Rate =  $\frac{3,100,000}{10,000} = \text{Shs. } 310/\text{machine hour}$  i.e. Maintenance Department.

#### Job K cost statement

	Shs.
Prime cost	670
Overhead (3 x 310)	<u>930</u>
Total unit cost	<u>1,600</u>

∴ Bid price Shs.  $1,600 \times 1.2 = \text{Shs. } 1,920$  (3 marks)

- (c) Overhead allocation (sequential method)

	Production departments		Support departments	
	Grinding Shs.	Assembly Shs.	Maintenance Shs.	Power Shs.
Direct costs	1,000,000	500,000	1,000,000	2,000,000
Power department	1,280,000	320,000	400,000	(2,000,000)
Maintenance department	<u>700,000</u>	<u>700,000</u>	<u>(1,400,000)</u>	<u>-</u>
	<u>2,980,000</u>	<u>1,520,000</u>	<u>-</u>	<u>-</u>

- (d) Maintenance department Overhead Allocation Rate =  $\frac{2,980,000}{10,000}$  = Shs. 298 per machine hour.

**Job K cost statement**

	Shs.
Prime cost	670
Overhead (3 x 298)	<u>894</u>
	<u>1,564</u>

∴ Bid price Shs. 1,564 x 1.2 = Shs. 1,876.80

- (e) Problems exist in setting overhead cost standards in three important areas, namely; setting cost standards, selecting a standard overhead rate and determining the standard volume for fixed overhead cost recovery.

The setting of cost standards implies that resources have been acquired at the best price and that they have been used in the most efficient manner. Since overheads costs are not directly related to products, the problem is selecting a measurement of activity that can be used as a surrogate for the output expressed as product volume.

The selection of a standard overhead rate depends on which measurement of activity should be used. Also, fixed overhead costs, unlike variable overhead costs, do not vary with output. (3 marks)

- (f) Cost allocation is the allotment of whole items of cost. Cost apportionment is the sharing of a common cost amongst cost centres. (4 marks)

**Workings**

MMC Ltd.

- (a) Power cost allocated according to maintenance hours  
 $6,400 + 1,600 = 8,000$   
 $\frac{6,400}{8,000} \times 2,000,000 = 1,600,000$   
 $\frac{1,600}{8,000} \times 2,000,000 = 400,000$
- (b) Maintenance cost  
 Maintenance cost allocated according to employees  
 $30 + 30 = 60$



$$\frac{30}{60} \times 1,000,000 = 500,000$$

$$\frac{30}{60} \times 1,000,000 = 500,000$$

(c) Power

Apportioned according to machine  
hours 2,000 + 6,400 + 1,600 = 10,000

$$\frac{2,000}{10,000} \times 2,000,000 = 400,000 \Rightarrow \text{Maintenance}$$

$$\frac{6,400}{10,000} \times 2,000,000 = 1,280,000 \Rightarrow \text{Grinding}$$

$$\frac{1,600}{10,000} \times 2,000,000 = 320,000 \Rightarrow \text{Assembly}$$

Maintenance – Allocated according to number of employees

$$\text{Grinding} \quad \frac{30}{60} \times 1,400,000 = 700,000$$

$$\text{Assembly} \quad \frac{30}{60} \times 1,400,000 = 700,000$$

**QUESTION FIVE****STATEMENT OF PRODUCTION**

Input		Output		B	MAT	
O Wip	8,500	W.L	3,550	-	-	-
B	62,500	A.I	2,450	2,450	-	-
		O wip	8,500	-	8,500	47,000
		C.P.D.P	47,500	47,500	47,500	4,750
		C. wip	<u>9,000</u>	<u>9,000</u>	-	<u>6,750</u>
	<u>71,000</u>		<u>71,000</u>	<u>58,950</u>	<u>56,000</u>	<u>58,500</u>

**STATEMENT OF COST**

	B	MAT	CON
Costs	1,250,000	<u>750,400</u>	<u>491,000 + 0.5x491,000</u>
	58,950	<u>56,000</u>	<u>5 &amp; 500</u>
c/u	47.19	21.2	13.4

(b) **Direct materials cost and conversion costs.**

Direct material costs are added to the process at one time while all conversion costs are generally added to the process evenly through time. If, however, two different direct materials were added to the process at different points in time, two different direct materials categories would be needed to assign these costs to products.

(2 marks)

(b) **Application of the process costing material (features):**

1. Where the product of one process becomes the material of another process.
2. Where there is simultaneous product at one or more processes, of different products, with or without by products.
3. Where, during one or more processes or operations of a series, the products, or materials, are not distinguishable from one another, as, for instance, when finished products differ finally only in shape or form. (2 marks)

(c) (i)

Pakawa Ltd. Production cost report (process C) for month of October 2004				
Units flow	Units	Transferred in	Added material	Conversion costs
	Shs.	Shs.	Shs.	Shs.
Beginning work in progress	8,500			
Transferred in	<u>62,500</u>			
Units to account for	<u>71,000</u>			
Normal loss	3,550	-	-	-
Abnormal loss	2,450	2,450	-	-
Completed:				
From beginning work in progress	8,500	-	8,500	4,250
Started	47,500	47,500	47,500	47,500
Ending work in progress	<u>9,000</u>	<u>9,000</u>	<u>-</u>	<u>6,750</u>
Total units accounted for	<u>71,000</u>			
Equivalent units of work done:		58,950	56,000	58,500
Cost flow:				
Beginning work in progress	226,750			
Current costs	<u>2,736,900</u>	<u>1,250,000</u>	<u>750,400</u>	<u>736,500</u>
Total costs to account for	<u>2,963,650</u>	1,250,000	750,400	736,500
Divide by equivalent units		58,950	56,000	58,500
Cost per equivalent unit	47.19	21.20	13.40	12.59

Application of costs:

Completed and transferred:

From beginning work in progress 226,750.00

Costs to complete 53,507.50

Started and completed 2,241,525.002,521,178.50(ii) Abnormal loss valuation: Shs. 51,940 (2,450 x 21.20)

(iii) Ending work in progress valuation Shs.  
 Transfer in (9,000 x 21.20) = 190,800.00  
 Conversion (6,750 x 12.59) = 84,982.50  
 Total cost = 275,782.50

(3 marks)

(d) (i) Evaporation, residuals

(ii) Unavoidable handling, breakage and spoilage losses.

(iii) Withdrawal for testing and inspection.

(3 marks)

**(Total: 20 marks)****SECTION II****QUESTION SIX**

- (a) 1. Establish the sales budget. This will depend on management policy, the suggested selling price, elasticity of demand and the nature of competition. It may also be influenced by the advertising and promotion budget.
2. Next comes the production budget. This will involve ensuring the availability of labour and materials, as well as adequate facilities.

3. Next is the expenditure budget which will depend on both the above budgets. Wages, advertising, selling and delivery expenses etc. will have to be estimated in the light of sales and production figures.
4. At this stage it will be necessary to ensure that there is sufficient finance to pay for the above and a cash budget must then be prepared.
5. Most budgeting systems also include a capital investment budget.
6. Compilation of a master budget and each responsible officer provided with a copy.

(b) Advantages of Zero Base Budgeting

1. It identifies and eliminates wastage.
2. It ensures that the best possible methods of performing jobs are used and that ideas are generated.
3. It should result in more efficient allocation of resources.
4. It increases communication with the organization.
5. It involves participation of management and should therefore motivate them.
6. The documentation of decision packages provides management with deep coordinated **knowledge of all the firm's activities**.
7. It makes manager more aware of the costs of input and helps them to identify priorities.

(6 marks)

Disadvantages of Zero Base Budgeting

1. The costs of preparing a vast number of decision packages in a large firm is very high.
2. A large volume of additional paper work is created.
3. Managers feels threatened by it.
4. The ranking of decision packages and allocation of resources is subjective to a certain degree and can give rise to departmental conflict.
5. Despite increased participation, a large volume of information travels one way downwards.

(3 marks)

(c) (i) Problems of over-relying on accounting based performance appraisal techniques

1. Window dressing – the managers or departmental heads may try to falsify the accounts so as to project a favourable condition which may not have been achieved.
2. Budget slacks – since managers know that their performance will be based on the budgets they will tend to give low budget figures or standards which can be easily achieved with minimal efforts.
3. Dysfunctional consequences – in order to achieve favourable ratios, managers may not take into account or make sound decisions as replacing the assets in good time so as not to dilute returns on earnings.
4. They ignore other important areas like training, research and development which are important to a firms long term benefits.
5. Accounting measures do not take into account other qualitative features such as ability of the managers to learn more and cope with the co-workers.
6. Accounting measures do not take into account the prevailing economic conditions and as such their evaluation may not be accurate.
7. They will make the managers work without bringing in their personal initiatives.

- (ii) Management by exception is the practice of concentrating on areas not operating as expected such as a shortfall in sales of a product and giving less attention to areas operating as expected. Managers use information provided by variances to allocate their energies.

(2 marks)

(Total: 20 marks)

**QUESTION SEVEN**

- (a) Just in time (JIT) is defined as the constant pursuit for the elimination of waste. It has the aim of eliminating as far as possible all manufacturing and finished goods inventories. It does this by ensuring that nothing is made or processed that is not needed. Thus it is a demand pull manufacturing system. The implication for an organization using the JIT system involve total quality management, with a need to redesign plant layout, reschedule receipt of raw materials and the delivery of finished goods, as well as the redesign of the accounting system of the organization. (2 marks)
- (b) In order to ensure accurate annual stock taking results in organizations that do not maintain a perpetual inventory control system, the following procedures need to be followed:
1. Stock should be properly stored in separate bins to facilitate easy identification.
  2. Stores should be well arranged so that stock items are easily seen.
  3. A sound internal control and internal check system regarding custody and issue of stores should be in place.
  4. Written instructions should be given to the stock taker and these should be followed during stock-taking.
  5. Stock should be taken by persons other than the storekeeper or his staff.
  6. On stock taking day, the business should be closed to customers to avoid interruption during the stock taking.
  7. Cut-off procedures should be strictly followed.
  8. Stock taking should be undertaken in the presence of a senior official whose duties should have nothing to do with stores.
  9. One person should count stocks, calling out the quantities with another person doing the recording.
  10. Stock-sheets should be used and re-checked by another person for accuracy.
  11. Stocks belonging to third parties should be counted and listed separately.
- (c) (i) Standard cost – this is the planned unit cost of the products, components or services produced in a period. The standard cost may be determined on a number of bases. The main uses of standard costs are in performance measurement, control, stock valuation and in the establishment of selling prices. (2 marks)
- (ii)
1. It may be expensive and time consuming to install and to keep up to date.
  2. In volatile conditions with rapidly changing methods rates and prices, standards quickly become out of date and thus lose their control and motivational effects. This can cause resentment and loss of goodwill.
  3. There is research evidence to suggest that overly elaborate variances are imperfectly understood by line managers and thus they are ineffective for control purposes.
  4. Standard costing concentrates only on narrow range of financial factors but many other items are of importance e.g. quality, customer satisfaction.
  5. The underlying principles of standard costing i.e. that is standard established prior to a period is a satisfactory measure throughout the period and that performance is acceptable if it meets this standard is alien to the spirit of JIT manufacturing where JIT principles are adopted there is a climate of continuous improvement and the idea of normal levels of waste and efficiency is not accepted because there is a drive towards zero waste and every increasing efficiency. As a consequence it is possible that standard costing will become less useful in modern factories.

