KASNEB REVISION KIT

ADVANCED FINANCIAL MANAGEMENT REVISION KIT

MASOMOMSINGI

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UPDATED WITH NOVEMBER 2020 PAST PAPER

CPA

ADVANCED

FINANCIAL MANAGEMENT REVISION KIT

PART 3

CPA SECTION 5

REVISION KIT

PAST EXAMINATION PAST PAPERS WITH SUGGESTED ANSWERS

TOPICALLY ARRANGED

Updated with November 2020 Examination Past paper

INTRODUCTION

Following our continued effort to provide quality study and revision materials at an affordable price for the private students who study on their own, full time and part time students, we partnered with other team of professionals to make this possible.

This Revision kit (Questions and Answers) contains kasneb past examination past papers and their suggested answers as provided by a team of lecturers who are experts in their area of training. The book is intended to help the learner do enough practice on how to handle exam questions and this makes it easy to pass kasneb exams.

Special appreciation and recognition to the lecturers who have helped in the development of our materials, These are: FA Kegicha William Momanyi (MBA Accounting, CPA, CISA and CCP), FA Bramwel Omogo (B.sc Actuarial Science, CIFA, CIIA, CFA first level and ICIFA member), Johnmark Mwangi (MSc Finance, CPAK, BCom Finance), CPA Gregory Mailu (Bsc. Economics) CPA Dominic Rasungu and CPA Lawrence Ambunya among others.

KASNEB SYLLABUS

GENERAL OBJECTIVE

This paper is intended to equip the candidate with knowledge, skills and attitudes that will enable him/her to apply advanced financial management techniques in an organisation.

15.0 LEARNING OUTCOMES

A candidate who passes this paper should be able to:

- Evaluate advanced capital budgeting decisions
- Design an optimal capital structure for an organisation
- Predict corporate failure
- Apply derivatives in financial risk management
- Apply financial management skills in the public sector
- Understand concepts of corporate restructuring and re-organisation
- Apply valuation techniques in real estate finance

CONTENT

15.1 Advanced capital budgeting decision

- Incorporating risk/uncertainty in capital investment decisions
- Nature and measurement of risk and uncertainty
- Techniques of handling risk: sensitivity analysis, scenario analysis, decision trees, simulation analysis, utility analysis, risk adjusted discounting rate(radr) and certainty equivalent method
- Incorporating capital rationing in capital investment appraisal
- Incorporating inflation in capital investment appraisal
- Evaluation of projects of unequal lives
- The real options-strategic investment option, timing option, abandonment option and the replacement option
- Common capital budgeting pitfalls

15.2 Portfolio theory and analysis:

- The modern portfolio theory: background of the theory; portfolio expected return; the actual and weighted portfolio risk; derivation of efficient sets; the capital market line (CML) model and its applications, the mean variance dominance rule; short comings of portfolio theory
- Capital Asset Pricing Model-CAPM : background of the theory; assumptions; beta estimation - beta coefficient of an individual asset and that of a portfolio and the interpretation of the result; security market line(SML) model and its

applications; conceptual differences between portfolio theory and capital asset pricing model
- Shortcomings of the capital asset pricing model
- The Arbitrage pricing model (APM) and other multifactor models: background of the theory; conceptual differences between the Capital asset pricing model and the Arbitrage pricing model; application of the Arbitrage pricing model, shortcomings of Arbitrage pricing model; Pastor Stambaugh model
- Evaluation of portfolio performance: Treynor's measure, Sharpe's measure, Jensen's measure, appraisal ratio measure, information ratio, Modigliani and Modigliani (M2)

15.3 Advanced financing decision
- The nature of financing decision, principle objectives of making financing decision
- Overview of cost of capital: meaning and relevance of cost of capital: the firm's overall cost of capital; weighted average cost of capital (WACC) and weighted marginal cost of capital (WMCC) ; analysis of breakpoints in weighted marginal cost of capital schedule
- Capital structure theories: nature of capital structure and factors influencing the firm's capital structure; traditional theories of capital structure - assumptions of the theories, Net income theory and Net operating income theory; Franco Modigliani and Merton Miller's propositions - MM without taxes, MM with corporation taxes, MM with corporation and personal tax rates and MM with taxes and financial distress costs; other theories of capital structure; the pecking order theory and Trade-off theory determination of the firm's optimal capital structure using the Hamada model, CAPM and WACC
- Special topics in financing decision: analysis of operating profit (EBIT)/EPS at point of indifference in firm's earnings; establishing the range of operating profit within which each financing option; leverage and risk; operating leverage and operating risk, financial leverage and financial risk, combined leverage and total risk; quantifying leverage using the degree of operating leverage, degree of financial leverage and degree of combined leverage
- Long term financing decisions; bond refinancing decision, lease-buy evaluation and the rights issues
- Impact of financing on investment decisions - the concept of adjusted present value (APV)

15.4 Mergers and acquisitions
- Nature of mergers and acquisitions

- Reasons of mergers and acquisitions
- Acquisition and Mergers verses organic growth
- Valuation of acquisitions and mergers
- Prediction of a takeover target
- Defence tactics against hostile takeovers
- Financing of mergers and acquisitions
- Analysis of combined operating profit (EBIT) and post-acquisition earning per share at the point of indifference in firms earnings under various financing options.
- Determination of range of combined operating profit.
- Regulatory frame work for mergers and acquisitions
- Reasons why there are failed mergers and acquisitions
- Mergers and acquisitions in a global context

15.5 Corporate restructuring and re-organisation

- Background on restructuring and re organisation
- Indicators/symptoms of restructuring
- Considerations in designing an appropriate restructuring programme
- Financial reconstruction: forms of financial reconstruction; impact of financial reconstruction on share price; impact of financial reconstruction on the weighted Average cost of capital (WACC)

- Portfolio reconstruction: various ways of unbundling a firm: divestment, de-merger, spin-off, liquidation, sell-offs, equity curve outs, strategic alliances, management buyout, leveraged buyouts and the management buy-ins.
- The relevance of the various forms of portfolio reconstruction
- Organisational reconstruction: The nature and benefits of this form of restructuring; models of predicting corporate failure; Multiple discriminant analysis (Z-Score model), Beaver failure ratio, Argenti model, Taffler's model
- Causes of financial distress
- Forms of financial distress and solutions to financial distress

15.6 Derivatives in financial risk management

- The meaning, nature and importance of derivative instruments: futures, forwards, options and swaps
- Pricing and valuations of derivatives: futures, forwards, options and swaps
- Types of risks: operational risks, political risks, economic risks, fiscal risks, regulatory risks, currency risks and interest rate risks

- Foreign currency risk management: Types of forex risks, hedging currency risks, forward contracts, money market hedge, currency options, currency futures and currency swaps
- Interest rate risks: Term structure of interest rates, forward rate agreement, interest rate futures, interest rate swaps, interest rate options

15.7 International financial management

- International investments
- International financial markets
- International financial institutions
- Methods of financing international trade
- International parity conditions: Interest rate parity, purchasing power parity and International fisher effect
- International arbitrage: locational arbitrage, triangular arbitrage and covered interest arbitrage
- Divided policy for multinationals
- International debt instruments: International bonds (euro bond), certificate of deposits, securitisation of loans, commercial paper
- Availability and timing of remittances
- Transfer pricing: impact on taxes and dividends

15.8 Real estate finance

- Overview of real estate business - nature of real estate business, legal and economic framework and participants in real estate business in Kenya
- Valuation approaches (income, cost and sales comparison approaches)
- REITS: types; advantages and disadvantages; valuation: net asset value per share (NAVPS); use of funds from operations (FFO), adjusted funds from operations (AFFO) in REIT valuation
- Instruments of real estate financing - mortgages, lien, title, mortgage requirements and mortgage clauses
- Rights in case of debt - default and its consequence, equity of redemption, foreclosure, statutory redemptions
- Mortgage and financial markets: demand for funds in mortgage market, disintermediation effects, primary and secondary mortgage market, mortgage market and cost of money, role of central bank and the role of government in mortgage markets
- Savings and loan association - classification, state accounts, insurers. Mortgage backed bonds and services

15.9 Emerging issues and trends

CONTENT **PAGE**

PART A: PAST PAPERS QUESTIONS

PART B: SUGGESTED SOLUTION TO PAST PAPERS QUESTIONS

PART A:

PAST PAPERS QUESTIONS

TOPIC 1

ADVANCED CAPITAL BUDGETING DECISION

QUESTION 1

November 2020 Question One C

Chanzu Ltd. is considering a project which would cost Sh.5,000,000 now. The annual benefits for four years, would be a fixed income of Sh.2,500,000 per annum plus other savings of Sh.500,000 in year 1, rising by 5% each year because of inflation. Running costs will be Sh.1,000,000 in the first year but would increase at a rate of 10% each year because of inflating labour costs.

The general rate of inflation is expected to be 7.5% per annum and the firm's required nominal rate of return is 16%.

Required:

(i) Advise the management of Chanzu Limited on whether to undertake the project. (4 marks)

(ii) Comment on the impact of inflation in (c) (4) above. (2 marks)

QUESTION 2

November 2020 Question Four C

Describe four types of real options available to the management while making strategic capital budgeting 'decisions of a firm. (4 marks)

QUESTION 3

November 2019 Question One B

Sunny Technologies Ltd. is considering investing Sh.50 million in a new machine to manufacture computer microchips with an expected useful life of 5 years and no salvage value. It is expected that 20 million units of micro chips will be sold each year at Sh.3.00 per unit. Variable production costs are expected to be Sh.1.65 per unit, while incremental fixed costs will be Sh.10 million per annum.

The cost of capital is 12%.

Required:

Evaluate the sensitivity of the project's net present value (NPV) to the following changes:

(i) Sales volume. (3 marks)

(ii) Sales price. (3 marks)

(iii) Variable costs. (3 marks)

QUESTION 4

November 2019 Question One C

Further analysis of the company in (b) above suggests that sales volumes could depend on expected economic state as follows:

Economic state	**Poor**	**Normal**	**Good**
Probability	0.30	0.60	0.10
Annual sales volume (units)	17,500,000	20,000,000	22,500,000

Required

The expected net present value (NPV) of the project using scenario analysis (5 marks)

QUESTION 5

November 2019 Question Two A

Kanga Limited is considering the design of a new conveyor system. The management **must choose among the following three alternative courses of action:**

Option l

The firm could sell the design outright to another corporation with payments over 2 years.

Option 2

The firm could license the design to another manufacturer for a period of 5 years which is likely to be the product life cycle of the conveyor system.

Option 3

The company could manufacture and market the system itself. This alternative will result in 6 years of cash inflows.

Cash flows associated with each alternative are as shown below:

Alternative	**Sell**	**License**	**Manufacture**
Initial investment, 10 (Sh.)	400,000	400 000	900,000
Year		**Cash inflows (Sh.)**	
1	400,000	500,000	400,000
2	500,000	200,000	500,000
3		160,000	400,000
4		120,000	400,000
5		80,000	400,000
6			400,000

The company has a cost of capital of 12%.

Required:

Advise Kanga Limited on the best alternative based on:

(i) Net present value (NPV) approach. (3 marks)

(ii) Annualised net present value (ANPV) approach. (3 marks)

(iii) Compare and contrast your results obtained in (a) (i) and (ii) above. (2 marks)

QUESTION 6

May 2019 Question Five A

Jeza Tours and Travel is a private limited company in the tourism industry. In order to improve customer service and provide the management with timely and quality information, the company is contemplating to purchase 8 micro-computers at a cost of Sh. 100,000 each.

Installation cost for all the computers will amount to Sh.80,000. It is estimated that once installed, the computers will increase the company's earnings before depreciation and tax from Sh. 12.000.000 to Sh. 12.500,000 annually.

The computers are expected to last for 10 years after which they will be obsolete with no resale value.

The Operations Manager proposes that the computers will be useful for 15 years with no resale value.

The Marketing Manager, on the other hand argues that the company needs the computers for only 5 years, after which they can be disposed of at Sh. 50,000 each.

The probability distribution of the useful life of the computers is given as follows:

Probability	Useful life of computers (years)
0.20	5
0.50	10
0.30	15

The company is in the 30% tax bracket.

