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CPA FOUNDATION LEVEL

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INFORMATION COMMUNICATION TECHNOLOGY

WEDNESDAY: 21 August 2024. Afternoon Paper.   **Time Allowed: 3 hours.**

This paper has seven (7) questions. Answer any FIVE questions. ALL questions carry equal marks. Do NOT write anything on this paper.

QUESTION ONE

(a)   Explain the function of an operating system in job accounting.   (2 marks)

(b)   Highlight **THREE** ways in which operating systems authenticate users.   (3 marks)

(c)   Outline **FOUR** functions of user documentation during the development of an information system.   (4 marks)

(d)   Enumerate **FIVE** factors to consider when designing an information system output.   (5 marks)

(e)   Information Communication Technology (ICT) has heightened ethical issues and exerted pressure on existing social arrangements.

        Discuss **THREE** technological trends that are responsible for the above issues.   (6 marks)
                                                                                                (Total: 20 marks)

QUESTION TWO

(a)   Explain **TWO** benefits of using pivot tables in a spreadsheet software.   (4 marks)

(b)   Outline **FOUR** applications of mobile computing in the financial sector.   (4 marks)

(c)   Describe **FOUR** ways in which the Internet of Things (IoT) impacts our daily lives.   (4 marks)

(d)   Examine **FOUR** ways on how an organisation should handle sensitive data in order to ensure confidentiality, prevent unauthorised access and data misuse.   (8 marks)
                                                                                                (Total: 20 marks)

QUESTION THREE

(a)   Highlight **THREE** important factors to consider when choosing a network topology.   (3 marks)

(b)   An organisation processes and stores large volumes of data in an information system.

        Explain **THREE** data security goals that the organisation might aim to achieve in the above scenario.   (3 marks)

(c)   (i)   Examine **TWO** challenges of e-commerce infrastructure.   (4 marks)

        (ii)   Describe **FOUR** ways that could be used to secure an e-commerce infrastructure.   (4 marks)

(d)   Using an appropriate scenario, demonstrate how you would solve a business problem using spreadsheet solver.
                                                                                                        (6 marks)
                                                                                                (Total: 20 marks)

QUESTION FOUR

(a) Explain **TWO** circumstances that would necessiate an organisation to use the outsourcing method to acquire an information system. (4 marks)

(b) Highlight **FOUR** limitations of cloud computing. (4 marks)

(c) Explain **THREE** circumstances that could necessitate setting up of a Local Area Network (LAN) in an organisation. (6 marks)

(d) Highlight **SIX** measures that could be used to minimise unethical ICT practices in an orgnisation. (6 marks)

(Total: 20 marks)

QUESTION FIVE

(a) State **TWO** factors that determine the choice of data collection method. (2 marks)

(b) List **THREE** deliverables produced during the systems analysis phase of an information system development. (3 marks)

(c) Examine **THREE** ways that prototyping helps to identify and clarify user requirements. (3 marks)

(d) Giving **TWO** examples in each case, differentiate between an "application suite" and an "integrated software". (6 marks)

(e) Examine **THREE** factors that could be used to determine the capabilities of a data transmission medium. (6 marks)

(Total: 20 marks)

QUESTION SIX

(a) Outline **THREE** characteristics of mobile cloud computing application. (3 marks)

(b) Explain **FOUR** services offered by an Internet Service Provider (ISP). (4 marks)

(c) Highlight **FOUR** circumstances that would necessitate an organisation to use mail merge feature in a word processing program. (4 marks)

(d) List **FOUR** disadvantages of prototyping in systems analysis and design. (4 marks)

(e) Describe **FIVE** major activities of an operating system with regard to process management. (5 marks)

(Total: 20 marks)

QUESTION SEVEN

(a) Discuss **THREE** activities involved during information system requirements elicitation process. (6 marks)

(b) Outline **FOUR** activities of an operating system in regard to management of secondary storage. (4 marks)

(c) Describe **FOUR** environmental impact of ICT in business. (4 marks)

(d) The introduction of new information technology raises new ethical, social, and political issues that must be dealt with on an individual, social, and political levels.

Discuss **THREE** moral dimensions raised by these issues. (6 marks)

(Total: 20 marks)

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INFORMATION COMMUNICATION TECHNOLOGY

WEDNESDAY: 24 April 2024. Afternoon Paper.   **Time Allowed: 3 hours.**

This paper has seven (7) questions. Answer any FIVE questions. ALL questions carry equal marks. Do NOT write anything on this paper.