## Part III: Comprehensive Mock Examinations

### QUESTIONS - MOCKS

The following are three MOCK papers that address the major areas of the syllabus. It is recommended that candidates attempt the questions in an examination condition and then revise their answers using the suggested answers that follow.

**Instructions:**

Answer any FIVE questions. Note that marks allocated to each part of the question are shown at the end of the question.

Questions in this part are selected from across the topics in the entire syllabus. It will be important for the candidate to try and relate the questions to the appropriate topic or sub-topic of the syllabus.

Each question carries a total of 20 marks.

Time Allowed: 3 hours

## PAPER 1

**Time Allowed: 3 hours**

**Answer any FIVE questions. Marks allocated to each question are shown at the end of the question.**

### QUESTION ONE

Mjengo Builders has been engaged to construct a building to serve as the head office of Posta Sacco Kenya. Construction work commenced on 1<sup>st</sup> July 2002 and the following information was extracted from Mjengo Builders accounting books for the year ended 30 June 2003:

	Shs.
Contract price	1,500,000
Payment for direct wages	240,000
Accrued wages: 30 <sup>th</sup> June	101,000
Materials issued	275,000
Materials returned to store	2,500
Plant and equipment on 1 <sup>st</sup> July	150,000
Installation costs	125,000
Payment for direct expenses	75,000
Direct expenses accrued: 30 June	5,000
Materials on site: 30 <sup>th</sup> June	100,000
Value of work certified	27,500
Cost of work not yet certified	800,000
Cash received	50,000
	750,000

**Required:**

- a) The contract account as it appears in the books of Mjengo Builders. (15 marks)
  - b) The valuation of work-in-progress (5 marks)
- (Total: 20 marks)**

### QUESTION TWO

Company XYZ Limited manufactures a product which passes through three processes. Given below is the data relating to the final process in the month of November:

	Shs
Transfer from process 2: 10,000 units	300,000
Materials	230,400
Labour	105,600
Overheads	50,400

The normal process loss is estimated at 2%. During the month of November, 7,200 units were completed and transferred to finished goods. In addition, 2,000 units remained as work-in-progress whose degree of completion was 60% for materials, labour and overheads. The selling price of normal loss units is estimated at Sh 30 per unit.

**Required:**

- a) Calculate the cost of the completed units transferred to finished goods. (10 marks)
- b) Calculate the value of work-in-progress at end of November. (5 marks)

- c) Assuming that any units of normal or abnormal loss were sold at a price of Shs 30 per unit, show the abnormal loss account as it would appear after the units are sold. Assume that abnormal loss units are complete in all respects. (5 marks)  
(Total: 20 marks)

**QUESTION THREE**

- a) Explain five major features of contract accounting. (10 marks)  
b) A company has fixed costs of Shs 5,800,000 and a contribution margin ratio of 45.5%. The selling price per unit is Shs 100. Compute the break-even point. What effect would an increase of the contribution margin to 60% have on the BEP? (Show supporting calculations) (10 marks)  
(Total: 20 marks)

**QUESTION FOUR**

- a) Distinguish between normal and abnormal loss in process accounts. (5 marks)  
b) Explain the concept of equivalent units in process accounts. (5 marks)  
c) STATE three types of standards that can be used in the design of a standard costing system. (6 marks)  
d) STATE four causes of unfavourable material usage variance. (4 marks)  
(Total: 20 marks)

**QUESTION FIVE**

The following data has been obtained from the records of Kings Company for the year ended 31<sup>st</sup> March 2003:

	Shs „000“	Nature of Cost
Sales	12,000	
Sales commission	600	Variable
Local taxes on factory premises	12	Fixed
Insurance on factory premises and equipment	2.4	Fixed
Administrative salaries	600	Fixed
Shipping expenses	360	Variable
Factory leasehold expenses	120	Fixed
Factory supervisory salaries	156	Fixed
Insurance on office equipment	125	Fixed
Depreciation on plant and equipment	360	Fixed
Direct materials	4,800	Variable
Direct labour	2,600	Variable
Depreciation on office equipment	18	Fixed
Other general and administrative expenses	75	Fixed
Indirect labour	960	Variable
Other factory overheads	200	Variable
Production and sales for the year: 100,000 units of output		

**REQUIRED:**

Draft the company's profit and loss statement using the marginal costing approach. (20 marks)

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**SECTION II****QUESTION SIX**

- a) With reference to C-V-P analysis, clearly distinguish between cost Volume Profit analysis and Break-even Point Analysis. (10 marks)
  - b) What assumptions underlie the C-V-P Analysis? What is their effective implication? (10 marks)
- (Total: 20 marks)**

**QUESTION SEVEN**

- a) Explain four reason why coding of new materials and other stocks utilized by a company's production department is important. (8 marks)
  - b) Identify and briefly explain six characteristics that a reliable coding system should possess. (12 marks)
- (Total: 20 marks)**



## PAPER 2

**Time Allowed: 3 hours**

**Answer any FIVE questions. Marks allocated to each question are shown at the end of the question.**

### QUESTION ONE

- a) Explain the meaning of the following terms in regard to the cost and financial accounting systems:
- i) Integrated cost accounts
  - ii) Interlocking cost accounts
  - iii) Cost ledger control account
  - iv) Cost ledger contra account
- (12 marks)
- b) The profit shown in the financial accounts of MRM Co Ltd for the year ended 31<sup>st</sup> December 2002 is Shs 18,592,000. The cost accounts for the same period reflected a profit of Shs 20,496,000. Comparison of the two set of accounts revealed the following:

<u>Stock Valuations</u>	Cost Accountants	Financial Accountants
Raw Materials	Shs „000“	Shs „000“
Opening stock		7,529
Closing stock	5,483	5,128
<u>Finished goods</u>		
Opening stock	13,291	12,905
Closing stock	11,430	11,131

Dividends and interests received of Shs 500,000 and Shs 52,000 respectively were reflected in the financial accounts. The company disposed a production machine costing Shs 5 million for Shs 0.25 million. It had been depreciated to the extent of Shs 3 million.

### REQUIRED

Prepare a reconciliation for the cost and financial profits for the period. (8 marks)

### QUESTION TWO

Dynamic Limited manufactures three products X, Y and Z. All the three products pass through a common finishing section whose total machine time is 3000 hours per month. The time requirement in finishing section for each products X, Y and Z is 20 minutes, 10 minutes and 15 minutes respectively.

The company employs budgetary control and the following is the monthly sales budget which can be considered relatively stable:

<u>Product:</u>	Sales Revenue Budget	
X:		648,000
Y:	05,000	805,000
Z:		960,000
		2,413,000

The price structure relating to each product is set out below:

Particulars	Product: X	Y	Z
Raw materials	50	80	100
Direct labour	30	70	50
Fixed overheads	60	30	50
Profit margin	40	50	40
Selling price	180	230	240

Four of the available machines in the finishing section have recently been destroyed by fire limiting the available machine hours to 2,100 hours which is not enough to meet the normal products demand. The replacement of these machines will need at least 18 months.

Meanwhile, the company has decided as a matter of policy to produce at least 2,000 units of each product so as not to lose the market contact while utilizing the balance of the machine capacity in the most profitable manner.

However, in no case would production of any product exceed the previous production level which was determined by the existing market demand.

**Required:**

- The quantities of each product that the company should produce each month under the current market conditions so as to meet the requirements of its policy.
- The revised budgeted profit in Units and monetary values.
- The original budgeted profit in units and monetary values.
- What is the effect of the company's policy on its profitability? Comment on the adequacy of this policy in a highly competitive market.

**QUESTION THREE**

Eagle Construction Company Ltd won the contract for building the Accountancy School extension of KASNEB PANEL at a cost of Sh 120 million. For the Company's financial year ended 31<sup>st</sup> March 2003, the following information is available:

	Shs „000"
Material issued to the site	21,500

Cost of labour	3,600
Plant installed	18,000
Direct expenses	4,800
Administration changes (general)	1,750
Materials returned to stores	2,500
Work certified	25,000
Cost of work not certified	7,000
Closing stocks of materials	2,000
Accrued expenses (wages)	300
Value of plant on 31 <sup>st</sup> march 2003	12,000
Payments from the college	20,000

**REQUIRED:**

- a) Prepare the:
- Contract account (10 marks)
  - Contractee's account (5 marks)
  - Computation to show the profit or loss to be taken to the company's income statement for the year. Explain why you have used the method you have adopted. (5 marks)

**QUESTION FOUR**

The data below relates to operations of XYZ Ltd, a manufacturing company that employs normal job costing. All jobs pass through the company's two departments, preparation and finishing.

	PREPARATION DEPARTMENT	FINISHING DEPARTMENT
Direct Materials	600,000	60,000
Direct labour	480,000	120,000
Factory overheads	240,000	180,000
Direct labour hours	120,000	45,000
Machine hours	60,000	30,000

The following information relates to job No. 31 undertaken by the company during the year:

	PREPARATION DEPARTMENT	FINISHING DEPARTMENT
Direct Materials	60,000	120,000
Labour (Direct)	24,000	18,000
Factory overheads	240,000	180,000
Direct labour hours	25,000	1,600
Machine hours	20,000	2,000

The company employs the same overhead absorption method in the two departments.

**REQUIRED:**

- a) Using the direct labour hours and machine hours as the overhead absorption basis in each of the two departments, compute the cost for the job. Comment on your results. (16marks)

- b) What basic criteria guides the choice of an appropriate overhead absorption method in job costing? (4 marks)

### QUESTION FIVE

A company manufactures small assemblies to order and has the following budgeted overheads for the year, based on normal activity levels:

Department	Budgeted overheads	Overhead Absorption Base
Blanking	8,000	1,500 labour hours
Machining	23,000	2,500 machine hours
Welding	10,000	1,800 labour hours
Assembly	5,000	1,000 labour hours

Selling and administrative overheads are 20% of factory cost. An order for 250 assemblies type 3RR made as Batch B3RR incurred the following costs:

Materials: Shs 3,107.

Labour: 128 hours at the blanking shop at Shs 2.25 per hour.

452 hours at the Machining shop at Shs 2.50 per hour.

90 hours at the Welding shop at Shs 2.25 per hour.

175 hours at the Assembly shop at Shs 1.80 per hour.

Sh 525 was paid for the hire of a special equipment for testing the batch items. After the direct labour time in the machining department, the batch spent an extra 191 hours in the department undergoing special treatment, which incurred overheads at the normal rate.