The company's cost of capital is 24% and uses the straight-line method of depreciation.

Required:

(i) The expected net present value of the project. (4 marks)

(ii) The standard deviation of the expected net present value. (3 marks)

(iii) If the net present value (NPV) of the project is less than Sh.200.000, the firm will be exposed to a financial distress.

Determine the probability that the firm will avoid financial distress. (Assume normal distribution). (3 marks)

QUESTION 7

November 2018 Question Two A

Discuss three practical challenges that could be encountered when making capital investment decisions. (6 marks)

QUESTION 8

November 2018 Question Two B

Galanema Ltd. is considering to introduce new cheap plastic rulers into the market. This will involve investing in a new plant at a cost of Sh.280 million.

The plant is expected to have a useful life of 5 years at the end of which salvage value will be nil. The firm's policy is to depreciate all of its fixed assets on a straight line basis.

Due to market uncertainties, the unit selling price, unit variable cost and annual sales volume of the new plastic rulers have been estimated stochastically as follows:

Unit selling price		Unit variable cost		Annual sales volume	
Value	**Probability**	**Value**	**Probability**	**Value**	**Probability**
(Sh.)		**(Sh.)**		**(Sh."million")**	
35	0.30	15	0.20	4	0.10
30	0.40	10	0.50	7	0.60
50	0.30	25	0.30	9	0.30

Additional information:

1. The firm expects to incur fixed operating costs excluding depreciation of Sh.30 million in each year.
2. The company's cost of capital is 17%.
3. The corporate tax rate is 30%.

Required:

(i) The expected net present value (NPV) of the new product. (6 marks)

(ii) Simulate the net present values (NPV) using the following random numbers:

(802560 638351 057530 150353 603785 553525 245239 369948 160252 857015) and compute the expected net present value of the project. (8 marks)

QUESTION 9

May 2018 Question One B

In relation to investment appraisal, evaluate four limitations of sensitivity analysis.

(4 marks)

QUESTION 10

May 2018 Question One C

Tabby Ltd. has a potential investment opportunity for which the initial cash outlay and future cash flows are uncertain. The analysis carried out provided the following probability estimates:

Probability estimates

Cash outlay		**Annual cash inflows**	
Probability	**Amount Sh.“000”**	**Probability**	**Amount Sh.“000”**
0.40	250,000	0.20	45,000
0.25	280,000		
		0.40	50,000
0.25	300,000		
0.10	305,000	0.40	60,000

Additional information:

1. The cost of capital is 10%.

2. Life of the project is expected to be 10 years.
3. The salvage value is zero.

Required:

(i) Construct a decision tree for the investment to show pay offs, probabilities and net present value (NPV) for each alternative. (6 marks)

(ii) The expected NPV of the project. (3 marks)

(iii) If the NPV of the project is less than Sh.5 million, Tabby Ltd. would be exposed to a hostile takeover. Compute the probability that Tabby Ltd. will avoid a hostile takeover.

(Assume a normal distribution and that the variance of the NPV is Slid ,861.47 million). (3 marks)

QUESTION 11

May 2018 Question Three B

Explain five factors that Multinational Corporations (MNCs) should consider when making long-term investment decisions. (5 marks)

QUESTION 12

November 2017 Question One B

Viwanda Ltd. is considering purchasing a machine at a cost of Sh.40 million. The company will incur an additional Sh.20 million to modify the machine for special use.

The machine is expected to have a useful life of 3 years and a scrap value of Sh. 15 million after 3 years.

This investment will require an increase in net working capital of Sh.2 million at the beginning of its useful life.

The additional investment in working capital will return to normal at the end of the machine's useful life.

The machine's purchase will not affect revenues but it is expected to save the company Sh.25 million each year in before tax operating costs, mainly labour.

The corporation tax rate is 30% and the company's cost of capital is 10%.

Required:

(i) Advise Viwanda Ltd. on whether to buy the machine. (6 marks)

(ii) Suppose the firm's management is unsure about the savings in before tax operating costs. Carry out a sensitivity analysis on this variable assuming that the variable shall vary adversely by 10%. (8 marks)

QUESTION 13

May 2017 Question Five B

Chuma Ltd. operates a machine which has the following maintenance costs and resale values over its four-year life. The purchase price of the machine is Sh.25,000,000.

	Year 1 Sh. "000"	Year 2 Sh. "000"	Year 3 Sh. "000"	Year 4 Sh. "000"
Maintenance costs	7,500	11,000	12,500	15,000
Resale value (end of year)	15,000	10,000	7,500	2,500

The company's cost of capital is 10%.

Required:

Advise the management of Chuma Ltd. on how frequently the machine should be replaced. (12 marks)

QUESTION 14

November 2016 Question One A

Summarise three assumptions of the Grossman-Hart Model (1986). (6 marks)

QUESTION 15

November 2016 Question One B

SKB Ltd. is considering a proposal to manufacture a new drug named "Millenium". The drug will be manufactured using a machine which will cost Sh. 13 million.

The cash Hows and drug life relating to "Millenium" have been estimated as stochastic exogenous variables with the following distributions:

Annual after tax cash flow (Sh."000")	Probability	Drug life in years	Probability
1.000	0.02	3	0.05
1,500	0.03	4	0.10
2.000	0.15	5	0.30
2.500	0.15	6	0.25
3,000	0.30	7	0.15
3.500	.0.20	8	0.10
4,000	0.15	9	0.03
		10	0.02

The minimum required rate of return from this investment is 16%.

The company has approached you as a financial management expert to perform an analysis of the above project.

Required:

(i) Using the following random numbers, perform 10 simulation runs of the net present value (NPV) of this project.

5397 6699 3081 1909 3167 8170 3875 4883 9033 5852 (12 marks)

(ii) Determine the expected net present value (NPV) of the project. (2 marks)

QUESTION 16

May 2016 Question One A

In the context of appraisal of capital investments under conditions of uncertainty, explain four limitations of utility analysis. (8 marks)

QUESTION 17

May 2016 Question One B

Planet Ltd. is considering undertaking a 20-year project which requires an initial investment of Sh.250 million in a real estate partnership and whose present value (PV) of expected cash flows is Sh.254 million. Planet Ltd. has the option to abandon the project any time in the next five years for Sh.150 million. The variance in the present value (PV) of the cash flows is 0.09 and the 5-year risk-free rate is 7%.

Required:

(i) The net present value (NPV) of the project including the option to abandon the project. (10 marks)

(ii) Comment on the results of your analysis in (b)(i) above. (2 marks)

Note:

1. The Black-Scholes Option Pricing Model

$$C = P_e N(d_1) - P_e N(d_2) e^{-rt}$$

Where:

$$d_1 = \frac{\ln\left[\frac{P_a}{P_e}\right] + (r + 0.5s^2)t}{s\sqrt{t}}$$

$$d_2 = d_1 - s\sqrt{t}$$

2. The Put-Call Parity Relationship

$$P = C - P_a + P_e e^{-rt}$$

QUESTION 18

November 2015 Question One B

A company is considering whether to purchase equipment to increase its production and sales volumes. The equipment costs Sh.500,000,000 and has a useful life of three years after which it can be sold as scrap for Sh.80,000,000. For each of the three years of usage, the equipment is expected to increase both sales revenue and operating costs by Sh.600,000,000 and Sh.390,000.000 respectively . The company's cost of capital is 10%.

Required:

Compute the percentage change required in each of the following factors for the project to be rejected:

(i) Initial cost of the equipment. (4 marks)

(ii) Scrap value of the equipment. (2 marks)

(iii) Sales revenue. (4 marks)

QUESTION 19

May 2015 Question One B

Chuma Ltd. is considering replacing a machine. The existing machine was bought three years ago at a price of Sh.50 million. The price is expected to have a useful life of 5 more years with no scrap value at the end of useful life. The machine could be disposed of immediately at Sh. 35 million. The machine will cost Sh. 80 million with a useful life of 5 years and an expected terminal value of Sh. 5 million. With the introduction of the new machine, sales are expected to increase by Sh. 25 million per annum over the past five years.

The contribution margin is expected to be 40% and the corporate tax is 30%. The operation of the new machine will also require an immediate investment of Sh. 8 million in working capital. Installation costs of the new machine will amount to Sh. 6 million

Depreciation is to be provided on a straight line basis. The company's cost of capital is 12%

Required

Advise the management of Chuma Ltd. on whether to replace the machine. (12 marks)

TOPIC 2

PORTFOLIO THEORY AND ANALYSIS

QUESTION 1

November 2020 Question Two A

The following information relates to two mutual funds operating in your country:

	Omega Mutual fund	**Beta Mutual fund**
Realised return	13%	18%
Beta	10	2.0
Standard deviation	19%	15%

Additional information:

1. The return on the market index is 12%.
2. The risk free rate is 8%.

Required:
For each of the above mutual funds, compute the following performance index scores:

(i) Jensen's alpha. (2 marks)

(ii) Treynor's alpha. (2 marks)

(iii) Sharpe index for the funds and the market. (3 marks)

QUESTION 2

November 2020 Question Two B

The estimated factor sensitivities of Diamond Ltd. to Fama-French factors and the Pastor-Stambaugh model factors and the risk premium associated with those factors are given in the table below: :

	Factor sensitivity.	Risk premium (%)
Market factor	1.05	5.00
Size factor	-0.65	2.50
Value factor	-0.20	450
Liquidity factor	0.20	4.50

The treasury bill rate is 5%

Required:

(i) The required rate using the Fama-French model. (3 marks)

(ii) The required rate of return using the Pastor-Stambaugh model (PSM). (3 marks)

QUESTION 3

November 2020 Question Three B

The shareholders of Mali Investment Holdings have for the last two years managed to save an accumulated fund of Sh.15 million available for investment. A financial analyst they hired to appraise some possible projects they can invest in, has availed the following information:

Project	Initial cash outlay Sh."000"	Expected return (%)	Standard Deviation (%)
P	9,000	12	2.5
Q	7,000	21	1.8
R	6,000	16	2.3
S	8,000	14	1.6

The co-variances between various projects contribution are as follows:

Project pairing	Covariance
PQ	-3.1
PR	1.3
PS	-4.1
QR	1.5
QS	1.7
RS	2.7

Additional information:

l. The management is planning to invest by pairing the projects.
2. The maximum capital that can be invested is the accumulated fund as shown above.
3. Any paired project is mutually exclusive and none of the projects is divisible.

Required:

(i) For each possible project pair combination, calculate the expected return, correlation coefficient and standard deviation. (12 marks)

(ii) Advice the shareholders of Mali Investment Holdings on the optimal project pair based on the mean variance criterion. (2 marks)

QUESTION 4

November 2019 Question Three B

Duncan Kipchumba has an investment capital of Sh.1,000,000. He wishes to invest the fund in two securities, X and Y in the following proportion; Sh.200,000 in security X and Sh.800,000 in security Y.

The return on these two securities depend on the state of the economy, as shown below:

State of economy	Probability	Returns on security X	Returns on security Y
Boom	0.40	18%	24%
Normal	0.50	14%	22%
Recession	0.10	12%	21%

Required:

(i) The expected return on the portfolio. (3 marks)

(ii) The correlation coefficient between security X and security Y. (4 marks)

(iii) The portfolio risk. (2 marks)

(iv) The reduction in risk due to portfolio diversification. (2 marks)

QUESTION 5

November 2019 Question Three C

Job Ochieng, an investor, believes that there are three important factors that determine the expected return for a particular common stock. Job uses the following factor betas and factor risk premiums:

Factor	Factor beta	Factor risk premium
1	0.70	2.5%
2	1.20	5.0%
3	- 0.10	6.0%

The risk-free rate is 5%.

Required:

(i) The expected return for the stock using the arbitrage pricing theory (APT) model.

