



CPA FOUNDATION LEVEL

CS FOUNDATION LEVEL

PILOT PAPER

INFORMATION COMMUNICATION TECHNOLOGY

December 2021.

Time Allowed: 3 hours.

Answer any FIVE questions.

ALL questions carry equal marks.

QUESTION ONE

(a) Consider the following data that exists in a spreadsheet format:

| | A | B | C | D | E | F |
|----|----------------|--------------|-----------------|--------------------|-----------------|-----------------|
| 1 | ITEM NO | TITLE | SUPPLIED | COVER PRICE | DISCOUNT | EXTENDED |
| 2 | 1 | Shaka | 65 | 679.00 | 135.8 | |
| 3 | 2 | Science II | 550 | 110.00 | 22 | |
| 4 | 3 | P Maths | 800 | 160.00 | 32 | |
| 5 | 4 | Our World | 320 | 350.000 | 70 | |
| 6 | 5 | Maths III | 430 | 640.00 | 128 | |
| 7 | 6 | History | 755 | 395 | 79 | |
| 8 | 7 | History II | 200 | 1500 | 300 | |
| 9 | 8 | P History | 490 | 900.00 | 180 | |
| 10 | 9 | War IT | 540 | 1150.0 | 230 | |
| 11 | 10 | Daily Star | 79 | 420.00 | 84 | |
| 12 | 11 | The People | 60 | 750 | 150 | |

Required:

- (i) Explain how you would format the column “COVER PRICE” to display values on the right-hand side with two decimal places. (2 marks)
- (ii) The “DISCOUNT” column needs to be calculated to display 20% discount if the supplied item cost Sh. 650 or higher, and 15% discount if an item costs less than Sh. 650. Explain how to achieve this. (2 marks)
- (iii) The “EXTENDED” column needs to contain the cost of the item purchases after the discounts have been calculated. Explain how to achieve this (2 marks)
- (b) By stating an example in each case, explain the following cloud computing models:
- (i) IaaS. (2 marks)
- (ii) SaaS. (2 marks)
- (c) Discuss the process of handling an interrupt that occurs during the execution of a program. (4 marks)
- (d) Explain the following terms as used in operating systems:
- (i) Thread. (2 marks)
- (ii) Internal fragmentation. (2 marks)
- (iii) Shell. (2 marks)

(Total: 20 marks)

QUESTION TWO

Patrick Baraza is seeking to automate the operations of his restaurant. For this purpose, he wishes to acquire computer hardware and software. He has come to you for advise regarding several aspects of this acquisition.

Required:

- (a) Explain why it would be advantageous for Patrick Baraza to build rather than buy the computer software. (3 marks)
- (b) Distinguish between the following sets of terms as they are applied to computer hardware:
 - (i) PATA (IDE) and SATA hard disk interfaces. (2 marks)
 - (ii) On-board devices and peripheral devices. (2 marks)
- (c) Describe the function of any three input/output ports. (3 marks)
- (d) Discuss the factors that Baraza should consider before purchasing software. (5 marks)
- (e) Discuss why Patrick Baraza will need to secure his computer network. (5 marks)

(Total: 20 marks)

QUESTION THREE

- (a) Discuss any four differences between first and second generation of programming languages. (4 marks)
- (b) Discuss three basic types of information systems. (6 marks)
- (c) Describe the challenges that organisations can face when implementing information systems. (5 marks)
- (d) List two internet service providers in your country and discuss the criteria that would be used to decide the appropriate one. (5 marks)

(Total: 20 marks)

QUESTION FOUR

- (a) Explain the five components of an information system. (5 marks)
- (b) Discuss the process of gathering requirements for the purpose of developing an information system. (5 marks)
- (c) As a result of the COVID-19 pandemic, most organizations have deployed a work-from-home structure where employees exchange company communication and data over the Internet. Discuss the positive and negative impacts of this mode of working on organizations and their employees. (10 marks)

(Total: 20 marks)

QUESTION FIVE

- (a) Explain the required qualities of each of the following people in the development of computer systems:
 - (i) System analyst. (4 marks)
 - (ii) Systems designer. (4 marks)
- (b) Mobile applications have in the recent years become very common. With reference to this, explain the following:
 - (i) Bluetooth. (2 marks)
 - (ii) WIFI. (2 marks)
 - (iii) VOIP. (2 marks)
- (c) Identify any four common problems the developers of mobile applications face. (4 marks)
- (d) List two mobile operating systems. (2 marks)

(Total: 20 marks)

QUESTION SIX

(a) Jipambe Beauty and Cosmetics has been operating since year 2013 and have expanded their business operations to the major cities where they have a chain of stores along major streets. The business manager is considering extending the business to an e-commerce platform.

Required:

- (i) Explain the business opportunities that could arise as a result of implementing an e-commerce venture. (4 marks)
 - (ii) Discuss the factors that Jipambe Beauty and Cosmetics could consider when designing an e-payment system. (5 marks)
 - (iii) Describe any three e-governance models. (6 marks)
- (b) Discuss any five ethical principles for judging conduct that could be used in conjunction with an ethical analysis in the use of ICT. (5 marks)

(Total: 20 marks)

QUESTION SEVEN

(a) Discuss **FOUR** purposes of maintaining a backup in an organisation. (4 marks)

(b) Explain the following types of backups:

- (i) Full backup (2 marks)
- (ii) Incremental backup (2 marks)
- (iii) Differential backup. (2 marks)

(c) Discuss four roles of accounting information systems to organisations. (4 marks)

(d) Explain the following computer data terms:

- (i) Byte. (2 marks)
- (ii) File. (2 marks)
- (iii) Database. (2 marks)

(Total: 20 marks)

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