### REQUIRED:

Compute the batch cost and profit as well as the unit cost and profit. (20 marks)

### SECTION II

### QUESTION SIX

With reference to accounting for overheads in the cost centers of an organization, explain the relevance of Activity Based Costing (ABC) in allocating costs to products. (20 marks)

### QUESTION SEVEN

- a) Explain 5 basis of overhead absorption (10 marks)
- b) (i) Explain the relevance of Materials Requisition Planning in Stock Management. (6 marks)

(Total: 20 marks)

**PAPER 3****Time Allowed: 3 hours****Answer any FIVE questions. Marks allocated to each question are shown at the end of the question.****QUESTION ONE**

Njoro Limited has been manufacturing and selling three products in Nairobi. The market demand for the products on average has been as follows:

<b>PRODUCT</b>	<b>Demand Per Year in units.</b>
Coolo:	20,000
Besto:	25,000
Zedo:	48,000

The manufacture of the products require machine time as follows:

<b>PRODUCT</b>	<b>Time required (Minutes).</b>
Coolo:	30
Besto:	45
Zedo:	20

The following details are available for each of the products:

	<u>Coolo:</u>	<u>Besto:</u>	<u>Zedo:</u>
	<u>Shs</u>	<u>Shs</u>	<u>Shs</u>
Direct Materials	15	12	14
Direct Labour.	25	20	23
Variable Overheads.	5	3	6
Fixed Overheads.	7	5	8
Profit per unit.	8	8	8
Selling Price.	60	48	59

You are also informed that one of the machines has broken down. Due to the nature of the expertise required to repair it, the company management thinks it might take the next one year to have it repaired. Alternatively, the company could purchase a new machine, but due to the high capital investment required, it will take at least the same time as that required to repair the machine. The remaining can only provide a maximum of 30,000 machine hours per annum.

**REQUIRED:**

- Advise the management on the ranking of the production of the products. (9 marks)
- Advise the management of the most profitable product mix. (3 marks)
- Determine the resultant net profits from the mix in (b) above. (8 marks)

**Total: (20 marks)**

**QUESTION TWO**

A retail company has been reviewing the adequacy of its stock control systems and has identified three products for investigation. The relevant details for the three products are set out below:

Item code	EOQ	Stock in the warehoused stores		Weekly sales Shs. „000“		
	„000“ units	„000“ units	Shs/unit cost	Minimum	Normal	Maximum
A	25	32.5	2.25	26	28	30
B	500	422.7	0.36	130	143	160
C	250	190	0.87	60	96	128

The management accountant has provided you with the following additional information:

- i) The gross margin of products A, B and C are 42, 46 and 37. The company policy is to express the gross margin as a percentage of sales.
- ii) There are six trading days a week. A trading year has 52 weeks.
- iii) **All orders are delivered by suppliers into the retailer's central warehouse.** The lead-time is one week from the placement of order. A further week is required by the retailer in order to transfer stock from the central warehouse to stores. Both of these lead times can be relied on.
- iv) The information produced above represents the expected occurrence of demand and costs.
- v) An order for item C for 250,000 units was placed 2 days ago.

**REQUIRED:**

- a) Calculate for each product:
  - i) The minimum and maximum weekly sales units. (6 marks)
  - ii) The stock-re-order level. (3 marks)
  - iii) The maximum stock level. (3 marks)
- b) Comment upon the adequacy of the existing stock control of the three products. (8 marks)

**(Total: 20 marks)**

**QUESTION THREE**

Explain the following terms as used in CVP analysis:

- i) Break-even charts.
- ii) Variable cost ratio.
- iii) Contribution Margin ratio.
- iv) Margin of safety.
- v) Profit-volume ratio.
- vi) Marginal income ratio. (6 marks)

A company has the following costs:

Employee salaries.	17,000
Rent.	11,000
Insurance.	2,000
Depreciation on equipment.	6,000
Variable costs: Labour	24,000
: Materials	16,000
: Direct Expenses	2,000
: Overheads	2,000

Additional information:

- i) The selling price per unit is Shs. 10. The above variable costs relate to activity level of Shs. 60,000 sales.
- ii) All other costs except those indicated as variable are fixed.

**REQUIRED:**

- Calculate the break-even point in units and sales. (2 marks)
- Calculate the cash flow break-even point in units and sales. (2 marks)
- What is the importance of depreciation tax shield in break-even analysis? (3 marks)
- Assuming tax rate of 48%, what is the Cash flow break-even point in units and sales. (4 marks)
- Comment on your observation. (3 marks)

(Total: 20 marks)

## QUESTION FOUR

- a) In your opinion, is it acceptable to declare profit on uncompleted contracts? Support your opinion. (2 marks)
- b) On May 2<sup>nd</sup> 2001, Mugoya Construction Company was contracted by Alliance Hotels to construct a new accommodation unit at their Mombasa Beach Hotel at a total contract price of Shs. 950,000,000.

Work commenced on the contract on 28<sup>th</sup> July 2001. Retention money was agreed at 10% of the work certified. At the end of the first year, no profit was declared as the contract was considered to be in its infancy.

The following information relates to the contract for the year ended 31<sup>st</sup> December 2002:

	Shs. „000
Balance brought forward on 1 <sup>st</sup> January 2002:	
Materials on site:	4,500
Accrued wages:	1,250
Plant (cost):	150,000
Cost of work done:	158,200
Work certified to 31 <sup>st</sup> December 2001	160,000
 Transaction during the year:	
Material delivered to site: from stores	14,600
: from other suppliers	128,400
Additional Plant (cost)	120,000
<b>Subcontractors' fees</b>	<b>18,450</b>
Consultancy fees	28,000
Inspection fees	500
Salaries and Wages	160,000
Head Office expenses	1,200
Materials transferred out	15,000
Materials sold (cost 19, 800) 22	22
Plant hiring charges	250
Direct Expenses	2,600

**Additional Information:**

- i) The company policy is to take the current year's profit and loss account the whole of the profit realized.
- ii) Plant is depreciated at 12% per annum on cost. It is a practice of the company accountants to reflect only the plant values changed and carried forward in the contract account.
- iii) Alliance Hotels had paid Shs 580 million to Mugoya Construction Company by 31<sup>st</sup> December 2002.
- iv) The work certified in the year 2002 was for Shs, 660 million.
- v) These was work done in the year but not yet certified costing Shs. 42,000.
- vi) At the year ended, accrued wages were for Shs. 2.8 million while the balances of materials on the site were valued at Shs. 51 million.

**REQUIRED:**

- i) Contract Account for the year to 31<sup>st</sup> December 2002, showing clearly the profits or losses on the contract for the work done to date. (10 marks)
- ii) Valuation of the work in progress. (4 marks)
- iii) The contractee's account, (4 marks)

**(Total: 20 marks)****QUESTION FIVE**

Majimoto Limited manufactures and sells one type of furniture item. The standard production costs of this item are as follows:

Direct Material:	<u>Shs</u>
Material x – 25 metres @ Shs 1/meter	25
Material y – 10kg @ Shs 4/meter	40
Labour	
Direct labour – 10 hours @ Shs 12.50/hr	125
Overheads	
Variable: Shs 2.5/hr	25
Fixed: Shs 3/hr	30

The overhead is absorbed on the basis of direct labour hours. The budgeted production for the year was 3,500.

During the year ended 31<sup>st</sup> December 2002, 4,000 units of output were produced and the actual costs were as follows:

Direct material:

	<u>Shs</u>
Material x: 96,000metres:	86,400
Y: 31,500kg	124,425
Labour: Direct Labour: 31,000hrs:	410,750
Overhead: Fixed:	151,060
Variable:	143,800



**REQUIRED:**

- a) Calculate the following variances:
- i. Material price and usage variances. (4 marks)
  - ii. Labour rate and efficiency variances. (4 marks)
  - iii. Total variable overhead variances. (4 marks)
  - iv. Fixed overhead volume variances. (4 marks)
- b) Comment on the company's usage of raw materials and labour. Also briefly comment on the price variances of materials. (4 marks)

**(Total: 20 marks)****QUESTION SIX**

- a) What is the basic difference between account classification method and high-low method as applied in cost estimation? (4 marks)
- b) Distinguish between the following terms as used in costing:
- i) Direct and indirect costs. (4 marks)
  - ii) Cost center and cost unit. (4 marks)
  - iii) Joint Products and by-products. (4 marks)
  - iv) Period costs and product costs. (4 marks)

**(Total: 20 marks)****QUESTION SEVEN**

What are the main duties of a budget committee? (8 marks)

What is meant by the term "critical success factor" (CSF) as used in the budgeting process?

(2

marks) Identify and briefly explain five critical success factors that you may encounter during the budgeting process. (10 marks)

**(Total: 20 marks)**

## PAPER 4

### QUESTION ONE

With reference to accounting for overheads in the cost centers of an organisation, explain the relevance of activity based costing (ABC) in allocating costs to products. (20 marks)

### QUESTION TWO

Garnex Limited has 3 productive department; namely:

Forming  
Machines  
Assembly

The company also has two service departments; namely:

Maintenance  
General

The following is an analysis of the budgeted overhead costs for a 12-month period:

	Sh.	Sh.
Rent and rates	8000	
Power	750	
Light and heat	<u>5000</u>	13,750

Repair and maintenance costs allocated to:

Forming	800	
Machines	1800	
Assembly	300	
Maintenance	200	
General	<u>100</u>	3,200

Departmental Expenses:

Forming	1500	
Machines	2300	
Assembly	1100	
Maintenance	900	
General	<u>1500</u>	7,300

Depreciation

Plant	10,000
Fixtures and fittings	250

Insurance:

Plant	2,000
Buildings	500

Indirect labour

Forming	3000
Machines	5000

Assembly	1500	
Maintenance	4000	
General	2000	<u>15,500</u>
		<u>52,500</u>

Other data available include the following:

Department	Floor Area (Square ft)	Plant Value	Fixtures & Fittings	Effective House Power	Direct Costs for the year	Labour hours for the year	Machine hours worked
Forming	2000	25000	1000	40	20500	14400	12000
Machines	4000	60000	500	90	30300	20500	21600
Assembly	3000	7500	2000	15	24200	20200	2000
Maintenance	500	7500	1000	5	-	-	-
General	500	-	500	-	-	-	-
	<u>10000</u>	<u>100000</u>	<u>5000</u>	<u>150</u>	<u>75000</u>	<u>55100</u>	<u>35600</u>

Required:

Using the above information, apportion the overheads (in a tabular form) to the five departments. (20 marks)

### QUESTION THREE

- (a) Explain 5 basis of overhead absorption. (10 marks)
- (b) (i) What is a JIT system of stock management? (4 marks)
- (ii) Explain the relevance of Materials Requisition Planning in stock management. (6 marks)
- (Total: 20 marks)**

### QUESTION FOUR

The following data relates to Mugoiya Construction Company for the year ended December 31<sup>st</sup> 2003.

Contract No.1104	Sh.
Wages paid	42,156
Materials delivered to site	54,203
Materials delivered from main stores	657
Materials taken to contract 1105	1,590
Plant purchased	12,500
Plant transferred to contract 1106	5,250
Sub-contractors charges	19,580
Site expenses	5,086
Materials on site on 31 December 2003	18,300
Cost of plant at year end	14,750
Prepayments at 31 December 2003	507
Accrued wages at year end	921
Work in progress not certified at year end	7,250
Head Office charges are 10% of wages	

#### Additional Information:

- The contract value is Sh.550,000 and it is anticipated that there will be further costs of Sh.375,000, including guarantee and rectification claims.