(ii) Explain two differences between capital asset pricing model (CAPM) and arbitrage pricing theory (APT) model. (2 marks)

QUESTION 6

May 2019 Question One A

Discuss four applications of the capital asset pricing model (CAPM). (8 marks)

QUESTION 7

November 2018 Question One C

The following data relate to the probability distributions and returns of securities A and B:

Probability (Ps)	Security returns (%)	
	Security A	Security B
0.10	-5	10
0.25	10	15
0.40	15	10
0.25	20	0

Required:

The proportion of each security to be invested in the portfolio in order to attain a zero portfolio risk. (6 marks)

QUESTION 8

November 2018 Question Four B

The following information relate to two securities, namely A and B and the market portfolio for the year 2018:

Probability	Forecasted rate of returns (%)		
	Security A	Security B	Market Portfolio
0.2	15	12	16
0.5	10	15	12
0.3	8	10	7

The treasury bills yield rate is expected to be 8%.

Required:

(i) The Beta coefficient of securities A and B. (4 marks)

(ii) Using capital asset pricing model (CAPM), determine the minimum required rate of returns for securities A and B. (2 marks)

QUESTION 9

May 2018 Question Two A

The capital asset pricing model (CAPM) is subject to theoretical and practical limitations. Theoretical limitations are inherent in the structure of the model, whereas practical limitations arise in implementing the model.

Required:

Summarise two practical limitations of CAPM. (2 marks)

QUESTION 10

May 2018 Question Two B

A portfolio manager creates the following portfolio:

Security	Expected annual return (%)	Expected standard deviation (%)
1	16	20
2	12	20

Required:

(i) The proportion invested in Security I, if the portfolio of the two securities has an expected return of 15%. (1 mark)

(ii) The expected standard deviation of an equal-weighted portfolio, if the correlation of returns between the two securities is-0.15. (2 marks)

(iii) The expected standard deviation of an equal-weighted portfolio, if the returns of the two securities are uncorrelated. (2 marks)

QUESTION 11

May 2018 Question Two C

Kent Investment Fund (KIF) in which you plan to invest has a total capital of Sh.500 million invested in the shares of five companies as follows:

Company	Amount invested in shares Sh."million"	Beta coefficient
Alpha Ltd.	140	0.8
Beta Ltd.	80	1.5
Chatter Ltd.	120	3.0
Dinner Ltd.	100	1.0
Eastern Ltd.	60	2.5

Additional information:

1. The beta coefficient of KIF can be determined as a weighted average of the fund's investment.
2. The current risk-free rate of return is 8%.
3. The market returns have the following estimated probability distribution for the next period:

Probability	Market return (%)
0.1	7
0.2	9
0.4	11
0.2	13
0.1	15

Required:

(i) The estimated equation of the security market line (SML). (3 marks)

(ii) The fund's required rate of return for the next period. (3 marks)

(iii) Suppose Anthony Muli, the Chief Investment Officer (CIO) of KIF receives a proposal to invest in a new company. The investment needed to take a position in the new company's shares is Sh,50 million.

The forecasted rate of return from this investment and the probability of their occurrence in different states of nature, are given as follows:

State of Nature	Probability	Forecasted rate of return (%)
A	0.1	10
B	0.2	15
C	0.4	20
D	0.2	10
E	0.1	15

Using the capital asset pricing model (CAPM), advise Anthony Muli on whether to invest in the new company's shares. (7 marks)

QUESTION 12

November 2017 Question Two C

Wekeza Investments has initiated an investment fund called "Faidika" the funds of which will be invested only in stocks and bonds of infrastructure and construction companies.

60% of the fund value is invested in companies engaged in commercial construction services and the other 40% in companies engaged in developing residential properties. The average beta of returns from development of residential properties is i .9 and that of commercial construction services is 1.4.

The benchmark market return is 11.2% while Treasury bonds carry an interest rate of 4.25%.

The following information on the net asset values (NAV) per share is provided:

Month	**January**	**February**	**March**	**April**	**May**	**June**
Closing NAV "Sh"	18.60	17.80	18.20	18.00	17.80	16.80
Dividend payout "Sh"	-	0.75	-	-	-	1.20

Month	**July**	**August**	**Sept**	**Oct**	**Nov**	**Dec**
Closing NAV "Sh"	17.20	17.80	17.90	18.10	18.80	18.50
Dividend payout "Sh"	-	-	-	-	-	-

The opening NAV for January is Sh, 17.75.

Required:

Calculate Jensen's alpha relating to "Faidika" and use it to evaluate the fund's performance. (10 marks)

QUESTION 13

May 2017 Question Two B

The following information relates to the performance of six portfolios over a seven-year period:

Portfolio	Average annual returns (%)	Standard deviation of the average annual returns (%)	Correlation with market returns
P	18.6	27.0	0.81
Q	14.8	18.0	0.65
R	15.1	8.0	0.98
S	22.0	21.2	0.75
T	-9.0	4.0	0.45
U	26.5	19.3	0.63
Market return	12.0	12.0	-
Risk-free rate	9.0	-	-

Required:

Rank the performance of the above portfolios using:

(i) Sharpe's method. (4 marks)

(ii) Treynor's method. (4 marks)

QUESTION 14

May 2017 Question Two C

Compare the rankings using the two methods in (b) above and explain two reasons behind the differences. (4 marks)

QUESTION 15

November 2016 Question Two A

Explain three challenges likely to be encountered in the application of the capital asset pricing model (CAPM). (6 marks)

QUESTION 16

November 2016 Question Two B

Moses Mapesa is in the process of evaluating investments in two companies whose percentage returns in the last 10 years are as shown below:

Year / Company and percentage return	1	2	3	4	5	6	7	8	9	10
FS Ltd. (%)	37	24	-7	6	18	32	-5	21	18	6
SN Ltd. (%)	32	29	-12	1	15	30	0	18	27	10

Required:

(i) Correlation coefficient of the companies' returns. (6 marks)

(ii) Portfolio risk assuming equal weighting. (2 marks)

QUESTION 17

November 2016 Question Two C

Mary Chege has been investing in the shares of various companies quoted on the securities exchange. Currently, she holds a portfolio of shares in four companies: W, X, Y and Z.

The following information has been provided:

Company	Number of shares held	Equity Beta	Market price per share (Sh.)	Expected return on equity
W	10,000	1.12	130	18%
X	15,000	0.89	100	23%
Y	15,000	0.70	90	11%
Z	10,000	1.60	160	17%

The current market return is 14% per annum and the Treasury Bill's yield is 9% per annum.

Required:

(i) The risk of Mary C'hege's portfolio relative to that of the market. (4 marks)

(ii) Determine whether Mary Chege should change the composition of her portfolio.

(2 marks)

QUESTION 18

May 2016 Question Two A

Biashara Ltd. wishes to invest in stocks M and N in two different industries. The following information relates to the two stocks:

	Stock M	**Stock N**
Expected return (%)	18	16
Standard deviation (%)	8	6
Beta coefficient	1.80	1.50
Amount of money invested (Sh.)	1,200,000	800,000

Required:

(i) The expected portfolio return. (4 marks)

(ii) Explain the effect on the portfolio risk if the returns of stocks M and N were perfectly positively correlated.

Include suitable calculations. (6 marks)

QUESTION 19

May 2016 Question Two B

Mapeni Ltd's investment fund comprises four major projects. The details of the projects are as follows:

Project	**Market value of the fund (%)**	**Expected return (%)**	**Standard deviation (%)**	**Coefficient of correlation with the market**
1	28	10	15	0.55
2	17	18	20	0.75
3	31	15	14	0.84
4	24	13	18	0.62

The risk-free rate is 5% and the market return is 14%. The standard deviation of the market return is 13%.

Required:

(i) The beta coefficient of the investment fund. (4 marks)

(ii) By comparing the expected return and the required return, advise whether Mapeni Ltd. should change the composition of its portfolio. (6 marks)

QUESTION 20

November 2015 Question Two A

In most cases, the assumption is that investors are risk-averse, that is. they like returns and dislike risk.

With reference to the above statement, explain why it is argued that only systematic risk and not total risk is important. (4 marks)

QUESTION 21

November 2015 Question Two B

In the context of portfolio theory, explain the meaning of "beta coefficient".

(2 marks)

QUESTION 22

November 2015 Question Two C

The following data have been provided with respect to three shares traded on the Nairobi Securities Exchange (NSE):

	Share A	Share B	Share C
Risk-free rate of return	12%	12%	12%
Beta coefficient	1.340	1.000	0.750
Return on the NSE index	0.	185	0.185

Required:

(i) Interpret the beta coefficients of shares A. B and C. (3 marks)

(ii) Using the capital asset pricing model (CAPM), compute the expected return on shares A, B and C. (3 marks)

QUESTION 23

November 2015 Question Two D

The following information relates to portfolios P and N:

	Portfolio P	Portfolio N
Average return	35%	28%
Beta	1.25	1.00
Standard deviation	42%	30%
Non-systematic risk	18%	10%

Assume that the risk free rate is 6% and the average market return is 15%.

Required:

(i) Sharpe's performance measure for portfolios P and N. (2 marks)

(ii) Treynor's performance measure for portfolios P and N. (2 marks)

(iii) Jensen's performance measure for portfolios P and N. (2 marks)

(iv) The appraisal ratio for portfolios P and N. (2 marks)

QUESTION 24

May 2015 Question Two A

"Corporate diversification and conglomerate mergers are an experiment in portfolio theory applied in corporations"

Explain the statement (4 marks)

QUESTION 25

May 2015 Question Two A

Describe how each of the following portfolio performance measures are used:

i. Treynor's ratio

ii. Jensen's alpha

QUESTION 26

May 2015 Question Two C

The risk and return characteristics of two assets are shown below.

Asset	A	B
Expected return	12%	20%
Risk	3%	7%

Uchumi Investment Company plans to invest 80% of its available funds in A and 20% in asset B. The board of directors of the company believe that the correlation coefficient between the returns of these assets is +0.1.

Required

i. The expected return from the proposed portfolio of asset A and asset B (2 marks)

ii. The risk of the portfolio (2 marks)

iii. Comment on the calculations in part (c) (iii) above in the context of the risk-reducing effects of diversification (4 marks)

iv. Suppose the correlation coefficient between the returns of asset A and asset B was -10. Demonstrate how Uchumi Investment Company could invest its funds in order to obtain a zero-risk portfolio

TOPIC 3

ADVANCED FINANCING DECISION

QUESTION 1

November 2020 Question Five B

Zeltex Ltd. is an unlevered firm. The firm expects to generate operating profit (EBIT) of Sh.20 million each year to perpetuity.

The firm's current market value is Sh.80 million and pays corporation tax at the rate of 30%. The management of the firm is considering the use of debt financing. The firm's financial analysts have estimated that the present value of any future financial distress costs is Sh.8 million and that the probability of financial distress would increase with leverage according to the following schedule:

Value of debt (Sh.m)	Probability of financial distress	Pre-tax cost of debt (%)
2.5	0.00	6
5.0	0.0125	7.5
7.5	0.025	9
10	0.0625	10
12.5	0.125	11.5
15	0.3125	12.5
20	0.75	14

Additional information:

1. The firm's ungeared asset beta is 0.60
2. The risk free rate of return is 8%.
3. Expected return of the market portfolio is 15%.
4. The cost of equity of a levered firm shall be captured using capital asset pricing model (CAPM)
5. The Hamada model shall be applied to capture the levered equity Beta.

Required:

(i) The current cost of equity and weighted average cost of capital (WACC). (2 marks)

(ii) The firm's optimal level of debt using the "pure" Modigliani and Miller with corporation tax model (4 marks)

(iii) The firm's optimal weighted average cost of capital (WACC) and hence its optimal capital structure proportions. (8 marks)

QUESTION 2

November 2019 Question Two B

Kanga Limited is considering the design of a new conveyor system. The management **must choose among the following three alternative courses of action:**

Option l

The firm could sell the design outright to another corporation with payments over 2 years.

Option 2

The firm could license the design to another manufacturer for a period of 5 years which is likely to be the product life cycle of the conveyor system.

Option 3

The company could manufacture and market the system itself. This alternative will result in 6 years of cash inflows.

Cash flows associated with each alternative are as shown below:

Alternative	**Sell**	**License**	**Manufacture**
Initial investment, 10 (Sh.)	400,000	400 000	900,000
Year		**Cash inflows (Sh.)**	
1	400,000	500,000	400,000
2	500,000	200,000	500,000
3		160,000	400,000
4		120,000	400,000
5		80,000	400,000
6			400,000

The company has a cost of capital of 12%.