QUESTION ONE
(a)   List **TWO** limitations of mobile computing.   (2 marks)

(b)   Identify **SIX** factors to consider in the selection and acquisition of a computer operating system.   (6 marks)

(c)   Every organisation, regardless of its size or industry needs to prioritise the implementation of robust data security controls.

        Explain **FOUR** types of data security controls.   (8 marks)

(d)   Quick Response (QR) codes have gained significant popularity in recent years, becoming a widely adopted technology for various purposes.

        Outline **FOUR** reasons for the popularity of QR codes.   (4 marks)
                                                                        (Total: 20 marks)

QUESTION TWO
(a)   The emergence of mobile communication applications has revolutionised how people communicate and interact with each other.

        Explain **FOUR** essential features of a communication application.   (8 marks)

(b)   Outline **SIX** moral dimensions associated with information systems.   (6 marks)

(c)   A company uses cloud computing technology for data storage.

        Explain **THREE** ethical challenges the company might face while using this technology.   (6 marks)
                                                                        (Total: 20 marks)

QUESTION THREE
(a)   An increase in online data processing has led to increased rate of computer crimes.

        Describe **THREE** control measures that could be put in place to reduce computer crime rate in organisations.
                                                                        (6 marks)

(b)   Explain **THREE** circumstances that would necessitate the use of pilot approach during system change over.
                                                                        (6 marks)

(c)   Explain the following functions as used in spreadsheet application:

        (i)   SUMIF.   (2 marks)

        (ii)   PMT.   (2 marks)

(d)   An organisation installed an inhouse developed application software to support their operations.

State **FOUR** advantages they would gain by using this software.   (4 marks)
(Total: 20 marks)

QUESTION FOUR
(a)   Describe **TWO** reasons that would necessitate the use of water mark on a word processing document.
(4 marks)

(b)   Explain **FOUR** circumstances when batch operating system would be most appropriate.   (4 marks)

(c)   Explain **THREE** types of feasibility studies that are conducted during the development of an information system.
(6 marks)

(d)   Highlight **SIX** challenges of e-commerce in developing countries.   (6 marks)
(Total: 20 marks)

QUESTION FIVE
(a)   Outline **SIX** core processes for software development.   (6 marks)

(b)   Explain **TWO** reasons why a major operating system must evolve over time.   (4 marks)

(c)   Examine **THREE** methods that could be used to prevent social engineering related attacks.   (6 marks)

(d)   Explain **TWO** advantages and **TWO** disadvantages of digital wallets as an ecommerce payment method.
(4 marks)
(Total: 20 marks)

QUESTION SIX
(a)   Explain **TWO** reasons for multi-booting.   (2 marks)

(b)   Implementation is an importance phase in the development of an information system.

Describe **THREE** activities carried out in this phase.   (6 marks)

(c)   Business owners looking to manage financial data tend to embrace two primary options; spreadsheets and accounting software.

Evaluate **THREE** reasons why businesses prefer using accounting softwares.   (6 marks)

(d)   Explain **THREE** differences between "word processing software" and "desktop publishing software".   (6 marks)
(Total: 20 marks)

QUESTION SEVEN
(a)   (i)   Identify **FOUR** security threats in mobile applications.   (4 marks)

(ii)   Propose an appropriate measure to mitigate each of the threats identified in (a) (i) above.   (4 marks)

(b)   Social concerns in information systems are a crucial aspect of the development and implementation of information systems. These concerns are related to ethical, social, political and moral issues that arise from the use of information systems.

Examine **FOUR** social issues in Information Systems.   (8 marks)

(c)   Describe **FOUR** events that might spark an iterative process in software development.   (4 marks)
(Total: 20 marks)
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INFORMATION COMMUNICATION TECHNOLOGY

WEDNESDAY: 6 December 2023. Afternoon Paper.   Time Allowed: 3 hours.

This paper has seven (7) questions. Answer any FIVE questions. ALL questions carry equal marks. DO NOT write anything on this paper.