2. No profit has so far been recorded by the company.
3. The company takes a proportion of the estimated contract profit to the general profit and loss account. This proportion is determined by the extent of costs incurred by the contract to the date of computing the profit.

**REQUIRED**

- (a) Prepare the contract account as per the data given above (15 marks)
- (b) Assume that the value of work certified by the architect is Sh.137,500 and that the client had made progress payments of this amount less 15% retention. Also assume that the company uses the traditional method of calculating its profits. Calculate:
  - (i) The profit taken to the general profit and loss account
  - (ii) The profit suspended (5 marks)

Note: show all your workings.

**(Total: 20 marks)**

**QUESTION FIVE**

- (a) Explain the following terms fully as used in process costing:
  - (i) Normal loss
  - (ii) Abnormal loss
  - (iii) Equipment units. (6 marks)
- (b) The following information relates to process 3, which receives inputs from Process 2, in Mighty Products Limited:

<b>DETAILS</b>	<b>Shs.</b>	<b>Units</b>
Transfers in from Process 2	300,000	10,000
Materials added, referred to as material 2	230,000	-
Labour costs:		
Direct	50,000	40 hrs
Indirect	55,600	60 hrs
Overheads	50,400	-

During the period the above costs were incurred, 7,200 units of finished goods were transferred to stores. Normal loss is expected at 2% of all inputs.

The closing work in progress was 2000 units, which were 60% complete in all the relevant aspects. Material 2 is added at the beginning of the process.

Normal losses are complete in all aspects. They were sold for Sh.6,000.

There was no opening work in progress.

**Required:**

- (i) A process account (3 marks)
- (ii) The production statement (8 marks)
- (iii) The valuation of the closing work in progress (2marks)
- (iv) An abnormal loss account. (1 mark)

**(Total: 20 marks)**

**ANSWERS - MOCKS**  
**SUGGESTED ANSWERS TO MOCK EXAMS**  
**PAPER 1**

**QUESTION ONE****a) MJENGO BUILDERS: CONTRACT ACCOUNT**

	Shs.		Shs.
Direct wages	240,000	Material returns	2,500
Accrued wages	10,000	Plant & equipment value c/d	100,000
Materials issued	275,000	Materials closing stock	27,500
Plant & equipment	150,000	Cost of work done c/d	750,000
Installation costs	125,000		
Direct expenses	75,000		
Accrued direct expenses	5,000		
	880,000		880,000
Cost of work done b/d	750,000	Value of work certified	800,000
Estimated profit c/c	100,000	Cost of work uncertified c/d	50,000
	850,000		850,000
To: P&L a/c	62,500	Estimated profit b/d	100,000
(100,000 x 2/3 x <u>750,000</u> )			
	800,000		
P & L Bal c/d	<u>37,500</u>		
	100,000		<u>100,000</u>
Cost of work uncertified b/d	50,000	P & L Balance b/d	37,500
Plant & Equipment balance b/d	100,000		
Materials b/d	27,500		

**b) Valuation of Work in Progress**

	Shs
Cost of work done	750,000
Add: Profit taken	62,500
	812,500
Less: cash received	<u>(750,000)</u>
Valuation of work in progress	<u><u>62,500</u></u>

**QUESTION TWO****a) COMPANY XYZ****Process 3 Account**

	Units	Shs		Units	Unit cost	Shs
Transfer in from process 2:	10,000	300,000	Normal loss:	200	30.00	6,000
Materials	-	230,400	Finished goods	7,200	72.93	525,120
Labour		105,600	Abnormal loss	600	72.93	43,760
Overheads		<u>50,400</u>	Closing W.I.P	<u>2,000</u>	55.76	<u>111,520</u>
	<u>10,000</u>	<u>686,400</u>		<u>10,000</u>		<u>686,400</u>

## Process 2 Production Statement

	Equivalent units	Process 2	Material 2	Labour	Overheads
Finished goods	7,200	7,200	7,200	7,200	7,200
Normal loss	200	-	-	-	-
Abnormal loss	600	600	600	600	600
Closing W.I.P	<u>2,000</u>	<u>2,000</u>	<u>1,200</u>	<u>1,200</u>	<u>1,200</u>
Equivalent units		<u>9,800</u>	<u>9,000</u>	<u>9,000</u>	<u>9,000</u>
Cost Statement	Shs	Shs	Shs	Shs	Shs
Cost		300,000	230,400	105,600	50,400
Less recovery on normal loss sales		(6,000)			
		<u>294,000</u>	<u>230,400</u>	<u>105,600</u>	<u>50,400</u>
Unit cost (Shs)	<u>72.933</u>	<u>30</u>	<u>25.60</u>	<u>11.733</u>	<u>5.60</u>

Cost of completed units = 7,200 x 72.933 = Shs 5,251,176.

b) Value of work in process:

	Shs
Process 2            200 x 30	60,000
Material II           1,200 x 25.60	30,720
Labour                1,200 x 11.733	16,080
Overheads            1,200 x 5.60	<u>6,720</u>
	<u>111,520</u>

c) Abnormal Loss A/C

Shs	Shs
Process 3: Costs a/c	Cashbook: 600 @ 30: 18,000
600 units @ 72.933 <u>43,760</u>	P & L a/c (loss) <u>25,760</u>
<u>43,760</u>	<u>43,760</u>

## QUESTION THREE

- i) Five major features of contract accounting:
- The work will be of relatively long duration.
  - The work is undertaken to customers as specifically required.
  - The price is usually fixed in advance.
  - The completion date is usually fixed in advance and penalties follow delays.
  - The work is usually site based.
  - The end product is usually fixed in advance and penalties follow failure to deliver the specified product.
  - Payments on account are often made against work certified.
  - Most costs can be classified as direct since they are directly incurred for purposes of the contracts.
  - The overheads are relatively a small proportion of total costs.

- (x) A certain amount of profit is taken at the year-end if the contract is not yet completed.
- (xi) Plant and equipment purchased is charged directly to the contract account, but not capitalized.
- (xii) Retention occurs which is released on final certification of work done.

b)

$$\begin{aligned}
 \text{B.E.P (Sales Value)} &= \frac{\text{Fixed Costs}}{\text{Contribution Margin Ratio}} \\
 &= \frac{\text{Shs } 5,800,000}{45.5/100} = \frac{5,800,000}{45.5} \times 100 = \text{Shs } \underline{12,747,253} \\
 \\ 
 \text{B.E.P (Units)} &= \frac{\text{B.E.P Sales}}{\text{Selling Price}} \\
 &= \frac{\text{Shs } \underline{12,747,253}}{\text{Shs } 100} \\
 &\sim 12,747.253 \\
 &\sim \underline{127,473 \text{ units}}
 \end{aligned}$$

#### QUESTION FOUR

- a) **Normal Loss:** refers to unavoidable losses arising from the nature of the production process, thus it is necessary that they are charged as part of the cost of production. Any value realized from the sale of normal loss items should be credited to the process cost so as to reduce the cost of production. Normal losses arise from such reasons as evaporation, spillage, breakages etc.

**Abnormal Loss:** are losses that can be avoided during the production process and cannot therefore be termed as normal process losses. They can't be foreseen and they are above the expected / normal losses. Abnormal loss = Actual loss – Normal loss. Abnormal losses are costed similarly as finished products (or good production) and reported as a period expense.

- b) **Equivalent Units:** This is the number of equivalent fully complete units which the partly complete units represent. They are calculated as physical units x percentage of completion. The concept of equivalent units enables the accurate valuation of closing work in progress, the production for the period and therefore the cost per unit of completed product.
- c) Three standards that can be used in the design of a standard costing system include:
- (i) Ideal standard: it does not provide for expected inefficiencies during work. It assumes work is perfectly done.
  - (ii) Achievable or current standard: It provides for expected inefficiencies.
  - (iii) Basic standard: is a standard that remains unchanged for a long period of time. (See (d) below).

d) Causes of unfavourable material variance include:

- Wrong methods of work.
- Untrained or poorly trained employees.
- Learning new employees at work.
- Wrong or poor quality of raw materials.
- Inefficient machinery
- Changes in material mix.

### QUESTION FIVE

Kings Company

Profit and Loss Statement (Margin Costing Approach)

For the year ended 31<sup>st</sup> March 2003

	Shs. „000“	Shs. „000“
Sales		12,000
Variable cost		
Direct material	4,800	
Direct labour	2,600	
Variable overhead		
Indirect labour	960	
Other factory overheads	200	8,560
GROSS MARGIN		3,440
Selling Variable Cost: Shipping	360	
Sales commission	600	(960)
NET CONTRIBUTION		(2,480)
Fixed Costs		
Local taxes	12	
Depreciation: on factory plant	360	
On office equipment	18	
Insurance on: factory equipment	2.4	
Office equipment	125	
Advertisement	20	
Factory leasehold expenses	120	
Factory supervisory salaries	156	
Administrative salaries	600	
Other general and administrative expenses	75	(1,708.4)
PROFIT FOR THE YEAR		771.6

### QUESTION SIX

- a) Cost Volume Profit analysis refers to a model that depicts the relationship between the main variables that affect the profit levels of a firm within a relevant range. The main determinants of profit level are:
- i) The cost levels: both fixed and variable costs.
  - ii) The volume: is the level of activity undertaken by the organization
  - iii) The price: refers to the amount charged for the output.

The difference between the price and the variable costs is of prime importance as it gives the contribution margin or the extent of contribution to the fixed costs and the profit by the



output volume sold. The relationship between the contribution margin is expressed by the profit volume ratio or the contribution margin ratio which is expressed as:

$$\frac{\text{Contribution Margin}}{\text{Sales}} \times 100$$

The C-V-P analysis therefore indicates how much profit the firm would generate from a given output level, assuming that fixed costs are constant, and the price and the variable costs of the firm also remain constant.

Break-even analysis is an application of C-V-P analysis. (A common misconception is that C-V-P and B-E-P are one and the same thing!). Break-even analysis enables a firm to determine the output level that needs to be produced so as to meet all the fixed and variable costs. This output level (where profit = 0) is referred to as the break-even point and is computed as follows:

$$\text{Break-Even Point (Units)} = \frac{\text{Fixed Costs}}{\text{Unit contribution margin.}}$$

$$\text{Break-even Point (Sales Value)} = \frac{\text{Fixed Costs}}{\text{Contribution Margin Ratio}} \quad \text{OR}$$

$$\frac{\text{Fixed Costs} \times \text{Price Per Unit}}{\text{Unit Contribution Margin}}$$

Break-even Point is therefore the sales volume at which there is no profit or loss. It is therefore a Static concept. Because operating at the break-even point is not the goal of managers, they may question the benefit of break-even analysis. The wider concept (the CVP analysis) is a dynamic concept as it considers the sales volume necessary to earn a desired profit before and after tax.