Required:

Advise Kanga Limited on the best alternative based on:

(i) Net present value (NPV) approach. (3 marks)

(ii) Annualised net present value (ANPV) approach. (3 marks)

(iii) Compare and contrast your results obtained in (a) (i) and (ii) above. (2 marks)

QUESTION 3

November 2019 Question Four B

Property A and property B are categorised under the real estate category. Property A is all equity financed while property B is financed partly using debt and partly by equity finance.

Both properties generated operating profit (EBIT) of Sh.41,245,900 annually. This is expected to remain constant each year in perpetuity. Unlike property A which is wholly equity financed, property B is financed partly by equity and partly by 10% debt of Sh.215,000.000.

The cost of equity is 12% for both properties and there are no corporation taxes. Each unit of debt is trading at par.

Required:

The current value of each property using the Net Income (NI) approach. (4 marks)

QUESTION 4

November 2019 Question Four C

Smoothdrive Ltd., a motor vehicle assembly company issued a 10 year, 16%, Sh.100 million par value bond five years ago. The bond was issued at 2% discount and issuing costs amounted to Sh.2 million.

Due to the decline in Treasury bill rates in the recent past, interest rates in the money market have been falling presenting favourable opportunities for refinancing. A financial analyst engaged by the company to assess the possibility of refinancing the debt reports that a new Sh.100 million par value, 12%, 5-year bond could be issued by the company. Issuing costs for the new bond will be 5% of the par value and a discount of 3% will have to be given to attract investors.

The old bond can be redeemed at 10% premium and in addition, two months interest penalty will have to be paid on redemption. All bond issue expenses (including the interest penalty) are amortised on a straight-line basis over the life of the bond and are allowable for corporate tax purposes.

The applicable corporate tax rate is 40% and the after tax cost of debt to the company is approximately 7%.

Required:

(i) The initial investment required to issue the new bond. (4 marks)

(ii) Annual cash flow savings (if any) expected from the bond refinancing decision. (4 marks)

(iii) The net present value (NPV) of the refinancing decision. (1 mark)

(iv) Advise the company on whether to refinance the bond based on your results in (c) (iii) above. (1 mark)

QUESTION 5

November 2019 Question Five C

Twiga Limited has 500,000 ordinary shares trading at Sh.150 each in the Securities Exchange.

Additional information:

1. The dividend payable in one year period is Sh.3 per share.
2. An investment opportunity worth Sh.25 million is to be undertaken. The profit to be earned is Sh.15 million.
3. The cost of capital for the company is 10%.

Required:

Using Modigliani and Miller approach, show that the payment of dividends does not affect the value of the firm. (7 marks)

QUESTION 6

May 2019 Question One B

Dzikunze Manufacturing Limited is considering to raise an extra Sh.10 million in order to finance an expansion programme.

The company's current capital structure is given as follows:

	Sh. "000"
Ordinary share capital (Sh.20 par value)	50,000
Reserves	20,000
14% debenture capital	20,000
10% preference share capital	10,000
	100,000

Additional information:

1. The company is considering raising the funds using two alternative financing options namely:

   Option I:
   To raise all the funds through the issue of new ordinary shares at par.

   Option II:
   To raise half of the funds through the issue of new ordinary shares at par and the balance through the issue of new 12% debentures at par.

2. The corporation tax rate is 30%.

Required:

(i) Earnings before interest and tax (EBIT) at the point of indifference in company's earnings for each financing option. (8 marks)

(ii) Earnings per share (EPS) at the point of indifference in (b) (i) above. (4 marks)

QUESTION 7

May 2019 Question Two C

Umoja Group of companies belongs to a risk class of which the appropriate capitalisation rate is 10%.

The company currently has in issue 200,000 ordinary shares selling at Sh.50 each. The company is contemplating the declaration of dividend at the rate of Sh.3 per share at the end of the current financial year which has just begun.

Required:

Using Modigliani and Miller proposition on dividend irrelevance, determine:

(i) The price of the ordinary shares at the end of the year, assuming a dividend is not declared. (2 marks)

(ii) The price of the ordinary shares at the end of the year, assuming a dividend is declared. (2 marks)

(iii) Assuming that the company generates a net income of Sh.2,000,000 and makes new investments of Sh.4,000,000 during the period.

Show that under the Modigliani and Miller's assumption, payment or non-payment of dividends has no effect on the company's value. (6 marks)

QUESTION 8

May 2019 Question Three B

Zomolo Limited is a firm operating in the manufacturing industry. The firm's current capital structure is given as follows:

	Sh. "000"
Ordinary share capital (Sh. 10 par value)	80,000
Reserves	20,000
10% irredeemable debenture capital (Sh. 100 par value)	30,000
8% preference share capital (Sh.20 par value)	20,000
	150,000

Additional information:

1. The current market price per share (MPS) of the firm's ordinary shares is Sh. 34.80 cum-dividend.

2. The firm adopts a 60% dividend payout ratio.

3. The most recent earnings per share (EPS) of the firm is Sh.8.00.

4. The historical dividend per share (DPS) over the last four years are given as follows:

Year	**Dividend per share (DPS) (Sh.)**
2015	4.00
2016	4.20

2017	4.50
2018	4.80

5. The firm's management is contemplating to invest in a project which would cost Sh.40 million. The project is expected to generate Sh.9 million each year in perpetuity.

6. The project has an estimated beta of 1.50.

7. The return from a well diversified market portfolio is 18%.

8. The debentures are considered to be risk-free and are valued at par.

9. The existing 8% irredeemable preference shares are currently trading at Sh.25 each.

10. The corporation tax rate is 30%.

Required:

(i) Thefirm's return on equity (ROE) using Gordon's growth approximation method. (3 marks)

(ii) The firm's existing weighted average cost of capital (WACC). (6 marks)

(iii) The project's risk adjusted discounting rate (RADR). (3 marks)

QUESTION 9

May 2019 Question Four B

Ziani Limited, an unlevered firm has in issue 10 million ordinary shares that are currently selling at the securities exchange for Sh.20 each.

Additional information:

1. The firm's most recent earnings per share (EPS) is Sh.4.0 and adopts a 100% dividend payout.

2. It is expected that the firm's future dividends in each year will remain constant in perpetuity.

3. The firm is considering to issue 12% new debentures to raise Sh.50 million in order to finance an expansion programme. This will effectively change the status of the firm from unlevered to a levered firm.

4. The firm pays corporation tax at the rate of 30%.

Required:

Using Modigliani and Miller's propositions, determine:

(i) The cost of equity before and after issue of the long-term debt. (3 marks)

(ii) The weighted average cost of capital (WACC) before and after issue of the debt. (3 marks)

(iii) The current market value of the firm before and after issue of the debt. (2 marks)

(iv) Advise the management of Ziani Limited on whether to change its capital structure. (2 marks)

QUESTION 10

November 2018 Question Five C

Embakasi Investment Ltd. contemplates to determine its optimal capital structure which currently consists of only debt and common equity.

The company does not use preference shares in its capital structure and does not plan to do so in the near future.

In order to estimate how much its debt would cost at different debt levels, the company's financial controller has consulted with investment banks and the following information was obtained:

Debt to equity ratio	Bond rating	Before tax cost of debt (%)
0.00	A	0
0.25	BBB	8.5
0.60	BB	10
1.70	C	14
2.50	D	16

Additional information:

1. The company uses the capital asset pricing model (CAPM) to estimate the cost of capital.
2. The risk-free rate of return is 5%.
3. The market risk premium is 8%.
4. The corporate tax rate is 30%.
5. The company uses the Hamada model to determine its levered equity Beta.

6. The asset Beta (unlevered equity Beta) is 1.20.

Required:

(i) The optimal capital structure of Embakasi Investment Ltd. (6 marks)

(ii) The optimal weighted average cost of capital (WACC) of Embakasi Investment Ltd. (1 mark)

QUESTION 11

May 2018 Question Four B

Lagdara Ltd., an unlevered firm, operates in the textile industry. The firm's current capital structure is summarised as follows:

	Sh. "000"
Ordinary share capital (Sh.50 par value)	120,000
Share premium	40,000
Retained earnings	80.000
Shareholders' funds	240,000

The firm is considering borrowing 10% debt finance of Sh.40 million in order to finance an expansion programme, making it a levered firm.

Additional information:

1. Annual earnings before interest and tax (EBIT) generated by the firm are Sh.60 million. This is expected to remain constant each year in perpetuity.
2. The firm's ordinary shares are currently trading at a market price per share (MPS) of Sh.200 at the securities exchange.
3. The corporate tax rate applicable is 30%.

Required:

(i) Using the Modigliani-Miller (M-M) approach and the information provided above, analyse the financial implications of the change in capital structure of Lagdara Ltd. (9 marks)

(ii) Justifying your answer, advise the management of Lagdara Ltd. on whether to change its capital structure. (2 marks)

QUESTION 12

May 2018 Question Five A

Assess five limitations of applying the free cash flow (FCF) approach using the weighted average cost of capital (WACC) as a discount rate when evaluating projects with different risks or debt capacity (5 marks)

QUESTION 13

November 2017 Question Four A

Two CPA graduates have formed a company to write, market and distribute text books and revision manuals. The company's text books and revision manuals have already been piloted and the market prospects are good. All that is lacking is adequate financing to continue the project. A small group of private investors is interested in financing the new company. Two financing proposals are being evaluated.

1. Financing option one:

This is an all equity capital structure. Three million shillings would be raised by selling ordinary shares at Sh.40 per share.

2. Financing option two:

This will involve the use of financial leverage.

One million shillings would be raised by selling corporate bonds with an effective interest rate of 14 per cent per annum. The remaining Sh. 2 million would be raised by selling ordinary shares at Sh.40 per share. The use of financial leverage is considered to be a permanent part of the firm's capital so no fixed maturity date is needed for the analysis.

3. The corporation tax rate appropriate for this analysis is 30%.

Required:

(i) Find the operating profit (EBIT) indifference level associated with the two financing plans. (4 marks)

(ii) Construct an EPS-EB1T graph for the two financing plans. (4 marks)

(iii) Determine the range of operating profit (EBIT) within which each financing plan above would be recommended. (2 marks)

QUESTION 14

November 2017 Question Four B

The following data relate to two companies; Alpha Ltd. and Beta Ltd. which belong to the same risk class.

	Alpha Ltd.	**Beta Ltd.**
Number of ordinary shares outstanding	90,000,000	150,000,000
Market price per share	Sh. 18	Sh.10
6% debentures (market value)	Sh.60,000,000	-
Profit before interest and tax	Sh. 18,000,000	Sh. 18,000,000

All profits after debenture interest are distributed as dividends.

Required:

(i) Using suitable calculations, demonstrate how under the Modigliani and Miller approach (without taxes), an investor holding 10 per cent of Alpha Ltd's shares will be better off in switching his holding to Beta Ltd. (8 marks)

(ii) Explain when, according to Modigliani and Miller (without taxes), the process described in (b) (i) above would come to an end. (2 marks)

QUESTION 15

May 2017 Question One B

Kenzel Ltd. has the following capital structure which it considers optimal under both the present and forecasted conditions:

Source of capital	**%**
Long-term debt	45
Equity capital	1 55
Total	**100**

The management of Kenzel Ltd. forecasts the after-tax earnings for the forthcoming year at Sh.2.5 million. The company has been paying 60 per cent of its earnings as dividend and this payment ratio is expected to continue into the foreseeable future. The company's present loan commitment will allow it to incur additional leverage according to the schedule presented below:

Loan amount (Sh.)	Interest rate on incremental debt
0 - 500,000	9%
500,000 - 900,000	11%
900,000 and above	13%

The company's corporate tax rate is 30%. The current market price of the equity shares of the company is Sh.22. The last dividend on equity shares was paid at Sh.2.20 per share and the expected growth rate is 5%. New equity shares can be sold at a floatation cost of 10% of the issue price.