QUESTION ONE

(a)   Highlight **TWO** benefits of linking worksheets in a spreadsheet program.   (2 marks)

(b)   Outline **FOUR** qualities of a good system documentation.   (4 marks)

(c)   Explain **THREE** desirable features of e-commerce websites that could enable customers find products quickly.   (6 marks)

(d)   Examine **FOUR** challenges associated with cloud storage.   (8 marks)
                                                                                    (Total: 20 marks)

QUESTION TWO

(a)   Citing **TWO** examples, explain the term "mobile operating system".   (4 marks)

(b)   Using an example, explain the use of the "IF" function in a spreadsheet application.   (4 marks)

(c)   Explain **THREE** ways in which a transaction processing system helps in improving operations of an organisation.   (6 marks)

(d)   Analyse **THREE** factors that should be considered when creating a computer network.   (6 marks)
                                                                                    (Total: 20 marks)

QUESTION THREE

(a)   Differentiate between pilot implementation methodology and parallel information systems implementation methodologies.   (2 marks)

(b)   Highlight **FOUR** benefits of a network operating system to an organisation.   (4 marks)

(c)   Outline **FOUR** roles of an Information Systems Analyst.   (4 marks)

(d)   Explain **TWO** technical trends that generate ethical concerns.   (4 marks)

(e)   (i)   Distinguish between systems analysis and systems design.   (2 marks)

        (ii)   Citing **TWO** reasons, explain the purpose of the system development life cycle.   (4 marks)
                                                                                    (Total: 20 marks)

QUESTION FOUR

(a)   Explain **TWO** circumstances that would necessitate the use of speaker notes during a presentation.   (4 marks)

(b)   Baraka Company limited networked their computers to enhance their operations.

        Outline **FOUR** methods they could use to maintain security for their information in the network.   (4 marks)

(c)   Explain **THREE** ethical issues related to e-commerce for a business organisation.   (6 marks)

(d)   Justify with **THREE** reasons why an organisation would install a tailor-made software.   (6 marks)
                                                                                            (Total: 20 marks)

QUESTION FIVE

(a)   Examine **TWO** obstacles/challenges that could be faced by organisations when implementing a management information system.   (4 marks)

(b)   With respect to questionnaires, distinguish between open ended questions and closed ended questions as used in data collection.   (4 marks)

(c)   Enumerate **SIX** ways to secure e-commerce transactions from various threats.   (6 marks)

(d)   Highlight **SIX** benefits of post-implementation review of an information systems project.   (6 marks)
                                                                                            (Total: 20 marks)

QUESTION SIX

(a)   Explain the term "proofreading" as used in a word processing program.   (2 marks)

(b)   State the unit of measuring a computer's clock speed, RAM size, Hard disk size and monitor size.   (4 marks)

(c)   Discuss **THREE** challenges associated with the use of external hard drives.   (6 marks)

(d)   Examine **FOUR** legal issues associated with the use of information systems.   (8 marks)
                                                                                            (Total: 20 marks)

QUESTION SEVEN

(a)   Highlight **TWO** bookkeeping capabilities of a computerised accounting software.   (2 marks)

(b)   Explain **FOUR** application areas of "What if" analysis feature in spreadsheet application.   (4 marks)

(c)   Outline **SIX** hindrances to the adoption and success of voice user interface technology.   (6 marks)

(d)   Discuss **FOUR** ways in which an organisation could optimise the use of information systems to ensure improved productivity in a functional perspective.   (8 marks)
                                                                                            (Total: 20 marks)

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INFORMATION COMMUNICATION TECHNOLOGY

WEDNESDAY: 23 August 2023. Afternoon paper.   **Time Allowed: 3 hours.**

Answer any FIVE questions. ALL questions carry equal marks. DO NOT write anything on this paper.

QUESTION ONE
(a)   Explain how the following elements affect the processing power of a computer:

    (i)   Cache memory.   (2 marks)

    (ii)   Data bus.   (2 marks)

    (iii)   Type of processor.   (2 marks)

(b)   List **FOUR** limitations of star network topology.   (4 marks)

(c)   Highlight **FOUR** salient features of a Computerised Accounting Software (CAS).   (4 marks)

(d)   Outline **SIX** advantages of a pivot table report.   (6 marks)
                                                      (Total: 20 marks)

QUESTION TWO
(a)   Highlight **THREE** principles used to measure the integrity of data in an information system.   (3 marks)

(b)   Explain the significance of the following **FIVE** features of a presentation program.   (5 marks)
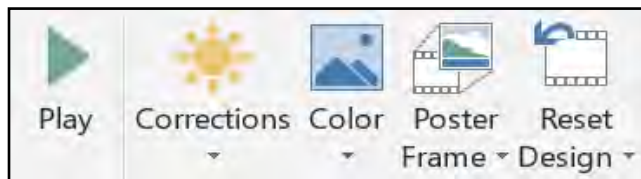
(c)   Examine **THREE** ways in which an operating system provides data security in a computer system.   (6 marks)