- b) Assumption of C-V-P analysis: (Sometimes also referred to as the assumptions of BEP analysis.)
- (i) Fixed costs remain fixed and variable costs remain variable within the relevant range and time period.
  - (ii) All costs can be classified either as fixed or variable.
  - (iii) Unit variable costs remain constant.
  - (iv) Volume is the only important factor affecting cost behaviour.
  - (v) Unit sales price and other market conditions remain constant.
  - (vi) Inventory changes have no significant impact.
  - (vii) Managerial policies and techniques have no effect on costs.
  - (viii) Production technology remains constant.
  - (ix) Sales mix remains constant.

#### Implications of these Assumptions:

All these assumptions give the foundation of C-V-P analysis, which is the assumption that costs and profits vary directly with output level, in the relevant range, Ceteris Paribus.

## PAPER 2

### QUESTION ONE

(a)

(i) Integrated Cost accounts:

This is a single comprehensive accounting system with no division between financial and cost accounts. The same bases are used for depreciation and stock valuation and thus there is no need for reconciliation between the cost profit and the financial profit. Financial profit will be cost profit adjusted for any non-cost items such as income from investments.

(ii) Interlocking Cost Accounts:

This system uses separate cost accounts which are periodically reconciled with the financial accounts. Different bases are adopted for depreciation and stock valuations. The interlocking of the financial accounts and the cost accounts is carried out by the use of control accounts in each set of accounts: i.e.

- A cost ledger control account in the financial accounts; and
- A financial ledger control account in the cost accounts

(iii) Cost Ledger Control Account

This is a memorandum account (not part of double entry) maintained in the financial accounts. In it is posted all entries which are to be transferred to the cost accounting system.

(iv) Cost Ledger Contra Account

Also called a Cost Ledger Account, financial ledger control account or a general ledger control account. It is maintained in the cost accounts as part of the double entry. It also enables the financial and cost ledgers to be interlocked because it must agree with the memorandum cost ledger control account in the financial accounts.

#### Memorandum Reconciliation A/C

	Shs		Shs
Profit as per financial accounts:	18,592	Profit as per cost accounts:	20,496
Adjust for:		Adjust for:	
Stock differences:		Dividends and interests:	552
Raw materials: opening stock	438	Finished goods: opening stock	386
Closing stock	355		
Finished goods: closing stock	299		
Loss on sale of machine	<u>1,750</u>		
	<u>21,434</u>		<u>21,434</u>

## QUESTION TWO

(a)

Products:	X	Y	Z
Demand (units)	Sh <u>648,000</u>	Sh <u>805,000</u>	Sh <u>960,000</u>
	Sh 180	Sh 230	Sh 240
	= <u>3,600</u>	= <u>3,500</u>	= <u>4,000</u>
Time required to meet the demand	3,600 x <u>20</u> 60	3,500 x <u>10</u> 60	4,000 x <u>15</u> 60
	= 1,200 hrs	= 583.33 hrs	= 1,000 hrs

Total time required = 1,200 + 583.33 + 1,000 = 2,783 hours

Since we only have 2,100 hours available, we will give priority to the production of those products with the highest contribution per unit. This is because they contribute most to **the company's fixed costs (overheads) and profit.**

	Product: X	Y	Z
Selling price	180	230	240
Less: variable costs			
Raw materials	(50)	(70)	(50)
Direct labour	<u>(30)</u>	<u>(30)</u>	<u>(50)</u>
Contribution margin	<u>100</u>	<u>130</u>	<u>140</u>
Priority of production	(3)	(2)	(1)

However, according to company policy, we must produce at least 2,000 units of each product. Time taken is:

X:  $2,000 \times 20/60 = 666.67$  hours

Y:  $2,000 \times 10/60 = 333.33$  hours

Z:  $2,000 \times 15/60 = \underline{500.00}$  hours

Total time taken = 1,500 hours

Balance of time available = 2,100 – 1,500 = 600 hours

■

First produce the Maximum of units of Z:

Maximum units of Z that can be produced = 3,600 – 2,000 = 1,600

units Time Required = 1,600 x 15/60 = 400 hours

■

Then produce the Maximum of units of Y:

Maximum units of Y that can be produced = 3,500 – 2,000 = 1,500 units

Time Required =  $1,500 \times 10/60 = 250$  hours

But Time Available =  $2,100 - 1,500 - 400 = 200$  hours.

Therefore we can only produce  $200 \div 10/60 = \underline{1,200 \text{ units}}$

(b) Revised Budgeted Profit

<u>Units</u>	<u>Policy Requirement</u>	+	<u>Priority Production</u>	=	<u>Total Production (units)</u>	<u>Profit per unit</u>	<u>Total Budgeted profit (shs)</u>
X	2,000	+	0000	=	2,000	40	80,000
Y	2,000	+	1,200	=	3,200	50	160,000
Z	2,000	+	1,600	=	3,600	40	<u>144,000</u>
							<u>384,000</u>

(c)

Original Budgeted Profit

<u>Units</u>	<u>Production</u>	<u>Profit per unit</u>	<u>Total profit budgeted</u>
X:	3,600	40	144,000
Y:	3,500	50	175,000
Z:	4,000	40	<u>160,000</u>
			<u>479,000</u>

(d)

The requirement that we produce at least 2,000 units of each product so as to maintain the market share or customer contact has the following effect:

- (i) **We can't direct the most hours to the production of the priority products. If we relaxed the policy requirement, we would produce as follows:**

Z:	3,600 units x 20/60	=	1,200 hours
Y:	3,500 units x 10/60	=	<u>583.33</u> hours
			1,783.33
X:	950 units x 20/60	=	<u>316.67</u> hours (2,100 – 1,783.33)
			<u>2,100 hours</u>

- (ii) Profitability is affected as follows:

<u>Product</u>	<u>Units produced with no policy requirement</u>	<u>Profit/Unit</u>	<u>Total Profit</u>
		Shs	Shs
X:	950	40	38,000
Y:	3,500	50	175,000
Z:	3,600	40	<u>144,000</u>
			<u>357,000</u>

The policy requirement makes the profit to be Shs 384,000 from Shs 357,000 without the policy requirement. Thus, the policy makes the organization to maximize profitability.

The policy requirement is optional as it enables the company to satisfy demand in the market and simultaneously maximize its profits, thus is adequate to enable the company compete effectively in highly competitive markets.

### QUESTION THREE

#### EAGLE CONSTRUCTION COMPANY: CONTRACT ACCOUNT

	Shs „000“		Shs „000“
Materials issued	21,500	Materials returned	2,500
Labour cost	3,600	Materials on site	2,000
Plant installed	18,000	Plant balance c/d	12,000
Direct expenses	4,800	Cost of work done c/d	33,450
General management and administration charges	1,750		
Wages accrued	<u>300</u>		
	<u>49,450</u>		<u>49,450</u>
Cost of work done b/d	33,450	Value of work certified	25,000
		Cost of work not certified c/d	7,000
		P & L Loss	<u>1,450</u>
	<u>33,450</u>		<u>33,450</u>
Cost of work uncertified b/d	7,000		
Plant balance c/d	12,000		
Materials balance b/d	2,000		

(b)

#### Contractee's Account

	Shs „000“		Shs „000“
Value of work certified	25,000	Bank	20,000
		Bal c/d	<u>5,000</u>
	<u>25,000</u>		<u>25,000</u>
Bal b/d	5,000		

(c)

Since there is notional loss of Shs 1.45m and on prudence basis, any foreseeable losses should be fully provided for at the earliest possible time. International Accounting Standard No 11 supports this position and that is why the whole loss is charged to the Profit and Loss Account.

**QUESTION FOUR**

Overhead Absorption Rates Using:

	Preparation Department		Finishing Department
Direct labour hours: OAR =	Shs <u>240,000</u> 120,000 hours	= Shs 2/hr	<u>180,000</u> = Shs 4/hr 45,000
Machine hours: OAR =	Shs <u>240,000</u> 60,000 hours	= Shs 4/hr	<u>180,000</u> = Shs 6/hr 30,000

Cost of Job 31:

(i) Using Direct Labour Hours:

	Preparation Department	Finishing Department	Total
Material	60,000	120,000	180,000
Labour	24,000	18,000	42,000
Factory overheads	<u>50,000</u>	<u>6,400</u>	<u>56,400</u>
Total cost	<u>134,000</u>	<u>144,400</u>	<u>278,400</u>

(ii) Using Machine hours

Material	60,000	120,000	180,000
Labour	24,000	18,000	42,000
Factory overheads	<u>80,000</u>	<u>12,000</u>	<u>92,000</u>
Total cost	<u>164,000</u>	<u>150,000</u>	<u>314,000</u>

Comment: The cost increases by Shs 35,600 when the machine hours are used as the basis of absorbing overheads.

- (d) The overhead absorption basis that should be selected is the one that closely represents the rate at which overhead costs are incurred. There should be at least some close relationship between the occurrence of overhead costs and the basis used.

**QUESTION FIVE**

Overhead Absorption Rates:

Blanking:	Shs $\frac{8,000}{1,500}$	= Shs 5.33/hr
Machining:	Shs $\frac{23,000}{2,500}$	= Shs 9.2/hr
Welding:	Shs $\frac{10,000}{1,800}$	= Shs 5.55/hr
Assembly:	Shs $\frac{5,000}{1,000}$	= Shs 5/hr

Costing of Batch B3RR

		<b>Shs</b>
Direct Material:		3,107
Direct expense: hire charges:		525
Direct labour:		
Blanking:	128 x 2.25	
Machining:	452 x 2.50	
Welding:	90 x 2.25	
Assembly:	<u>175 x 1.80</u>	<u>1,935.50</u>
PRIME COST		5,567.50
Add: Production Overheads		
Blanking:	128 x 5.33	
Machining:	643 x 9.2	
Welding:	90 x 5.55	
Assembly:	<u>175 x 5</u>	<u>7,972.34</u>
PRODUCTION/FACTORY COST		13,539.84
Add: selling and administrative cost @ 20% of factory cost		<u>2,707.97</u>
Total cost		<u>16,247.81</u>
Unit cost = $\frac{16,247.81}{250}$	= Shs 64.99	

**QUESTION SIX**

Activity based costing is a method of costing products in which an attempt is made to reflect more accurately the product costs those activities which influence the level of overheads. It refines (that contribute to the overheads) as the fundamental cost objects. An activity is defined as an event, task, or unit of work with a specified purpose, for example, operating machines, designing products, setting up machines etc. An activity can also be defined as a process or procedure that causes work.

Activity based costing (also called transaction based costing) emphasizes the need to obtain a better understanding of the behaviour of overhead costs, i.e. what causes overhead costs and how do they relate to products. It recognizes that in the long run, most costs are not fixed, and it therefore seeks to understand the forces that cause overheads to change over time.

ABC appreciates the fact that overhead costs do not necessarily vary with the level of output (as is the belief in traditional costing systems), but most overheads vary with the range of items produced or the complexity of the production process. In ABC therefore, non-unit related (non-volume) bases are used to absorb overheads into products because they capture the complexity and the diversity of the manufacturing process, such as the relationships between volume, batch size and order size.