Kenzel Ltd. has the following investment opportunities for the coming year:

Project	Cash outlay	Annual net cash flow	Project life (years)	Internal rate of return
	Sh.	Sh.		%
A	675,000	155,401	8	9
B	900,000	268,484	5	15
C	375,000	161.524	3	?
D	562,500	185,194	4	12
E	750,000	127,351	10	11

Required:

(i) The amounts in shillings at which breaks in the marginal cost of capital (MCC) schedule occur. (3 marks)

(ii) The weighted marginal cost of capital (WMCC) in each of the intervals between the breaks in the MCC schedule. (6 marks)

(iii) The internal rate of return (IRR) for project A and project C. (4 marks)

(iv) Using the investment opportunities schedule (I0S), advise on which project(s) should be accepted. (3 marks)

QUESTION 16

November 2016 Question Three A

Explain three assumptions of the traditional theories of capital structure. (6 marks)

QUESTION 17

November 2016 Question Three B

Majuu Ltd. is just about to commence operations as an international trading company. The firm will have a book value of assets of Sh, 320 million and it expects to earn 16% return on these assets before interest and taxes. However, because of certain tax arrangements with foreign governments, the company will not pay any taxes.

It is known that the capitalisation rate for an all equity firm in this business is 12%. The company can borrow debt finance at the rate of 7% per annum. The management is in the process of deciding how to raise the required Sh.10 million debt finance. Assume that the Modigliani and Miller (MM) assumptions apply.

Required:

Using the MM model without taxes, determine:

(i) The current value of the unlevered firm. (2 marks)

(ii) The current value of a levered firm if it uses Sh. 10 million of 7% debt. (2 marks)

(iii) The weighted average cost of capital (WACC) of a levered firm at a debt level of 7%, Sh.10 million. (3 marks)

QUESTION 18

November 2016 Question Three C

Assuming that the company in (b) above now pays taxes at the rate of 30%. compute the following in a Modigliani and Miller (MM) world:

(i) The current value of the firm if it uses no debt. (2 marks)

(ii) The current value of the firm if it uses the debt level of 7%, Sh. 10 million. (2 marks)

(iii) The weighted average cost of capital (WACC) at 7% debt level of Sh. 10 million. (3 marks)

QUESTION 18

May 2016 Question Three

On 1 January 2016, Mavuno Limited was in the process of raising funds to undertake four investment projects. These projects required a total of Sh.30 million.

Given below are details relating to the four investment projects:

Project	Required initial investment Sh. "million"	Internal rate of return (%)
A	8	26
B	7	16
C	9	20
D	6	22

Additional information:

1. The company had Sh.9 million available from retained earnings as at 1 January 2016. Any extra equity finance would have to be sourced through an issue of new ordinary shares.

2. The market price per ordinary share on 1 January 2016 was Sh.25.60 ex-dividend. Information on earnings per share (EPS) and dividend per share (DPS) over the last 6 years is as follows:

Year ended 31 December	2010	2011	2012	2013	2014	2015
EPS (Sh.)	4.5	4.8	4.9	5.2	5.5	6.0
DPS (Sh.)	2.5	2.8	2.9	3.0	3.2	3.5

3. Issue of new ordinary shares would attract a floatation cost of Sh.4.60 per share.

4. 9% irredeemable debentures (par value of Sh. 1,000 each) could be sold with net proceeds of 95% due to a discount on issue of 2% and a floatation cost of Sh.30 per debenture. The maximum amount available from the issue of the 9% irredeemable debenture would be Sh.4 million after which debt could only be obtained at 12% interest with net proceeds of 90% of par value.

5. 10% preference shares can be issued at a par value of Sh.80.

6. The company's capital structure, which is considered optimal, is as follows:

7. The corporate tax rate applicable is 30%.

	%
Equity capital	45
Preference share capital	30
Debenture capital	25
	100

8. The company has to exhaust internally generated funds before raising extra funds from external sources.

Required:

(a) The levels of total new financing at which breaks occur in the weighted marginal cost of capital (WMCC) curve. (2 marks)

(b) The weighted marginal cost of capital (WMCC) for each of the 3 ranges of levels of total financing as determined in (a) above. (10 marks)

(c) (i) Advise Mavuno Limited on the project(s) to undertake assuming that the projects are divisible. (6 marks)

(ii) Determine the optimal capital budget.

(Total: 20 marks)

QUESTION 19

November 2015 Question Three

(a) Comment on the assertion that capital structure is strongly influenced by managerial behaviour. (4 marks)

(b) The finance director of Nyuki Ltd. wishes to estimate what impact the introduction of debt finance is likely to have on the company's overall cost of capital. The company is currently financed by equity only.

Nyuki Ltd.- Summarised capital structure

	Sh "000"
Ordinary shares (Sh.2.5 par value)	5,000
Reserves	11,000
	60,000

The company's current share price is Sh.4.20 and up to Sh.4 million of fixed rate five-year debt could be raised at an interest rate of 10% per year. The corporate tax rate is 30%.

Nyuki Ltd.'s current earnings before interest and tax are Sh.2.5 million. These earnings are not expected to change significantly for the foreseeable future.

The company is considering raising either Sh.2 million in debt finance or Sh.4 million in debt finance. In either case, the debt finance will be used to repurchase ordinary shares.

Required:-

Using Modigliani and Miller's model in a world with corporate tax, estimate the impact on Nyuki Ltd.'s weighted average cost of capital of raising:

(i) Sh.2 million in debt finance. (6 marks)

(ii) Sh.4 million in debt finance. (6 marks)

(c) Comment on the accuracy of the estimates produced in (b) (i) and (ii) above.

(4 marks)

QUESTION 20

May 2015 Question One A

Evaluate four limitations of the Altman's Z-score model for predicting corporate failure (8 marks)

TOPIC 4

MERGERS AND ACQUISITIONS

QUESTION 1

November 2020 Question Five A

Explain six reasons why mergers and acquisition deals fail despite good planning (6 marks)

QUESTION 2

November 2019 Question Five A

Briefly describe the following types of mergers:

(i) Horizontal. (1 mark)

(ii) Vertical. (1 mark)

(iii) Congeneric. (1 mark)

(iv) Conglomerate. (1 mark)

QUESTION 3

November 2019 Question Five B

A Ltd. and B Ltd. are companies operating in the same line of business. In the past few years, A Ltd. has experienced stiff competition from B Ltd. to an extent that A Ltd. is now contemplating acquiring B Ltd. in order to consolidate its market share.

The following financial data is available about the two companies:

	A Ltd.	**B Ltd.**
Annual sales (Sh. million)	400	60
Net income (Sh. million)	40	9
Ordinary shares outstanding (million)	10	3
Earnings per share (EPS)	Sh.4.0	Sh.3.0
Market price per share (MPS)	Sh.60	Sh.30

Both companies are in the 30% income tax bracket.

Required:

(i) The maximum exchange ratio that A Ltd. should agree to assuming that it does not expect dilution in its post acquisition earnings per share (EPS). (2 marks)

(ii) The total premium the shareholders of B Ltd. would agree to receive at the exchange ratio in (b) (i) above. (2 marks)

(iii) A Ltd.'s post acquisition earnings per share (EPS) assuming that the two companies agree on an offer price of Sh.30. (2 marks)

(iv) A Ltd.'s post acquisition earnings per share (EPS) assuming that for every 100 ordinary shares of B Ltd.. the shareholders are offered two, 12 % debentures of Sh.500 par value. (3 marks)

QUESTION 4

May 2019 Question Five B

Excellent Ltd. is considering acquiring Best Ltd. a firm in the same industry in order to consolidate its market share. Best Ltd. has been less profitable, so it has paid an average of only 20% in taxes during the last several years. In addition, it has used little debt having a debt ratio of 25%. If the acquisition would be implemented. Excellent Ltd. could operate Best Ltd. as a separate, wholly owned subsidiary. This will increase Excellent Ltd.'s gearing ratio to 40%.

The following is a forecasted financial data for Best Ltd. over the next five years:

Year	**1**	**2**	**3**	**4**	**5**
	Sh "M"	Sh "M"	Sh "M"	Sh "M"	Sh "M"
Net sales	50	60	75	70	65
Operating costs	5	10	15	15	12
Selling and administration costs	10	10	8	9	11
Acceptable investment project costs	0.5	0.70	1.60	1.20	0.20

Additional information:

1. The risk-free rate of return is 8% and debt is considered to be risk-free.

2. Expected return of the market portfolio is 13%.

3. The firm's levered equity beta after acquisition is estimated at 0.80.

4. After 5 years, the net cash flows of Best Ltd. shall increase at a constant rate of 6% per annum in perpetuity.

5. Corporation tax rate is 30%.

6. The firm's gross profit margin is 40%.

7. Best Ltd. incurs fixed financing cost of Sh.2 million per annum.

8. The firm's equity shares and bonds are currently trading at par.

Required:

Determine the maximum price payable to acquire Best Ltd. using the discounted free cash flow basis. (10 marks)

QUESTION 5

November 2018 Question Four C

Chilulu Industries Limited is considering acquisition of Roka Corporation Ltd. in a share for share exchange. The financial data for the two companies are given below:

	Chilulu Ltd. (Sh.)	**Roka Ltd. (Sh.)**
Sales (millions)	500	100
Net earnings (millions)	30	12
Ordinary shares outstanding (millions)	6	2
Ordinary share market price, per share (MPS)	50	40
Dividend per share (DPS)	2	1.50

Additional information:

1. Chilulu Limited is not willing to incur an initial dilution in its earnings per share (EPS).

2. Chilulu Limited will have to offer a minimum of 25% of Roka Ltd.'s current share market price.

Required:

(i) The relevant offer price range. (4 marks)

(ii) If Roka Ltd.'s shareholders accept an offer by Chilulu Ltd. of Sh.40 per share in a share for share exchange. Determine the post-merger earnings per share (EPS). (4 marks)

(iii) Using the results obtained in (c) (ii) above and assuming that Chilulu Ltd.'s price-earning (P/E) ratio will remain unchanged after the merger, determine the post acquisition market price of a share of Chilulu Limited. (2 marks)

QUESTION 6

May 2018 Question Three A

Describe the following pre-offer takeover defensive mechanisms:

(i) Poison pills. (1 mark)

(ii) Golden parachutes. (1 mark)

(iii) Fair price amendments. (1 mark)

(iv) Super majority voting provisions. (1 mark)

(v) Restricted voting rights. (1 mark)

QUESTION 7

May 2018 Question Three C

Nangina Ltd. is considering acquiring Bwiri Ltd. Nangina Ltd. is contemplating financing of the acquisition of Bwiri Ltd. using any of the following options:

Option I: An ordinary share for ordinary share exchange

Under the terms of acquisition, Nangina Ltd. will offer one of its ordinary shares for every two shares in Bwiri Ltd.

Option 2: Ordinary shares for debentures exchange

Nangina Ltd. expects to offer 2 units of 10% debentures for every 100 ordinary shares in Bwiri Ltd. Each unit of debenture has a par value ofSh.100 each.

The summarised financial information relating to the two companies for the year ended 30 November 2017 was as follows:

	Nangina Ltd.	Bwiri Ltd.
Profit after tax (Sh.)	120 million	30 million
Number of shares	20 million	6 million
Earnings per Share (EPS) (Sh.)	6	5
Market price per share (Sh.)	50	25
Price earnings ratio	8.33 times	5 times

The corporate tax rate is 30%.

Required:

Determine the combined operating profit of the two firms and the post acquisition earnings per share (EPS) at the point of indifference in the firm's earnings under financing options (1) and (2) above. (10 marks)

QUESTION 8

November 2017 Question Three A

Discuss three reasons why acquisitions often fail to enhance shareholder value. (6 marks)

QUESTION 9

November 2017 Question Three B

Mkuki Ltd. is considering making a bid for 100% of the shares of Ngao Ltd., a company in a completely different industry'. The bid of Sh.200 million, which is expected to be accepted, will be financed entirely by new debt with a post-tax cost of debt of 7%.

1. **Pre-acquisition information:**

Mkuki Ltd.

The company has debt finance totalling Sh.60 million at a pre-tax rate of 10%.

The company has 50 million equity shares each with a current market value of Sh.22. The equity beta is 1.37. The post-tax operating cash flows of Mkuki Ltd. are as follows:

Year	1	2	3	4	5
Sh"million"	60.3	63-9	67.8	71.8	76.1

Ngao Ltd.

The company has an equity beta of 2.5 and 65 million equity shares in issue with a total current market value of Sh. 156 million.