(d)   Explain the impact of **THREE** technological trends that pose ethical challenges to organisations.   (6 marks)
                                                      (Total: 20 marks)

QUESTION THREE
(a)   Highlight **TWO** ethical issues that need to be considered by an information systems development team. (2 marks)

(b)   Explain **TWO** types of computer networks under each of the following criterion:

    (i)   Functionality.   (4 marks)

    (ii)   Ownership.   (4 marks)

    (iii)   Transmission media.   (4 marks)

(c)   Assess **THREE** information system vulnerabilities and their respective countermeasures.   (6 marks)
                                                     (Total: 20 marks)

QUESTION FOUR

(a) Distinguish between "Executive Support System (ESS)" and "Decision Support System (DSS)". (2 marks)

(b) Highlight **SIX** advantages of Conditional Formatting in a spreadsheet program. (6 marks)

(c) Explain **THREE** components of a computer network. (6 marks)

(d) Analyse **SIX** benefits of developing a Disaster Recovery Plan (DRP). (6 marks)
(Total: 20 marks)

QUESTION FIVE

(a) List **FIVE** limitations of computer networking. (5 marks)

(b) Highlight **FIVE** reasons why an organisation may choose an off-the-shelf software package. (5 marks)

(c) Highlight **FIVE** benefits of cloud storage. (5 marks)

(d) Examine **FIVE** major components of e-commerce infrastructure. (5 marks)
(Total: 20 marks)

QUESTION SIX

(a) (i) State **TWO** examples of Network Operating System (NOS) from different software manufacturers. (2 marks)

(ii) List **TWO** advantages and **TWO** disadvantages of Network Operating Systems (NOS). (4 marks)

(b) Outline **FOUR** reasons why Read Only Memory (ROM) is preferred for storing firmware. (4 marks)

(c) Summarise **FOUR** ways in which a transaction processing system improves operations of an organisation. (4 marks)

(d) A library management system is an example of an information system.

In relation to the above statement, state **TWO** relevant examples of the following items in a library system:

(i) Data. (2 marks)

(ii) Processing. (2 marks)

(iii) Information. (2 marks)
(Total: 20 marks)

QUESTION SEVEN

(a) Explain **TWO** ways in which an operating system acts as a resource manager. (4 marks)

(b) Highlight **FOUR** benefits of Internet of Things (IoT) in smart home. (4 marks)

(c) Outline **SIX** instances when you would recommend prototypes during system development. (6 marks)

(d) Examine **SIX** benefits associated with business processes integration. (6 marks)
(Total: 20 marks)

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INFORMATION COMMUNICATION TECHNOLOGY

WEDNESDAY: 26 April 2023. Afternoon Paper.   **Time Allowed: 3 hours.**

Answer any FIVE questions. ALL questions carry equal marks. Do NOT write anything on this paper.

QUESTION ONE
(a)   Veronica and Simon have each bought a computer labelled Computer A and B respectively, with the following specifications:

Computer A	Computer B
128GB Flash Drive	512GB Hard Drive
16GB RAM	8GB RAM
150DPI Screen	225DPI Screen
15 inch screen	13 inch screen

Required:
Assuming that the cost of the two computers are the same, list **TWO** strengths of Computer A and **TWO** strengths of Computer B, describing the impact of each strength.   (4 marks)

(b)   Explain **FIVE** ways of protecting yourself from identity theft.   (5 marks)

(c)   Highlight **FIVE** activities that the operating system executes in relation to process management.   (5 marks)

(d)   Highlight **THREE** ethical and **THREE** societal issues to the development and use of information technology.
(6 marks)
(Total: 20 marks)

QUESTION TWO
(a)   (i)   Explain **THREE** reasons why most threats to an organisation's information system are contributed by insiders.   (3 marks)

         (ii)   State **FOUR** ways of preparing against insider threats.   (4 marks)

(b)   Explain **THREE** techniques for eliciting user requirements during information systems development. (6 marks)

(c)   David Omondi is the owner of a Home Appliances shop at the Douala Branch. Details of items sold by him during the month of March 2023 were given below:

	A	B	C
1	**ITEMS**	**BRAND**	**SALES PRICE**
2	COLOUR TV	SAMSUNG	28000
3	WASHING MACHINE	LG	23000
4	REFRIDGERATOR	WHIRLPOOL	24000
5	WASHING MACHINE	LG	22000
6	COLOUR TV	WHIRLPOOL	35000
7	REFRIDGERATOR	SAMSUNG	25000
8	WASHING MACHINE	SAMSUNG	22000
9	COLOUR TV	LG	20000

Required:
Explain the steps required to prepare a pivot table with the above information to show the sales for each brand using a spreadsheet application such as LibreOffice Cac. Use proper cell references in your explanation.