The need for ABC may not be clear in labour paced high volume environments, because the costing errors may not be significant. However, the costing errors will be significant in automated manufacturing processes and in companies that manufacture products in highly varied lot/batch sizes because they have a high percentage of non-volume related costs.

ABC recognizes that performance of activities triggers the consumption of resources that are recorded as costs. It assigns costs to the transaction and activities performed in the organization and allocate them appropriately to the products, according to each products" use of the activities. ABC therefore traces costs to the activities identified, then assigns the costs to products using both volume and non-volume related bases.

A common way of applying costs to products in ABC is on the basis of the time the inventory takes to move through a given work cell. A work cell is a product-oriented center including the machines and tools necessary to produce a family of products. Other common basis used in ABC include the number of purchase orders, the number of material handling hours and the number of set up hours.

The ABC System can therefore be described as constituting the following stages:

1. Identifying the main activities in the organization: The main organizational activities such as machine related activities, direct labour related activities as well as auxiliary activities (such as ordering, receiving, material handling costs etc) are identified.
2. Cost Pooling: Involves the assigning of costs to cost centers or cost pools. A cost center is created for each activity e.g. the total costs of all set-ups might constitute one cost center for all set-up related costs.
3. Identifying the cost drivers: Cost drivers are the factors that cause an activity to occur. They therefore influence the cost of a particular activity. Cost drivers capture the demand placed on an activity by a product; for example, purchasing department costs may be driven by the number of purchase orders processed.
4. Absorption of overheads to products: Using the selected cost drivers, the overhead costs are applied to or absorbed by the products depending on the level of activities that the product has consumed.

The use of ABC therefore requires a change in the way overheads are classified by an organization. In a traditional costing system, overheads would be charged to products using at the most two absorption bases usually labour hours and machine hours. ABC System, on the other hand, utilizes many cost drivers to absorb overheads into products. It is therefore claimed, and justly so, that the use of ABC produces a more realistic service or product cost, especially for service organizations and organizations with high overhead costs.



**QUESTION SEVEN**

(a) Five basis of absorbing overhead costs:

Percentage of direct material costs:	Overhead Absorption Rate (OAR)	
		$= \frac{\text{Overhead Cost} \times 100}{\text{Direct material cost}}$
Percentage of Direct (Prime) Cost:	OAR	$= \frac{\text{Overhead Cost} \times 100}{\text{Direct labour cost}}$
Percentage of direct labour cost:	OAR	$= \frac{\text{Overhead Cost} \times 100}{\text{Prime cost}}$
Labour Hours:	OAR	$= \frac{\text{Overhead Costs}}{\text{Labour hours}}$
Units of output:	OAR	$= \frac{\text{Overhead Costs}}{\text{Units of Output}}$

(b) (i)

Just in time is a stock management system in which production parts are received as needed **rather than building up inventories. It is a „demand pull“** manufacturing system in which each component in a production line is produced immediately as needed by the next step in the production line. Sales demand therefore pulls inventories through the production line.

A JIT system depends on stock orders arriving regularly and on time. It is based on short, rapidly changing production runs operating in a timely and efficient manner. It argues for no stock; rather a regular supply plus safety stock is maintained.

The JIT System operates under the premise (assumption) of zero defects in parts supplied by other companies as well as in the products manufactured internally by other departments.

Under this system, managers reduce inventories to a minimum level, keeping on hand only the amounts needed in production, until the next sales order arrives, when a purchase order is raised. Orders for purchases are therefore more frequent and smaller.

(ii) Material Requisition Planning (MRP)

Also called material requirement planning. It is an alternative system of stocks management in which does not assume an even or constant demand throughout a production period. It is actual demand driver rather than a system based on average demand.

In this system, employees place orders for materials only when the master production schedule (MPS) has materials actually scheduled for use in production.

An MRP system examines the finished goods requirements (sales demand) before determining the demand for raw materials, components and other material inputs into the production process at each of the prior production stages.

MRP aims at maintaining the lowest possible levels of inventory while also making certain materials and parts available as safety stocks.

## PAPER 3

### SECTION 1

#### QUESTION ONE

##### NJOTO Limited

Product	<u>Coolo:</u>	<u>Besto:</u>	<u>Zedo:</u>
	<u>Shs</u>	<u>Shs</u>	<u>Shs</u>
Selling price:	60	48	59

#### Less variable cost per unit

Direct Material	15	12	14
Direct Labour	25	50	23
Variable overheads	<u>5</u>	<u>30</u>	<u>6</u>
	<u>(45)</u>	<u>(35)</u>	<u>(43)</u>
Contribution per unit	<u>15</u>	<u>13</u>	<u>16</u>
Time required (minutes)	30	15	20
Contribution per minute (Shs.)	0.50	0.289	0.80

- a) Ranking the products in priority of production based on machine hours.  
Zedo, Coolo then Besto (most profitable to least profitable)

b) Most Profitable Product Mix:

Machine time available = 30,000 × 60 =	1,800,000
Product Zedo: 48,000 units @ 20 minutes	<u>(960,000)</u>
	840,000
Product Coolo: 20,000 units @ 30 minutes	<u>( 600,000)</u>
	240,000
Product Besto: 240,000/4 = 5,333 1/3 units:	<u>(240,000)</u>

Therefore the most profitable product Mix is:

Zedo: 48,000 units  
Coolo: 20,000 units  
Besto: 5,333 1/3 units

c) Resulting Net Profit:

		<u>Shs.</u>
Contribution by:	Zedo : 48,000 × 16 =	768,000
	Coolo: 20,000 × 15 =	300,000
	Besto: 5,333 1/3 × 13 =	<u>69,334</u>
		1,137,334
Less fixed costs:	Zedo: 48,000 × 8 =	384,000
	Coolo: 20,000 × 7 =	140,000
	Besto: 5,333 1/3 × 13 =	<u>125,000</u>
		<u>(649,000)</u>
		<u>488,334</u>

## QUESTION TWO

a)

	PRODUCT 14/363	11/175	14/243
(i) Minimum Sales: (Units)			
Gross Margin = $\frac{\text{Sales} - \text{Cost}}{\text{Sales}}$	$\frac{S - C}{S} = 0.42$	$\frac{S - C}{S} = 0.46$	$\frac{S - C}{S} = 0.37$
	$0.42S = S - C$	$0.54S = C$	$0.63S = C$
	$0.58S = C$		
	$C = 58\%S$		
	$C = 58\% \times 26,000$	$C = 54\% \times 130,000$	$C = 63\% \times 60,000$
	$= \text{Shs } 15,080$	$= \text{Shs } 70,200$	$= \text{Shs } 37,800$
	No of units = $\frac{\text{Total Cost}}{\text{Unit Cost}}$	No of units	No of units
	$= \frac{15,080}{2.25}$	$= \frac{70,200}{0.36}$	$= \frac{37,800}{0.87}$
	$= 6,702 \text{ Units}$	$= 195,000 \text{ Units}$	$= 43,448 \text{ units}$
Maximum weekly sales:	Cost = $58\% \times 30,000$ $= 17,400$ Units = $17,400 / 2.25$ $= 7,733 \text{ Units}$	Cost = $54\% \times 160,000$ $= 86,400$ Units = $86,400 / 0.36$ $= 240,000 \text{ Units}$	Cost = $63\% \times 128,000$ $= 80,640$ Units = $80,640 / 0.87$ $= 92,690 \text{ Units}$
(ii) Re-order level = Maximum Consumption x Maximum Re-order period NB: Maximum Re-order period = 2 weeks	$7,733 \times 2$ $= 15,466 \text{ Units}$	$240,000 \times 2$ $= 480,000 \text{ Units}$	$92,690 \times 2$ $= 185,380 \text{ Units}$
(iii) Maximum Stock Level = Re-order level + Re-order Quantity - Minimum Consumption	$15,466 + 25,000 - (6,702 \times 2)$ $= 27,062 \text{ Units}$	$480,000 + 500,000 - (195,000 \times 2)$ $= 590,000 \text{ Units}$	$18,380 + 250,000 - (43,448 \times 2)$ $= 348,484 \text{ Units}$

b) **Comments:**

- The reordering process for item 14/363 is satisfactory as no order is placed because stocks have not yet reached the re-order level.
- The reordering process for product 14/243 is satisfactory as an order was placed immediately the stock hit the re-order level 2 days ago.
- However, the re-ordering process for product 11/175 is inadequate, as an order should already have been placed as the stock level is below the re-order level.
- The lead time under the current system is 2 weeks, both maximum and minimum. The stocks take long to reach the stores and a way to reduce it to 1 week or less. This can be done by reducing the delivery process so that the stocks are delivered directly to the company stores.
- The re-order level is ---- adequately for maximum demand in the lead-time plus any random disturbance that may occur. However, the need to be analysed as the organization could be suffering unnecessary high carrying costs given that the re-order level is twice the maximum demand count.

**QUESTION THREE**

a)

- i) Break – even charts: are graphical representation of the relationship between costs and volume as well as the profit or loss at any sales volume within a relevant range.
- ii) Variable cost ratio: also called the contribution margin (iii). It is the ratio of the variable costs to the sales of the proportion of variable costs in the sales. It is computed as:

$$\frac{\text{Variable Costs}}{\text{Sales Price}} \times 100$$

- iii) Margin of safety: is the excess of sales over the break even sales. It shows by how much sales will have to decrease before the company can make a loss.

- iv) Profit Volume ratio: Also called the marginal income ratio (vi). It is the ratio of the contribution margin to sales. It is computed as:

v)

$$\frac{\text{Sales} - \text{Variable costs}}{\text{Sales}} \times 100\% \text{ or } \frac{\text{Contribution Margin}}{\text{Sales}} \times 100\%$$

$$\text{Or } (1 - \text{variable cost ratio}) \times 100\%$$

$$\begin{aligned}
 \text{b) i) Break even point (units)} &= \frac{\text{Fixed costs}}{\text{Contribution per unit}} \\
 &= \frac{\text{Shs. } (17,000 + 11,000 + 2,000 + 6,000)}{10 - (24,000 / 26,000)} \\
 &= \frac{\text{Shs. } 36,000}{6} \\
 &= 6,000 \text{ units} \\
 \text{Break-even point (Sales)} &= 6,000 \times 10 \\
 &= \text{Shs. } 60,000
 \end{aligned}$$

$$\begin{aligned}
 \text{ii) Cash flow break-even point} &= \frac{\text{Cash Expenses}}{\text{Contribution per unit}} \\
 &= \frac{\text{Fixed costs} - \text{Non-cash expenses}}{\text{Contribution per unit}} \\
 &= \frac{36,000 - 6,000(\text{Depreciation})}{6} \\
 &= \frac{\text{Shs. } 30,000}{6} \\
 &= 5,000 \text{ units} \\
 \text{BEP in Sales} = 5,000 \times 10 &= \text{Shs. } 50,000.
 \end{aligned}$$

iii)

Depreciation tax shield is the amount by which an organization tax liability decreases because of the reduction of taxable income by the depreciation expenses. Its importance in BEP analysis is that when the depreciation is included in a tax environment, the company's actual break-even point (computed from cash fixed costs) is lower than the computed break-even point (computed from total fixed costs). It is important to note that the depreciation tax shield lowers the cash BEP than the cash BEP if there were no tax.