The company's debt, which will also be taken over by Mkuki Ltd., stands at Sh. 12.5 million at a post-tax rate of 7%.

2. Post-acquisition information:

Land with a value of Sh.14 million will be sold.

The post-tax operating cash flows of Ngao Ltd's current business will be:

Year	1	2	3	4	5
Sh"million"	15.2	15.8	16.4	17.1	17.8

3. If the acquisition goes ahead, Mkuki Ltd. will experience an improvement in its credit rating and all existing debts will be charged at a post-tax rate of 7%.
4. Cash flows after year 5 will grow at the rate of 1.5% per annum.
5. The risk-free rate is 5.2% and the market risk premium is 3%.

6. The corporate tax rate is 30%.

Required:

Advise whether the acquisition should proceed. (14 marks)

QUESTION 10

May 2017 Question Three A

Examine four strategies that a company could adopt to defend itself against a hostile takeover. (8 marks)

QUESTION 11

May 2017 Question Five A

A Ltd. is considering acquiring B Ltd. The selected financial data for the two companies are as follows:

	A Ltd.	B Ltd.
Annual sales (Sh."million")	600	120
Net income (Sh."million")	35	3
Ordinary shares outstanding ("millions")	10	2
Earnings per share (EPS) - Sh.	3.5	1.5
Market price per share (MPS) - Sh.	40	15

Both companies are in the 30% tax bracket.

Required:

(i) The maximum exchange ratio that A Ltd. should agree to if it expects no dilution in earnings per share. (2 marks)

(ii) Total premium that the shareholders of B Ltd. would receive at the exchange ratio calculated in (a) (i) above. (2 marks)

(iii) A Ltd.'s post acquisition earnings per share, if the two companies settle on a price of Sh.20 per share. (2 marks)

(iv) A Ltd.'s post-acquisition earnings per share if every 50 ordinary shares of B Ltd. were exchanged for one 8% debenture of a par value of Sh. 1,000 each. (2 marks)

QUESTION 12

November 2015 Question One C

Evaluate four advantages of employing organic growth strategies. (4 marks)

QUESTION 13

May 2015 Question Four A

Explain the following methods of company restructuring and state the circumstances under which each is appropriate:

i. Sell-offs. (2 marks)

ii. Carve-outs. (2 marks)

iii. Spin-offs. (2 marks)

QUESTION 14

May 2015 Question Four B

Shuka Ltd,. a company that manufactures mobile communication gadgets, intends to acquire Panda Ltd. which is involved in developing communication and networking software

The following financial information is provided for the two companies:

	Shuka Ltd	Panda Ltd
Current share price	Sh.5.80	Sh. 2.40
Number of issued shares	210 million	200 million
Equity beta	1.2	1.2
Asset beta	0.9	1.2

Free cash flow to the combined company will be Sh. 216 million in current value and this will increase by an annual growth rate of 5% for the next four years before reverting to an annual growth rate of 2.25% in perpetuity

The combined operations of the companies will result in cash savings of Sh.20 million per year for the next four years.

The debt to equity ratio of the combined company will be 4:6 in market value terms and it is expected that the combined company's cost of debt will be 4.55%

Corporation tax of 30% applies to the company. The current risk-free rate is 2% and the market risk premium is 7%. It can be assumed that the combined company's asset beta is the weighted average of the respective companies' asset betas.

Required:

Estimate the additional equity value created by combining the two companies based on free cash flows (14marks)

TOPIC 5

CORPORATE RESTRUCTURING AND RE-ORGANISATION

QUESTION 1

November 2020 Question One A

Discuss four reasons for restructuring and reorganising an organisation. (8 marks)

QUESTION 2

November 2020 Question One B

Professor Edward Altman's model for prediction of bankruptcy is given as follows:

$$Z = score = 12X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5$$

X_1, X_2, X_3, X_4, and X_5 are the financial ratios which according to Prof. Altman have the discriminating power.

Where: X_1= Networking capital/Total assets
X_2 = Retained earnings/T otal assets
X_3 = Operating profit (EBIT)/Total assets
X_4 = Market value of equity shares/Book value of debt including preference share capital
X_5= Sales/Total assets

Given below are summarised financial statements of Alpha Limited for the year ended 31 December 2019:

Alpha Limited
Income statement for year ended 31 December 2019

	Sh. "000"
Sales	400,000
Cost of sales	(300,000)
Gross earnings	100,000
Operating expenses	(60,000)
Operating profit	40,000

Financing cost: Interest	(10,000)
Profit before tax	30,000
Corporation tax @ 30%	(9,000)
Profit after tax.	21,000
Ordinary dividend proposed and paid	(11,000)
Retained profit for the year	10,000

Alpha Limited
Statement of financial position as at 31 December 2019

	Sh. "000"
Assets:	
Non-current assets	300,000
Current assets	100,000
Total assets	400,000
Financed by:	
Ordinary share capital (Sh.10 each)	100,000
Retained profit	120,000
Share premium	40,000
Equity capital g	260,000
Total current liabilities	20,000
12% preference share capital	40,000
10% debenture capital	80,000
Total equity and liabilities	400,000

In this model, a Z — score of 2.7 or more indicates no signs of failure and a Z — score of 1.8 or less indicates there are signs of failure. The firm's ordinary shares are currently trading at Sh.15 each.

Required:

(i). The Z— score for Alpha Limited. (5 marks)

(ii) Comment on the results obtained in (b) (i) above. (1 mark)

QUESTION 3

November 2019 Question One A

(i) Distinguish between "insolvency" and "bankruptcy" as used in business restructuring. (2 marks)

(ii) Highlight four causes of business failure. (4 marks)

QUESTION 4

May 2019 Question Two B

ABC Ltd. is a company listed in the local securities exchange. The company is foreseeing a growth rate of 12% per annum in the next two years. The growth rate is likely to be 10% per annum for the third and fourth year, then it will stabilise at 8% per annum in perpetuity.

The latest dividend to be paid was Sit. 1.50 per share.

The required rate of return is 16%.

Required:

The intrinsic value of the share. (4 marks)

QUESTION 5

November 2018 Question One A

In the context of corporate restructuring and reorganisation, differentiate between the following terms:

(i) "Leveraged buy-out" and "management buy-out" (2 marks)
(ii) "Divestiture" and "spin-off" (2 marks)
(iii) "Unbundling" and "sell-off". (2 marks)

QUESTION 6

November 2018 Question One B

Mavueni Limited is considering undertaking a financial reconstruction during which it would repurchase its outstanding ordinary shares using debt. This will raise its debt to equity ratio to 1.20. The following information was available for the company:

1. Existing debt to equity ratio is 0.80.
2. The asset beta (ungeared beta of equity) is 0.30.
3. The risk-free rate of return is 8%.
4. The return of market portfolio is 14%.
5. The company adopts 50% payout ratio as its dividend policy.
6. The company expects to generate earnings per share (EPS) of Sh.6.

7. Debt finance is considered to be risk-free.
8. The corporate tax rate is 30%.

Required:

Evaluate the impact of financial reconstruction on Mavueni Ltd.'s weighted average cost of capital (WACC). (8 marks)

QUESTION 7

November 2018 Question Three A

The following are summarised financial statements of Dzikunze Limited as at 31 December 2015 to 31 December 2017:

Income statement for the year ended 31 December:

	2015 Sh."000"	2016 Sh."000"	2017 Sh."000'
Turnover	90,000	100,000	120,000
Operating profit	15,000	20,000	25,000
Interest	(2,000)	(4,000)	(5,000)
Profit before tax	13,000	16,000	20,000
Taxation (30%)	(3,900)	(4,800)	(6,000)
Profit after tax	9,100	11,200	14,000
Proposed dividends	(2,100)	(2,500)	(3,000)
Retained profit	7,000	8,700	11,000

Statement of financial position as at 31 December 2017:

	Sh."000"
Non-current assets	60,000
Current assets	40,000
	100,000
Financed by:	
Ordinary share capital (Sh.20 par value)	30,000
Reserves	2,000
10% long term debentures (Sh. 100 par value)	30,000
Short-term debts	20,000
	100,000

Additional information:

1. Stock market analysts expect post-tax earnings and dividends to grow at the rate of 25% per annum for the next three years. Thereafter, the annual growth rate will revert to the company's growth rate and remain constant in each year to perpetuity.
2. Dzikunze Ltd.'s overall beta is 0.80 and the beta of equity is 0.75.
3. The risk-free rate of return is 12%.
4. The market rate of return is 28%.
5. The current market price of ordinary share is Sh.67.70 cum-dividend.
6. The debenture price is Sh.89.50 ex-interest.
7. The corporation tax rate is 30%.

Required:

(i) Evaluate whether Dzikunze Ltd.'s share is currently overvalued or undervalued by the market forces. (8 marks)

(ii) Advise a prospective investor whether to buy the ordinary shares of Dzikunze Limited. (2 marks)

QUESTION 8

May 2018 Question Five D

Kisima Ltd. expects free cash flows of Sh.7.36 million this year and a future growth rate of 4% per annum. Currently, the firm has Sh.30 million in debt outstanding. This leverage will remain fixed during the year but at the end of each year, Kisima Ltd. is expected to increase or decrease its debt to maintain a constant debt/equity ratio.

Kisima Ltd. pays 5% interest on its debt and has an unlevered cost of capital of 12%.

The corporate tax rate is 40%.

Required:

Compute the value of Kisima Ltd. (5 marks)

QUESTION 9

November 2017 Question Two A

Discuss three reasons why economic value added (EVA) is gaining prominence as an alternative measure of a company's financial performance. (6 marks)

QUESTION 10

May 2017 Question Two A

Analyse three factors that might be responsible for financial distress in a firm. (6 marks)

QUESTION 11

May 2017 Question Three B

The following data relate to two companies namely; V Ltd. and J Ltd. operating in the same line of business.

Financial data as at 30 April 2017:

	V Ltd.	**J Ltd.**
Market value of debt (Sh."billion")	6.60	11.60
Market value of equity (Sh (billion")	19.80	13.40
Number of shares in issue ("million")	680.00	880.00
Share options outstanding ("million")	50.80	-
Exercise price per option (Sh. per share)	22.00	-
Corporate tax rate	30%	30%
Equity beta	1.85	0.95
Default risk premium	1.6%	3.0%
Net operating profit after tax and net re-investment (Sh.'million")	900.00	410.00
Current earnings per share (Sh. per share)	1.19	0.44

Additional information:

1. The global equity risk premium is 4% and the most appropriate risk-free rate derived from government securities is 3%.
2. The share options held by the employees were exercisable subject to the employees working for the company for the next three years.
3. The company has an annual employee attrition rate of 5% as employees leave and out of those remaining, 20% are expected not to have achieved the standard of performance required to exercise the options.
4. The options have a time value of Sh.7.31.

5. J Ltd. operates a defined benefit pension scheme which, at its current actuarial valuation, shows a deficit of Sh.860 million.

6. V. Ltd. which has managed to sustain a 5% growth rate in earnings per annum, is considering a debt-financed acquisition of J Ltd. In addition, V Ltd. believes that J Ltd. could register a growth rate of 4% per annum under its current management.

Required:

(i) The weighted average cost of capital (WACC) of both J Ltd. and V Ltd. (4 marks)

(ii) The current value of both J Ltd. and V Ltd. (8 marks)

QUESTION 12

November 2016 Question Four A

In relation to corporate restructuring and re-organisation, distinguish between the following terms:

(i) "Boot strapping" and "management buyout". (2 marks)

(ii) "Sell off" and "spin off". (2 marks)

QUESTION 13

November 2016 Question Four B

Kubwa Ltd., a supermarket chain, is proposing to take-over Small Ltd., a smaller firm in the same industry. In its bid, kubwa Ltd. has offered four of its shares for every three shares of Small Ltd.

The following are the latest summarised accounts of the two companies:

Statements of financial position
Kubwa Ltd. Small Ltd.