(7 marks)
(Total: 20 marks)

QUESTION THREE
(a)   Explain the rationale behind applying the systems development life cycle (SDLC) during the development of information systems.   (2 marks)

(b)   Outline **FOUR** methods for controlling unethical behaviour in ICT.   (4 marks)

(c)   Bidii Company has established that its information is being electronically eavesdropped through their servers.

Outline **FOUR** measures that the company could put in place to minimise this crime.   (4 marks)

(d)   Outline **FOUR** factors that could influence the choice of an information system.   (4 marks)

(e)   Explain **THREE** ways in which decision support systems are applied in an organisation.   (6 marks)
(Total: 20 marks)

QUESTION FOUR
(a)   Give **TWO** reasons why an operating system must evolve over time.   (4 marks)

(b)   Explain **THREE** impacts of e-commerce on customers.   (6 marks)

(c)   (i)   Explain **TWO** basic control measures that organisations could take to improve security on personal devices that employees connect to an organisation's network.   (4 marks)

        (ii)   Describe **THREE** Bring Your Own Device (BYOD) security best practices in an organisation.
                                                                                                    (6 marks)
(Total: 20 marks)

QUESTION FIVE
(a)   Highlight **FIVE** objectives of an information's system design.   (5 marks)

(b)   Explain **FIVE** possible reasons why an organisation may decide to replace an information system.   (5 marks)

(c)   Enumerate **FIVE** reasons why memory management is required in a computer system.   (5 marks)

(d)   Tujenge Ltd. is in the process of developing a new information system. A few managers are reluctant to embrace the new information system.

        Required:
        (i)   Identify the most suitable method of system changeover to apply in the above scenario.   (1 mark)

        (ii)   Outline **FOUR** advantages associated with the method identified in (d) (i) above.   (4 marks)
(Total: 20 marks)

QUESTION SIX
(a)   XYZ Ltd. invited an ICT consultant to set up a computer network. The consultant linked all the computers to every other in the network. The nodes were connected to every other via a dedicated link so that every node features a point-to-point connection to the opposite node.

        Required:
        (i)   State the type of network topology on the above scenario.   (1 mark)

        (ii)   Highlight **FIVE** benefits associated with the topology.   (5 marks)

(b)   Outline **FOUR** benefits associated with the use of pivot tables.   (4 marks)

(c)   Evaluate **FIVE** restoration procedures that could be used to recover lost data.   (5 marks)

(d)   Describe **FIVE** features of time-sharing operating system.   (5 marks)
(Total: 20 marks)

QUESTION SEVEN

(a)   ABC Enterprises Limited has commenced the process of integrating its current business operations with an ERP.

Required:

(i)   Outline **TWO** ways the ABC Enterprises Limited could benefit from the integration.   (2 marks)

(ii)   Highlight **THREE** challenges that could arise with such integration.   (3 marks)

(b)   Citing **FOUR** reasons, justify why it is necessary for an organisation to sign a contract for the maintenance of computer hardware and software.   (4 marks)

(c)   Complete the table below with appropriate name of the feature used in respective iOS and Android mobile operating systems:

Feature	iOS	Android
Developer		
Default browser		

(4 marks)

(d)   Explain **SEVEN** ethical issues associated with increased dependency on information systems.   (7 marks)

(Total: 20 marks)

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INFORMATION COMMUNICATION TECHNOLOGY

WEDNESDAY: 7 December 2022. Afternoon Paper.   **Time Allowed: 3 hours.**

Answer any FIVE questions. ALL questions carry equal marks. Do NOT write anything on this paper.