$$\text{Depreciation tax shield} = \text{Depreciation Change} \times \text{Tax Rate}$$

iv) Using a tax rate of 48%, the Cash BEP in Q4 is now computed as follows:

	Shs.	
Cash flow fixed costs:	30,000	
Less Tax shield on non-cash Depreciation.		
Depreciation expenses: 48% × 6,000:	<u>2,880</u>	
	<u>27,120</u>	
Cash BEP units = Shs. <u>27,120</u>	=	<u>4,520</u> units
6		
Cash BEP sales = 4,520 × 10	= Shs. <u>45,200</u>	

#### Observation:

The BEP without taxes is 5,000 units, or Shs. 50,000. With tax consideration, the BEP drops to 4,520 units or Shs. 45,200. Therefore, the tax shield provided by the depreciation makes the cashflow BEP to be lower by **480 units or Shs. 4,800.**

#### QUESTION FOUR

a)

Reasons why construction companies find it prudent to declare profits of uncompleted contracts:

- Contract jobs take long duration before they are finished. It would only be just and fair to report the profit that has accrued on the work done. Investors also need to be rewarded periodically on their invest which necessitates the periodic recognition of accrued profits.
- International Accounting Standards 11 recommends that contracts profits can be recognized using the percentage of completion method if contract has been substantially completed.
- It would be an over-extension of prudence to wait until the contract work e.g. for 15 years, is complete to recognize any profit.

b) Pendo Construction Company:

i) Contract Account (Shs. „000)			
Balance b/f: Cost of work done:	158,200	Material Transferred out:	15,000
Material on site:	4,500	Material sold:	19,000
Plant:	150,000		
Material issued from stores:	14,600	Plant c/d @ 87.5% of:	
Material from suppliers:	128,400	(150,000 = 120,000)	236,250
Plant purchased:	120,000	Material c/d:	51,000
Sub-contract fees:	18,450	Cost of work done c/d:	485,980
Consultancy fees:	28,000		
Inspection fees:	500		
Salaries and wages:	161,550		
Head Office expenses:	1,200		
Direct Expenses:	<u>2,600</u>		
	<u>788,250</u>		<u>788,250</u>
Cost of work done b/d:	485,980.20	Value of work certified:	820,000
Contract profit:	<u>375,019.80</u>	Cost of work not certified c/d:	<u>42,000</u>
	<u>862,000</u>		<u>702,000</u>
Balance b/d:			
Plant:	236,250		
Material:	51,000		
Cost of work not certified:	42,000		

NB: Work certified value = 660,000 + 160,000 = 820,000

ii)

<u>Valuation of work in progress:</u>	Shs. „000
Costs incurred to 31 <sup>st</sup> December 2000:	485,980.20
Add: Contract profit realized:	<u>376,019.80</u>
	862,000
Less: Value of Work certified paid for:	<u>(580,000)</u>
	<u>282,000</u>

OR:

Cost of work not certified:	42,000
Add: Money Retained: (820,000-580,000):	<u>240,000</u>
	<u>282,000</u>

iii)		Mara Paradise Limited (Contractee) Shs. „000“	
Contract a/c:	820,000	Retention a/c:	82,000 (10% × 820,000)
		Cash a/c:	580,000
		Bal c/d:	<u>158,000</u>
	<u>820,000</u>		<u>820,000</u>
Bal b/d:	158,000		

**QUESTION FIVE****(a)**

(i) Material Price Variance = (Actual Price – Standard Price) × Actual Quantity

$$\begin{aligned} \text{Material X} &= [(86,400 / 9,600) - 1] 9,600 = \underline{76,800(A)} \\ \text{Y} &= [(124,425 / 31,500) - 4] 31,500 = \underline{1,575 (F)} \end{aligned} \quad \left. \vphantom{\begin{aligned} \text{Material X} \\ \text{Y} \end{aligned}} \right\} 11,175$$

Material Usage Variance = (Actual Usage – Standard Usage) × Standard Price

$$\begin{aligned} \text{Material X} &= [9,600 - (4,000 \times 25)] 1 = \underline{90,400(F)} \\ \text{Material Y} &= [31,500 - (4,000 \times 10)] 4 = \underline{34,000(F)} \end{aligned} \quad \left. \vphantom{\begin{aligned} \text{Material X} \\ \text{Material Y} \end{aligned}} \right\} 38,000 (F)$$

**(ii)**

Labour Rate Variance = Actual Labour Hours (Actual Labour Rates – Standard Labour Rate)

$$\begin{aligned} &= 31,000 (410.750 / 31,000 - 12.50) \\ &= \underline{23,250 (A)} \end{aligned}$$

Labour Efficiency Variance = (Actual Labour – Standard Labour) × Standard Labour  
Hours Hours Rate

$$\begin{aligned} &= [31,000 - (4,000 \times 10)] 12.50 \\ &= \underline{\text{Shs } 112,500(F)} \end{aligned}$$

**(iii)**

Total Variable Overhead Variance = Actual Variable Overhead Cost – Standard Variable Overhead cost for the actual output

$$\begin{aligned} &= 143,800 - (4,000 \times 25) \\ &= \underline{\text{Shs. } 43,800(A)} \end{aligned}$$

**(iv)**

Fixed Overhead Volume Variance = Budgeted Fixed Overheads – Standard Fixed Overhead Cost for the actual output

$$\begin{aligned} &= (3,500 \times 30) - (4,000 \times 30) \\ &= \text{Shs, } 105,000 - 120,000 \\ &= \underline{15,000(F)} \end{aligned}$$

**b)**

The material usage variance of Shs. 38,000 is favorable which means the company is using less than the quality allowed by the standard expected for output of 4,000 units. This may be due to the original target (standard) being too low thus quite easily achievable. Or alternatively due to the input material being of very good quality or even the labour being of very good quality so that very little raw material is invested.

There is a favorable material price variance of Shs. 11,175 which could indicate increase bargaining power for the company during purchase. It could also be due to bulk purchase and fast settlement of creditors whereby the company enjoys quality and cash discounts. It could be that prices have also dropped in the market.

The usage variance of labour (also called the labour efficiency variance) is favorable at Shs. 112,500, which means the company is using less labour hours than what the standard has set.

There is a variance of 9,000 hours or  $(9,000/40,000) 100 = 22.5\%$  of the standard, which shows the original standard, is not challenging or quite out of date. It is also possible that the labour is so skilled in producing the output that it can take much less time than expected.

## QUESTION SIX

(a)

In the account classification method, costs are simply distinguished as either fixed or variable, just like they are recorded in the books. The method may not be very objective as it depends also on the analysis judgment.

In the high-low method (Range method), the cost figures for the highest and lowest output levels are compared. Their difference is taken to represent the variable costs. When this difference is divided to the difference in units, the variable cost per unit is obtained. These are then substituted into either the high or low level costs and the fixed costs obtained. The method is reliable and objective, but uses only two sets of data.

(b)

- (i) Direct costs: these are resources or costs that can be charged to a specific unit of production, as they are incurred to produce it e.g. direct labour, direct raw material and direct expenses so as hire of special equipment.

Indirect costs: are costs incurred for the activities of a whole organization and cannot therefore be identified with a specific unit of production for example, rents, rates, electricity etc.

- (ii) Cost center: is any geographical or physical part of an organization respect of which costs may be ascertained, allocated and reallocated for the purpose of cost control. It could be a department or function.

Cost unit: refers to a quantitative unit of a product or service in relation to which costs are ascertained. This could be a unit of production (such as a tonne, kilogram) or a process equivalent unit.

- (iii) Joint Products: refers to two or more products using the same process but separate in the course of processing; each has a sufficiently high reliable value to merit recognition as a main product. e.g. milk and butter

By Products: Is incidental output from the material used to manufacture the main products. They have relatively low realization value when compared to the sale value of the main product e.g. Sugar and Molasses.



- (iv) Period Costs: these are costs, which relates to a particular period and are therefore usually expensed in that period. They are also called fixed costs because they do not change with changes in the level of output. They are therefore usually irrelevant for decision-making.
- (v) Production costs: refers to costs incurred to produce output. It is made up of direct materials, direct labour, direct expenses and production overheads.

## QUESTION SEVEN

a)

The Budget Committee formulates the general programme for the preparation of the budget. It performs the following duties:

- Co-coordinating the whole budget preparation process.
- Issuing budget preparation guidelines to the budgeting officers.
- Providing historical information and forecasts to help the manager in preparing budgets.
- Helping managers and other budget offices resolve any difficult they may encounter during the budgetary process.
- Ensuring that the officers (managers) prepare their budgets in time.
- Suggesting budget reviews after critical evaluation of the draft budgets forwarded to them by the managers.
- Performing a final evaluation of budgets and approving them.
- Preparing the budget summaries.
- Submitting the budget to the top managers.

b)

Key factor also called the Critical Success Factor (CSF) or the Critical Constrain Factor (CCF) refers to the main factor that will have to be considered and incorporated into the budgets to ensure that the prepared budgets are reasonable and executable Key factor in most organizations is the demand for the units service produced: Once estimated, the budgets can be prepared from its estimated budget.

c) Five key factors that affect the budgeting process:

- i) **Demand: the annual demand or any relevant period"s demand must be** estimated first before the purchases, products and expenses budgets can be prepared.
- ii) **Plant Capacity:** Is a critical factor especially in small firms – high growth markets. They must utilize their limited capacity in such a way as to maximize profits.
- iii) **Labour:** Highly skilled labour is a key factor to consider especially in the developing countries where such labour may not be readily available of is very expensive.
- iv) **Capital:** This is the main key factor in capital budgeting. The project that will utilize the cash to generate the highest level of profits are taken first, ceteris paribus.
- v) **Raw Material:** This is a key factor especially if the materials supply fluctuates over time. Some materials are also very expensive.
- vi) **Machine hours:** These are the constraints in capital-intensive firms because the machine capacity may be lower than the capacity required to meet the market demand. The available capacity will have to be utilized such a way that profits are maximized.

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**SUGGESTED SOLUTION****PAPER 4****QUESTION ONE**

Activity based costing is a method of costing products in which an attempt is made to reflect more accurately in the product costs those, activities which influence the level of overheads. It refines the costing systems of products by focusing on the individual activities (that contribute to the overheads) as the fundamental cost objectives. An activity is defined as an event, task, or unit of work with a specified purpose, for example, operating machines, designing products, setting up machines etc. An activity can also be defined as a process or procedure that causes work.

Activity based costing (also called translation based costing) emphasises the need to obtain a better understanding of the behaviour of overhead costs, i.e. what causes overhead costs and how do they relate to products. It recognises that in the long run, most costs are not fixed, and it therefore seeks to understand the forces that cause overheads to change over time.

ABC appreciates the fact that overhead costs do not necessarily vary with the level of output produced or the complexity of the production process. In ABC therefore, non-unit related (non-volume) bases are used to absorb overheads into products because they capture the complexity and the diversity of the manufacturing process, such as the relationships between volume, batch size and order size.