Non-current assets:	**Sh.“million”**	**Sh.“million”**	**Sh.“million”**	**Sh.“million”**
Land		966		84.6
Other non-current assets		300		34
		1,266		118.6
Current assets:				
Inventory	656		102.8	
Accounts receivable	24		12.6	
Cash	88		10.6	
	768		126.0	
Current liabilities:				
Trade payables	894		92.2	
Other accruals	68		8	
	962		100.2	
Net current assets		(194)		25.8
Long-term liabilities:				
14% loan stock	400		-	-
Floating rate loans	228		35	
		(628)		(35)
Total net assets		444		109.4
Shareholders’ funds:				
Ordinary share capital		150		40
Reserves		294		69.4
Total shareholders’ funds		444		109.4

Income statement

	Kubwa Ltd. Sh.“million”	**Small Ltd. Sh.“million”**
Turnover	2,260	362
Earnings before interest and tax	230	28
1nterest	(80)	
Profit before tax	150	24
Taxation	(50)	m
Earnings available to shareholders	100	16
Dividends	(48)	(10)
Retained earnings	52	6

Additional information:

1. The par value of the shares of Kubwa Ltd. is Sh.0.50 while the par value of Small Ltd's shares is Sh. 1.00.

2. The current share price of Kubwa Ltd. is Sh.4.64 while that of Small Ltd. is Sh.5.90. The current loan stock price of Small Ltd. is Sh. 125.

3. Recent annual growth trends are as follows:

	Kubwa Ltd.	**Small Ltd.**
Dividends	7%	8%
Earnings per share	7%	10%

4. The following will take place after the acquisition:
   - Surplus warehousing facilities will be sold for Sh.13.6 million.
   - Sh, 18 million will be paid out for redundancy of employees.
   - There will be savings of Sh.5.4 million from wages every year for at least five years.

5. Kubwa Ltd. has an estimated cost of equity of 14.5% and a weighted average cost of capital of 12%.

6. Small Ltd. has an estimated cost of equity of 13%.

Required:

(i) Evaluate whether the bid is likely to be viewed favourably by the shareholders of both Kubwa Ltd. and Small Ltd. (10 marks)

(ii) Discuss three factors that are likely to influence the views of the shareholders in the analysis in (b) (i) above. (6 marks)

QUESTION 14

May 2016 Question Four A

With reference to corporate valuation, describe the importance of enterprise value (EV). (6 marks)

QUESTION 15

May 2016 Question Four B

Huge Ltd. intends to take over Tiny Ltd., another company in the same industry. Tiny Ltd. is expected to post earnings of Sh.86 million next year.

If Huge Ltd. acquires Tiny Ltd., the expected results of Tiny Ltd., for the next three years will be as follows:

	Year after acquisition		
	Year 1	**Year 2**	**Year 3**
	Sh. "000"	**Sh. "000"**	**Sh. "000'**
Sales	200,000	280,000	320,000
Cash costs/expenses	120,000	160,000	180,000
Capital allowance	20,000	30,000	40,000
Interest charges	10,000	10,000	10,000
Cash to replace assets and finance growth	25,000	30,000	35,000

From year 4 onwards, it is expected that the annual cash flows from Tiny Ltd. will increase by 4% each year into perpetuity.

Tax is payable at the rate of 30% and this tax is paid in the same year the profits to which it relates are earned.

If Huge Ltd. acquires Tiny Ltd., it estimates that the gearing after the acquisition will be 35% measured as the value of debt as a proportion of the total equity and debt. After the acquisition of Tiny Ltd., Huge Ltd. would have a cost of debt of 7.4% before tax and a beta of 1.60.

The risk-free rate is 6% and the return on the market portfolio is 11%.

Required:

(i) The offer price for Tiny Ltd., if Huge Ltd. were to value Tiny Ltd. on a forward price earnings (P/E) multiple of 8.0 times. (2 marks)

(ii) The weighted average cost of capital (WACC) for Huge Ltd. after the acquisition of Tiny Ltd. (2 marks)

(iii) The offer price for Tiny Ltd. using a discounted cash flow (DCF) based valuation. (10 marks)

QUESTION 16

November 2015 Question Four A

(i) Define the term "free cash flow to equity". (2 marks)

(ii) Explain how free cash flow to equity could be used for valuation. (4 marks)

QUESTION 17

November 2015 Question Four B

Discuss two advantages and two disadvantages of economic value added (EVA).

(4 marks)

QUESTION 18

November 2015 Question Four C

The following information relates to Jasho Ltd.:

Statement of profit or loss extracts for the year:

	2013 Sh."million"	2014 Sh."million"
Revenue	326	380
Pre-tax accounting profit	67	84
Taxation	23	29
Profit after tax	44	55
Dividends	15	18
Retained earnings	22	22

Statement of financial position extracts for the year:

	2013 Sh."million"	2014 Sh."million"
Non-current assets	120	156
Net current assets	130	160
	250	316
Financed by:		
Shareholders' funds	195	236
Medium and long-term bank loans	55	80
	250	316

Additional information:

1. Jasho Ltd. had non-capitalised leases valued at Sh.10 million in each year from 2012 to 2014.
2. Capital employed as per the year 2012 financial statements was Sh.223 million.
3. The pre-tax cost of debt was estimated to be 9% in year 2013 and 10% in year 2014.

4. Jasho Ltd.'s cost of equity was estimated to be 15% in year 2013 and 17% in year 2014.
5. The pre-tax accounting profit is obtained after deducting the economic depreciation of the company's non-current assets. This is also the depreciation used for tax purposes.
6. The target capital structure for Jasho Ltd. is 60% equity and 40% debt.
7. The effective tax rate was 30% in both year 2013 and year 2014.
8. Economic depreciation was Sh.30 million in year 2013 and Sh.35 million in year 2014.
9. Other non-cash expenses were Sh.10 million per year in both 2013 and 2014.
10. Interest expense was Sh.4 million in year 2013 and Sh.6 million in year 2014.

Required:

(i) Stating any assumptions made, estimate the economic value added (EVA) of Jasho Ltd. for both year 2013 and year 2014. (8 marks)

(ii) Comment on the performance of Jasho Ltd. (2 marks)

TOPIC 6

DERIVATIVES IN FINANCIAL RISK MANAGEMENT

QUESTION 1

May 2019 Question Four A

Kadzenga Limited is a Kenyan company with a substantial proportion of its trade with companies in the United States (US). Kadzenga Ltd. invoiced a US firm 60,000 United States Dollars (USD) receivable 3 months from now.

Additional information:

1. The borrowing rate is 3% above the bank base rate while the investing rate is 2% below the bank base rate. These rates apply both in Kenya and the United States.
2. The bank base rates in Kenya and the US are 15% and 10% per annum respectively.
3. The exchange rates in the forex market between the Kenya Shilling (Ksh) and the United States Dollar (USD) arc as follows:

	Ksh/1 US ($)
Spot exchange rate:	103-105
One month forward rate:	102-103
3-months forward rate:	101-102

Required:

Calculate the amount to be received by Kadzenga Limited using:

(i) Forward contract hedge. (2 marks)

(ii) Money market hedge. (6 marks)

(iii) Using the results obtained in (a) (i) and (a) (ii) above, advise the management of Kadzenga Limited on the best hedging strategy (2 marks)

QUESTION 2

November 2018 Question Three B

Chigiri Investment Limited is a company based in Kenya. The company exported goods on credit to a firm in the United States of America (USA). The company expects to receive US$ 800,000 in one year's time.

The current spot exchange rate is 1US$ = KES.60.

However, Chigiri Investment Limited created a probability distribution for the forward spot rate in one year as follows:

Probability	Forward spot rate KES/1 US S
0.20	61
0.50	63
0.30	67

Additional information:

1. One year put options on the USS are available with an exercise price of KES.63 and a premium of KES. 4 per USS.

2. One year call options are available on the USS with an exercise price of KES.60 and a premium of KES 3 per USS.

3. The future spot rate is estimated in a year's time to be KES. 62 per 1US$.

4. The following are the money market annual rates:

	Kenya Annual rates (%)	USA Annual rates (%)
Borrowing	18	12
Deposit	9	6

Required:

(i) Determine whether a forward market hedge, money market hedge or currency option hedge would be the most appropriate hedging strategy for the company. (9 marks)

(ii) Advise a prospective investor, the most appropriate hedging strategy if no hedging takes place. (1 mark)

QUESTION 3

November 2018 Question Four A

A financial analyst is interested in using the Black-Scholes Model (BSM) to value call options on the stock.

The following information is available:

1. The price of the stock is Sh.35.
2. The strike price is Sh.30.
3. The option matures in 9 months.
4. The volatility of returns of the stock is 0.30.
5. The risk-free rate is 10%.

Required:

The value of a call option using the Black-Scholes Model. (4 marks)

QUESTION 4

May 2018 Question Four A

In relation to derivatives markets and contracts:

(i) Highlight four characteristics that are common to both forward contracts and futures contract (4 marks)

(ii) Differentiate between a “straddle” and a “strangle”. (2 marks)

(iii) Outline three methods of terminating a swap contract. (3 marks)

QUESTION 5

May 2018 Question Five C

Kikumi Ltd. expects to receive 750,000 Euros from a credit customer in the European Union in 6 months' time. The spot exchange rate is 2.349 Euros (EUR) per United States Dollar (USD) and the 6-month forward rate is 2.412 Euros per USD.

The following commercial interest rates are available to Kikumi Ltd.

	Deposit rate per annum (%)	Borrowing rate per annum (%)
EUR	4.0	8.0
USD	2.0	3.5

Kikumi Ltd. does not have any surplus cash to use in hedging the future Euro receipt.

Required:

Evaluate whether the money market hedge or a forward hedge would be preferred.
(7 marks)

QUESTION 6

November 2017 Question Five B

Jacques Ltd. is a company based in France where the Euro (€) is widely used. The company has recently imported raw materials from the USA and has been invoiced for US Dollars ($) 240,000 payable in 3 months' time.

In addition, the company has exported finished goods to the USA and Australia. The customer in the USA has been invoiced for US Dollars ($) 69,000 payable in 3 months' time and the Australian customer has been invoiced for Australian dollars (ASD) 395,000 payable in 4 months' time.

The current spot and forward exchange rates are given as follows:

US Dollars ($) / 1 Euro (€)
Spot rate 0.9830 - 0.9850
3 months' forward 0.9520 - 0.9525

Euro (€) / I ASD
Spot rate 1.8890 - 1.8920
4 months' forward 1.9510 - 1.9540

The current money market interest rates per annum are given as follows:

	Lending	Borrowing
USA	10%	12%
Australia	14%	16%
France	11.5%	13%

Required:

Show how the company can hedge its foreign exchange exposure using:

(i) Forward market cover. (6 marks)

(ii) Money market cover. (6 marks)

QUESTION 7

May 2017 Question Four B

Biashara Ltd. is an import-export company based in Kenya. On 1 January 2017. The company exported coffee worth US $140,000 to the United States (US) of America on a five-month credit.

Additional information:

1. The exchange rates in the forex markets were (are expected to be) as follows:

	KSh/1 USS
1 January 2017	100
31 May 2017	102

2. The lending and borrowing rates in the two countries are as follows:

	Annual lending rate	**Annual borrowing rate**
Kenya	18%	19%
USA	14%	15%

3. The importer will settle the outstanding amount on 31 May 2017.

Required:

(i) Using the interest rate parity relationship, compute the expected 5-month forward exchange rate as at 31 May 2017. (4 marks)

(ii) Advise Biashara Ltd. on which is the better hedging strategy between a forward contract and a money market hedge. (10 marks)

QUESTION 8

November 2016 Question Five B

International Bank expects that the Mexican Peso (MXP) will depreciate against the US dollar (USD) from its spot rate of $0.15 to $0.14 in ten days. The following interbank lending and borrowing rates exist:

	Annual lending rate	Annual borrowing rate
US dollars (USD)	8.0%	8.3%
Mexican Peso (MXP)	8.5%	8.7%

Assume that International Bank has a borrowing capacity of either 10 million USD or 70 million MXP in the interbank market, depending on which currency it wants to borrow. Further, assume that one year has 360 days.

Required:

(i) Demonstrate how International Bank could capitalise on its expectations without using deposited funds. (5 marks)

(ii) Estimate the profits that could be generated from the strategy adopted in (b) (i) above. (1 mark)

QUESTION 9

November 2016 Question Five C

Assume all the information provided in (b) above with this exception: International Bank expects the MXP to appreciate from its present spot rate of $0. 15 to $0.17 in 30 days.