QUESTION ONE
(a)   State **FOUR** disadvantages of implementing information systems in an organisation.   (4 marks)

(b)   Explain **FIVE** computer hardware components that are required when establishing a multimedia platform for e-commerce.   (5 marks)

(c)   Using an example, explain how one would use "Goal seek" function in a business.   (5 marks)

(d)   Explain **THREE** problems that could be encountered when using a computerised accounting software.
                                                                                                (6 marks)
                                                                                  (Total: 20 marks)

QUESTION TWO
(a)   Outline the output products that result from the following systems development lifecycle stages:

        (i)   System initiation.   (2 marks)

        (ii)   Requirement analysis.   (2 marks)

        (iii)   Systems design.   (2 marks)

        (iv)   System integration.   (2 marks)

        (v)   Systems testing.   (2 marks)

(b)   Explain **TWO** limitations of using "Internet of things" (IoT) technology.   (4 marks)

(c)   Explain **THREE** ways in which e-commerce could be used to optimise business opportunities in a large hotel.
                                                                                                (6 marks)
                                                                                  (Total: 20 marks)

QUESTION THREE
(a)   (i)   Differentiate between "Intranet" and "Extranet" as used in computer networks.   (2 marks)

        (ii)   Outline **FOUR** limitations of using "extranet" as a computer network in an organisation.   (4 marks)

(b)   Organisations use different types of information systems.

        Required:
        (i)   List **THREE** types of information systems used by management.   (3 marks)

        (ii)   State the input, processes and output of information systems used by management.   (3 marks)

        (iii)   Explain **FOUR** enterprise information system characteristics that support unstructured decision making in organisations.   (4 marks)

(c)   Veronica stored word processing files in a flash disk when working from a home desktop computer. She has realised that the files could no longer open at her place of work.

        Required:
        Suggest **FOUR** reasons why some files may not open despite being visible on the flash disk.   (4 marks)
                                                                                  (Total: 20 marks)

QUESTION FOUR

(a)   Differentiate between an "accounting package" and a "spreadsheet" based on the following features:

      (i)   Report generation.   (2 marks)

      (ii)   Audit trail.   (2 marks)

(b)   Giving an example, explain the purpose of a mobile browser.   (3 marks)

(c)   Explain how cloud computing supports e-commerce operations.   (4 marks)

(d)   Explain **FOUR** social issues that may arise from the use of information systems.   (4 marks)

(e)   Assess **FIVE** ways in which general ICT controls ensure the reliability of data generated by information systems.   (5 marks)

(Total: 20 marks)

QUESTION FIVE

(a)   List **FOUR** types of software used to enable e-commerce business.   (4 marks)

(b)   Highlight **FOUR** types of skills that a system analyst is required to have in order to effectively carry out his/her tasks.   (4 marks)

(c)   Assess **FOUR** methods of controlling unethical behaviour in ICT.   (4 marks)

(d)   Kibao Masetu, a system analyst, used the prototyping method to develop an information system for Petoka Ltd.

      Explain **FOUR** advantages of using this method.   (8 marks)

(Total: 20 marks)

QUESTION SIX

(a)   (i)   Highlight **TWO** features of a presentation program that are not available in a word processing program.   (2 marks)

      (ii)   Explain **THREE** contexts in which one would need to use a presentation program instead of a word processing program.   (3 marks)

(b)   Enumerate **FIVE** reasons why an organisation might opt to use subcontractors for its information system needs.   (5 marks)

(c)   Outline **FOUR** benefits of conducting a feasibility study during systems development.   (4 marks)

(d)   Explain **THREE** factors to consider when choosing an operating system for a computer.   (6 marks)

(Total: 20 marks)

QUESTION SEVEN

(a)   Explain **TWO** characteristics of a "peer to peer" computer network.   (2 marks)

(b)   Highlight **TWO** legal issues and two ethical issues that may arise by use of information systems in a large-scale chain-based supermarket.   (4 marks)

(c)   Suggest **TWO** strategies that a country could adopt to minimise the digital divide.   (4 marks)

(d)   Simon has established an accounting firm in a busy town and employed seven assistants. However, the office space is not enough to accommodate all the staff and he has approached you for assistance.

      Required:

      (i)   Explain **THREE** modern ICT technologies that Simon could adopt to maximise employees' productivity despite space constraints.   (6 marks)

      (ii)   Explain **TWO** possible disadvantages that Simon could face in adopting any of the technologies in (d) (i) above.   (4 marks)

(Total: 20 marks)

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INFORMATION COMMUNICATION TECHNOLOGY

WEDNESDAY: 3 August 2022. Afternoon paper.   **Time Allowed: 3 hours.**

Answer any FIVE questions. ALL questions carry equal marks. Do NOT write anything on this paper.