The need for ABC may not be clear in labour based high volume environments, because the costing errors may not be significant. However, the costing errors will be significant in automated manufacturing processes and in companies that manufacture products in highly varied lot/batch sizes because they have a high percentage of non-volume related costs.

ABC recognises that performance of activities triggers the consumption of resources that are recorded as costs. It assigns cost to the transactions and activities performed in the organisation, and allocate them appropriately to the products according to each product's use of the activities. ABC therefore traces costs to the activities identified, then assigns the costs to products using both volume and non-volume related drivers.

A common way of applying costs to products in ABC is on the basis of the time the uncertainty takes to move through a fire work cell. A work cell is a product oriented centre including the machines and tools necessary to produce a family of products. Other common basis used in ABC include the number of purchase orders, the number of material handling hours and the number of set up hours.

The ABC system can therefore be described as constituting the following stages:

1. **Identifying the main activities in the organisation**  
The main organisational activities such as machine related activities, direct labour related activities as well auxiliary activities (such as ordering, receiving, material handling costs etc) are identified.
2. **Cost Pooling** –Involves the assigning of costs to cost centres or cost pools. A costcentre is created for each activity e.g. the total costs of all set-ups might constitute one cost centre for all set-up related costs.
3. **Identifying the Cost Drivers:** Cost drivers are the factors that cause an activity to occur. They therefore influence the cost of a particular activity. Cost drivers

capture the demand placed on an activity by a product for example, purchasing department costs may be driven by the number of purchase orders processed.

The use of ABC therefore requires a change in the way overheads are classified by an organisation. In a traditional costing system, overheads would be charged to products using at the most two absorption bases, usually labour hours and machine hours. ABC system, on the other hand, utilises many cost drivers to absorb overheads into products. It is therefore claimed, and justly so, that the use of ABC produces a more realistic service or product cost, especially for service organisations and organisations with high overhead costs. However, managers used to the old system may resist the use of the ABC. Also, selecting the most appropriate cost driver from a host of them may not be a straight forward activity. The relationship between the cost driver and the activity may also not be easy to determine.

The analysis of the various activities that are involved in production may be a time consuming and tedious exercise.

However, ABC is bound to produce the most accurate and the most relevant data for an organisation's planning, decision making, performance evaluation and control purposes.

### QUESTION TWO

	OVERHEAD COSTS	BASIS OF APPORT.	DEPARTMENTS					TOTAL
			FOR MING	MACHI NING	ASSEM BLY	MAINTENANCE	GENERAL	
1.	<u>Direct Allocated</u>							
	Repairs & Maintenance	-	800	1,800	300	200	100	3,200
	Departmental expenses	-	1,500	2,300	1,100	900	1,500	7,300
	Indirect labour	-	3,000	5,000	1,500	4,000	2,000	15,500
2.	<u>Apportionment</u>							
	Rent & Rates	Floor space	1,600	3,200	2,400	400	400	8,000
	Power	Effective hse power	200	450	75	25	0	750
	Light and heat	Floor area	1,000	2,000	1,500	250	250	5,000
	Plant depreciation	Plant value	2,500	6,000	750	750	0	10,000
	Fixtures & fittings	Fixtures & fittings	250	25	100	50	25	250
	Depreciation	Value						
	Plant Insurance	Value of building	500	1,200	150	150	0	2,000
	Building insurance	Value of building	100	200	250	25	25	500
			11,250	22,175	8,025	6,750	4,300	52,500

### QUESTION THREE

- (a) Five basis of absorbing overhead costs:
- Percentage of direct material costs =  $\frac{\text{Overhead cost}}{\text{Direct Material Cost}} \times 100$
  - Percentage of direct labour cost = OAR =  $\frac{\text{Overhead cost}}{\text{Direct labour cost}} \times 100$
  - Percentage of Direct Prime Cost =  $\text{OAR} = \frac{\text{Overhead Cost}}{\text{Prime cost}} \times 100$
  - Labour Hours = OAR =  $\frac{\text{Overhead Costs}}{\text{Labour hours}}$
  - Units of output = OAR =  $\frac{\text{Overhead Costs}}{\text{Units of output}}$
- (b) (i) Just-In-Time is a stock management system in which production parts are

received as needed rather than building up inventories. It is a demand pull manufacturing system in which each component in a production line is produced immediately as needed by the next step in the production line. Sales demand therefore pulls inventories through the production line.

A JIT system depends on stock orders arriving regularly and on time. It is based on short, rapidly changing production runs operating in a timely and efficient manner. It argues for no stock; rather a regular supply plus safety stock is maintained.

The JIT system operates under the premise (assumption) of zero defects in parts supplied by other companies as well as in the products manufactured internally by other departments.

This system, managers reduce inventories to a minimum level, keeping on hand only the amounts, needed in production, until the next sales order arrives, when a purchase order is raised. Orders for purchases are therefore more frequent and smaller.

Demand triggers each step of the production process starting with the customer demand. For a finished good at the end of process and working all the way back to the demand for a materials at the beginning of the process.

(ii) **Material Requisition Planning (MRP)**

Is a push through system that manufacturers finished products for inventory on the basis of demand forecasts. Also called material requirements planning. It is an alternative system of stocks management which does not assume an even or constant demand throughout a production period. It is actual demand driven rather than a system based on average demand.

In this system, employees place orders for materials only when the master production schedule (MPS) has materials actually scheduled for use in production.

An MRP system examines the finished goods requirements before determining the demand for raw material components and other material inputs into the production process at each of the prior production stages.

MRP aims at maintaining the lowest possible levels of inventory while also making certain materials and parts available as safety stocks.

#### QUESTION FOUR

(a)

**MUGOIYA CONSTRUCTION COMPANY  
CONTRACT ACCOUNT FOR CONTRACT NO.1104  
FOR THE PERIOD ENDED 31<sup>ST</sup> DECEMBER 2003**

		Sh.		Sh.
Site wages paid	42,156		Materials transferred out	1,590
Add accruals	<u>921</u>	43,077	Prepayments c/f	507
Materials purchased	54,203		Materials balances c/d	18,300
Add from homes	<u>637</u>	54,860	Plant balance c/f	14,750
Plant purchased	12,500		Work in progress c/f	7,250
Less transferred	<u>5,250</u>	17,750	Cost of work certified	102,264
Subcontractors charges		19,580	c/d	
Head office charges		<u>4,308</u>		

	<u>144,661</u>		<u>144,661</u>
Cost of work certified	102,264		137,500
b/d	14,802	Value of work certified	
Profit taken (W1) to P & L	<u>20,434</u>		
	<u>137,500</u>		<u>137,500</u>
Profit in suspense (W2)	507		
	18,300		
Prepayments b/f	14,750		
Materials b/f	7,250		
Plant b/d			
Work in process b/d			

**Workings:****Profit Calculations**

	Shs.	Shs.
Contract value		550,000
Less: Costs to date	109,514	
Estimated future costs	<u>375,000</u>	
Estimated total contract costs		<u>(484,514)</u>
Estimated total contract, profit		<u>65,486</u>

$$\text{Profit taken} = \frac{\text{Cost of work done}}{\text{Estimated total costs}} \times \text{Estimated contract profit}$$

$$\text{But cost of work done} = \text{Cost of work certified} + \text{work in progress}$$

$$= 102,264 + 7,250 = \text{Sh.}109,514$$

$$\text{Therefore profit taken} = \frac{109,514}{484,514} \times 65,486 = \text{Sh.}14,802$$

$$\text{Profit in suspense} = \text{Total estimated contract profit} - \text{Profit taken}$$

$$= 65,486 - 14,802 = \text{Sh.}20,434$$

**(b) Profit Calculation using the traditional system**

	Sh.
Value of work certified	137,500
Less: cost of work certified	<u>(102,264)</u>
Estimated total contract profit	<u>35,236</u>

$$(i) \quad \text{Profit taken} = \frac{2}{3} \times \text{Estimated total}$$

$$\text{Contract profit} = \frac{2}{3} \times 35,236 = \text{Sh.}23,400$$

The profit taken is further reduced by 100% less retention on prudence basis.

$$\text{i.e.} \quad \text{Profit taken to Profit \& Loss A/c} = 85\% \times 23,400 = \text{Sh.}19,967$$

(ii) Therefore profit suspended = Total contract profit	35,236
Less profit taken	<u>(19,967)</u>
Profit in suspense	<u>15,269</u>

## QUESTION FIVE

- (a) (i) **Normal Loss:** Refers to unavoidable losses arising from the nature of the Production process, thus it is necessary that they are charged as part of the cost of production. Any value realised from the sale of normal loss items should be credited to the process cost so as to reduce the cost of production. Normal losses arise from such season as evaporation, spillage, breakages etc.
- (ii) **Abnormal loss:** Are losses that can be avoided during the production process and cannot therefore be termed as normal process losses. These cannot be foreseen and they are above the expected/normal losses.  $\text{Abnormal loss} = \text{Actual loss} - \text{Normal loss}$ . Abnormal losses are costed similarly as finished products (or good production) and reported as a period expense.
- (iii) **Equivalent units:** This is the number of equivalent fully complete units which the partly complete units represent. They are calculated as  $\text{physical units} \times \text{percentage of completion}$ . The concept of equivalent units enables the accurate valuation of closing work in progress, the production for the period and therefore the cost per unit of completed product.

(b) (i) **Process 3 Account**

	Units	Shs.		Units	Unit cost	Sh.
Transfer in from process 2			Normal loss	200	30	6,000
Materials	10,000	300,000	Finished goods	7,200	72.93	525,120
Labour		230,400	Abnormal loss	600	72.93	43,760
Overheads		105,600	Closing W.I.P	2,000	55.76	111,520
		50,400				
	10,000	686,400		10,000		686,400

(ii) **Production Statement**

	Equivalent units	Process 2	Material 2	Labour	Overheads
Finished goods	7,200	7,200	7,200	7,200	7,200
Normal loss	200	-	-	-	-
Abnormal loss	600	600	600	600	600
Closing W.I.P	<u>2,000</u>	2,000	1,200	1,200	1,200
	10,000				
Equivalent units		9,800	9,000	9,000	9,000
<u>Cost Statement</u>					
Cost		300,000	230,400	105,600	50,400
Less: Recovery on normal loss sales		(6,000)	-	-	-
		294,000	230,400	105,600	50,400
Unit cost (Shs)	72.933	30	25.60	11.733	5.60

Cost of completed units =  $7,200 \times 72.933 = \text{Sh.}5,251,176$

(iii) Value of work in process		Shs.
Process 2	2,000 x 30	60,000
Material II	1,200 x 25.60	30,720
Labour	1,200 x 11.733	16,080
Overheads	1,200 x 5.60	<u>6,720</u>
		<u>111,520</u>

#### ABNORMAL LOSS A/C

Process 3 Costs A/c		Cash book:	
600 units @ 72.933		600 x 30	18,000
	<u>43,760</u>	Profit & Loss	<u>25,760</u>
	<u>43,760</u>		<u>43,760</u>