Required:

(i) Demonstrate how International Bank could capitalise on its expectations without using deposited funds. (5 marks)

(ii) Estimate the profits that could be generated from the strategy adopted in (c) (i) above. (1 mark)

QUESTION 10

November 2016 Question Five D

Highlight two shortcomings of the Black-Scholes option pricing model. (4 marks)

QUESTION 11

May 2016 Question Five A

Discuss four techniques that a company might use to hedge against the foreign exchange risk involved in foreign trade. (8 marks)

QUESTION 12

May 2016 Question Five B

Jasper Ltd. is a company based in Nairobi, Kenya which does business with companies based in Tanzania. From such trade, Jasper Ltd. expects the following cash flows in the next six months, in the currencies specified:

Payments due in 3 months: Ksh. 116,000
Receipts due in 3 months: Tsh. 1,970,000
Payments due in 6 months: Tsh. 4,470,000
Receipts due in 6 months: Tsh. 1,540,000

The exchange rates in the Nairobi market are as follows:

	Tsh/Ksh
Spot	17.106 - 17.140
Three months forward	0.82 - 0.77 cents premium
Six months forward	1.39 - 1.34 cents premium

	Interest rates	
	Borrowing	**Lending**
Ksh.	12.5%	9.5%
Tsh.	9%	6%

Required:

The net Kenya shilling receipts/payments that Jasper Ltd. might expect for both its three month and six month transactions if the company hedges foreign exchange risk on the:

(i) Forward foreign exchange market. (6 marks)

(ii) Money market. (6 marks)

QUESTION 13

November 2015 Question Five A

The main driver of option valuation is the volatility of returns of the associated asset.

Support the above statement. (4 marks)

QUESTION 14

November 2015 Question Five B

Explain how triangular arbitrage ensures that currency values are essentially the same in different markets around the world at any given moment. (4 marks)

QUESTION 15

November 2015 Question Five C

Granada Ltd., a UK-based company, imports computer components from the Far East. The trading currency is the Singapore dollar (SS) and the value of the deal is SS28 million. Three month's credit is given. The current spot exchange rate is SS2.8 to one sterling pound (£). Because of recent volatility in the foreign exchange markets, Granada Ltd.'s directors are worried that a rise in the value of the SS could wipe out the profits on the deal. Three alternative hedging methods have been suggested as follows:

- A forward market hedge.
- A money market hedge.
- An option hedge.

Granada Ltd.'s treasurer has provided the following information:

1. The three-month forward rate is SS2.79:£1.
2. Granada Ltd. can borrow Singapore dollars at 2% interest rate per annum and sterling pounds at 5% per annum.

3. Deposit rates are 1% per annum in Singapore and 3% per annum in the UK.
4. A three-month American call option to buy SS28 million at an exercise rate of S$2.785:£l could be purchased at a premium of £200.000 on the London OTC option market.

Required:

(i) Indicate which would be a better hedge between the forward market hedge and the money market hedge. (6 marks)

(ii) Evaluate the option hedge if the following spot rates were applicable in three months' time:

- S$2.78:£l.
- S$2.82:£1.

(6 marks)

QUESTION 16

May 2015 Question Three B

Explain the difference between 'open-end funds" and "closed-end funds"

(4 marks)

QUESTION 17

May 2015 Question Three C

A share is currently selling at Sh. 120. There are two possible prices of the share after one year: Sh. 132 or Sh. 105.

Assume that the risk-free rate of return is 9% per annum

Required:

The value of a one-year European call option with an exercise price of sh. 125

(8 marks)

QUESTION 18

May 2015 Question Five A

Explain how inflation rates could be used to forecast exchange rates. (6 marks)

QUESTION 19

May 2015 Question Five B

Assume that the spot exchange rate equals 100 Japanese Yen (¥) to one US dollar ($)and six-month forward rate equals 101 Japanese Yen to one US dollar ($).An investor can purchase a Treasury Bill in the United states that matures in six months' time and earn an annual rate of return of 3%

Required

The annual rate of return on a similar investment in Japan (4 marks)

QUESTION 19

May 2015 Question Five C

You have been provided with the following series of exchange rates for the United States (U.S) dollar($), the Canadian dollar(C$) and the British pound (£).

$0.6000/C$)(C$1.6667/$)

$1.2500/£ (£0.8000/$)

C$2.500/£ (£0.4000/C$)

Assume that you have $ 1,000,000 in cash

Required

Demonstrate how you could take advantage of these exchange rates to obtain arbitrage profit (10 marks)

TOPIC 7

INTERNATIONAL FINANCIAL MANAGEMENT

QUESTION 1

November 2020 Question Two C

You have recently been hired as a financial manager at Panblock Limited, a locally incorporated company that deals in imported building materials from the United States of America (USA). As the person in charge of negotiating the exchange rates, you have noted the following indicative exchange rates and interest rates:

3-months forward exchange rates	105 KES/USD
Spot exchange rate	100 KES/USD
3-months interest rate in Kenya	8% Per annum
3-months interest rate in USA	5.8% Per annum

Assume that Panblock Limited can borrow as much as KES 1,000,000.

Required:

(i) Determine whether the interest rate parity (IRP) is currently holding. (2 marks)

(i) Demonstrate how you could undertake a covered interest arbitrage assuming that IRP is not holding. (4 marks)

(iii) Determine the arbitrage profit. (1mark)

QUESTION 2

November 2020 Question Three A

Explain the difference between the following terms as applied in mortgage and financial markets:

(i) "Primary mortgage market" and "secondary mortgage market". (2 marks)

(ii) "Fixed-rate mortgage" and "adjustable-rate mortgage". (2 marks)

(iii) "Lien" and "recourse". (2 marks)

QUESTION 3

November 2020 Question Four A

Explain the following terms as used in the context of international parity conditions:

(i) Interest rate parity. (2 marks)

(ii) Purchasing power parity. (2 marks)

(iii) International Fisher effect. (2 marks)

QUESTION 4

November 2020 Question Four B

An investor has acquired a call option whose exercise price is Sh. 100. The option's premium is Sh.5 per option.

The following are the possible market prices (in shillings) of the option:

114 112 110 108 106 105 104 102 100 98 96 94

Required:

(i) Determine the options value based on each of the above market prices. (3 marks)

(ii) Determine the profit or loss associated with the option on the basis of each of the possible market prices. (3 marks)

(ii) Represent the information in (b) (ii) above in a diagram where the x-axis represents market price and y-axis represents profit or loss for the option buyer. (3 marks)

(iv) Interpret the graph in (6) (iii) above. (1 mark)

QUESTION 5

November 2019 Question Three A

Summarise five functions of the International Monetary Fund (IMF). (5 marks)

QUESTION 6

November 2019 Question Four A

Distinguish between the following terms as used in the context of derivatives market:

(i) "Currency option" and "currency swap". (2 marks)

(ii) "Interest rate swap" and "interest rate collar". (2 marks)

(iii) Hedgers" and speculators". (2 marks)

QUESTION 7

November 2018 Question Five B

A large manufacturing firm based in Kenya is tendering for an order in South Africa. The tender conditions state that payment will be made in South African Rands (ZAR) in 24 months' time from now. The company is unsure of what price to tender. The company's marginal cost of production at the time of tendering is estimated to be Kenya shillings (KES) 2,000,000 and a 20% mark-up is applicable for the company.

Exchange rates:

KES/I ZAR

Spot rate: 8.025 - 8.125

Additional information:

1. No forward rate exists for 24 months' time.

2. Market information between Kenya and South Africa:

	South Africa	Kenya
Annual inflation rates	6%	8%
Annual interest rates available to the manufacturing firm:		
Borrowing rate	12%	18%
Investment rate	8%	6%

Required:

Using the purchasing power parity model, recommend the tender price to be used.

(7 marks)

QUESTION 8

May 2018 Question Five B

The issue of taxation relating to international trade has become important as business transactions become more complicated. Transfer pricing is one such area which has come under scrutiny by tax authorities all over the world. Transfer pricing has been of great concern to the government as it has made the government lose huge tax revenues.

Required:

In relation to the above statement, summarise three objectives of transfer pricing other than reducing tax liability. (3 marks)

QUESTION 9

November 2017 Question Two B

With reference to financial management in the global context, distinguish between the following terms:

(i) A ''Eurobond" and a "Euro note". (2 marks)

(ii) An option being "in the money" and "out of the money". (2 marks)

QUESTION 10

November 2017 Question Five A

In relation to financial management in a global context, explain how the following theories could be used to forecast exchange rates:

(i) Interest rate parity. (4 marks)

(ii) Purchasing power parity. (4 marks)

QUESTION 11

May 2017 Question Four A

Explain three functions of the African Development Bank. (6 marks)

QUESTION 12

November 2016 Question Five A

Explain how currency swaps could be used to hedge against the foreign exchange operating exposure of a firm. (4 marks)

TOPIC 8

REAL ESTATE FINANCE

QUESTION 1

May 2019 Question Three A

Discuss four types of risks associated with investment in real estate investment trust (REITs) securities. (8 marks)

QUESTION 2

November 2018 Question Five A

Analyse three assumptions of the income approach of valuing real estates business in your country. (6 marks)

TOPIC 9

EMERGING ISSUES AND TRENDS

QUESTION 1

May 2019 Question Two A

The Unclaimed Financial Assets Authority (UFAA) was created under the Unclaimed Financial Assets Act, No.40 of 2011 to administer unclaimed financial assets.

Required:

With reference to the above statement, summarise six specific roles of the Unclaimed Financial Assets Authority or equivalent authority in your country. (6 marks)

QUESTION 2

May 2018 Question One A

The objectives of a corporate governance system are to eliminate or mitigate conflicts of interest among stakeholders, particularly between managers and shareholders, and to ensure that the assets of the company are used efficiently and productively in the best interest of the investors and other stakeholders.

Required:

In the context of the above statement, discuss four core attributes of an effective corporate governance system. (4 marks)

QUESTION 3

November 2017 Question One A

Discuss how corporate governance might impact the dividend policy of a firm.

(6 marks)

QUESTION 4

May 2017 Question One A

Explain two ways in which increased investment in corporate social responsibility (CSR) activities might enhance the value of a firm. (4 marks)

QUESTION 5

November 2015 Question One A

In the context of financial management, explain what is meant by "stakeholder theory". (6 marks)

QUESTION 6

May 2015 Question Three A

In the context of financial management sector, explain four objectives of performance contracts in Public Sector Entities (PSEs). (8 marks)

PART B:

SUGGESTED

ANSWERS AND SOLUTION

TOPIC 1

ADVANCED CAPITAL BUDGETING DECISION

QUESTION 1

November 2020 Question One C

Chanzu Ltd

i) Whether to undertake the project

Money rate of return

$(1 + i) = (1 + r)(1 + h)$

Where: i = money rate

r = Real rate

h = inflation rate

$= [(1 + 0.16)(1.075) - 1] \times 100\%$

$= (1.247 - 1) \times 100\%$

$= \mathbf{24.7\%}$

Year	Fixed income	Savings	Total
1	2,500,000	$500,000 \times 1.05^1 = 525,000$	3,025,000
2	2,500,000	$500,000 \times 1.05^2 = 551,250$	3,051,250
3	2,500,000	$500,000 \times 1.05^3 = 578,812.5$	3,078,812.5
4	2,500,000	$500,000 \times 1.05^4 = 607,753.125$	3,107,753.125

Year	Total	Running costs	Net cash flows
1	3,025,000	$1,000,000 \times 1.1^1 = 1,100,000$	1,925,000.000
2	3,051,250	$1,000,000 \times 1.1^2 = 1,210,000$	1,841,250.00
3	3,078,812.5	$1,000,000 \times 1.1^3 = 1,331,000$	1,747,812.500
4	3,107,753.125	$1,000,000 \times 1.1^4 = 1,464,100$	1,643,653.125

Year	Cash flows	D.F 24.7%	PV
1	1,925,000.000	0.8010	1,543,657.500
2	1,841,250.000	0.6431	1,184,107.875
3	1,747,812.500	0.5157	901,346,906
4	1,643,653.125	0.4136	679,814.933