QUESTION ONE
(a)   Suggest the ethical issues resulting from each of the following technological trends:

    (i)   Doubling of computing power every eighteen (18) months.   (2 marks)

    (ii)   Rapidly declining data storage costs.   (2 marks)

    (iii)   Advances in networking and the internet.   (2 marks)

(b)   Outline four characteristics of an open system.   (4 marks)

(c)   Describe five moral dimensions of information systems.   (5 marks)

(d)   Outline three measurers that you could include in your business continuity plan.   (3 marks)

(e)   Explain the purpose of HLOOKUP as used in spreadsheet applications.   (2 marks)
                                                                                                                                    (Total: 20 marks)

QUESTION TWO
(a)   Giving an example in each case, differentiate between technological convergence and digital convergence as used in information technology communication.   (4 marks)

(b)   XYZ Company Ltd. intends to develop an information system for its operations.

    Outline three strategies that the board could put in place to ensure the success of this project.   (3 marks)

(c)   A manager in an entertaining industry intends to use data driven decision support system to design a new product.

    Outline three characteristics that the system should possess.   (3 marks)

(d)   Suggest how a business could overcome each of the following e-commerce challenges.

    (i)   Payment fraud.   (2 marks)

    (ii)   Lack of visitors to the business website.   (2 marks)

    (iii)   Theft of customer information.   (2 marks)

(e)   Using an illustration, explain a pivot table as used in spreadsheet applications.   (4 marks)
                                                                                                                                    (Total: 20 marks)

QUESTION THREE
(a)   Formulate four questions that would enable you to conduct stakeholder analysis in system development.   (4 marks)

(b)   Explain the bookmark feature in the context of the internet browsing.   (2 marks)

(c)   Identify the type of cell referencing used in the spreadsheet expressions below:

    (i)   =RANK(C3 : A10,0)   (1 mark)

    (ii)   =SUM(A$3 : A12)   (1 mark)

(d)   Differentiate between sorting and filtering as used in worksheet data management.   (2 marks)

(e)   Differentiate between proofreading and formatting a document as used in word processing.   (2 marks)

(f)   A comprehensive backup plan is an essential tool for information security for the entire organisation. Not only should the data on the corporate servers be backed up, but individual computers used throughout the organisation should also be backed up.

          With reference to the above statement, discuss three components of a good backup plan.   (6 marks)

(g)   Explain each of the following terms as used in internet:

          (i)   Cookies.   (1 mark)

          (ii)   Blog.   (1 mark)
                                      (Total: 20 marks)

QUESTION FOUR

(a)   Citing three reasons, explain the importance of requirements gathering in system development.   (3 marks)

(b)   Justify why an information system is considered as an intellectual property.   (4 marks)

(c)   Explain the following features of a presentation package:

          (i)   Transition effects.   (1 mark)

          (ii)   Speaker notes.   (1 mark)

          (iii)   Templates.   (1 mark)

(d)   The organisation where you work intends to set up a local area network.

          Advise your management team on three hardware components required to accomplish the above task.   (6 marks)

(e)   Outline four factors that could be used when selecting the best software development methodology for a specific project.
                                        (4 marks)
                                      (Total: 20 marks)

QUESTION FIVE

(a)   Explain six reasons that would cause an information system project to fail during the implementation stage.   (6 marks)

(b)   In each of the following, explain how a spreadsheet program is used:

          (i)   Accounting.   (2 marks)

          (ii)   Forecasting.   (2 marks)

(c)   Describe each of the following ethical issues in regard to computer technology:

          (i)   Trade marks.   (2 marks)

          (ii)   Patent rights.   (2 marks)

(d)   Most organisations align their information systems functions to their business strategic plan.

          Explain three benefits of this alignment.   (6 marks)
                                      (Total: 20 marks)

QUESTION SIX

(a)   An insurance company has decided that it no longer requires a physical Head Office. Its strategic aim is to become a virtual organisation. The company's auditors have concerns that information held by the virtual company would lack security.

          Required:
          Describe three measures that could be adopted to ensure the information in the insurance company remain secure.
                                      (6 marks)

(b)   Highlight three challenges of prosecuting ICT cases in court.   (3 marks)

(c)   Explain four application areas of cloud computing technology in a governance/accounting services firm.   (4 marks)

(d)   Identify five major management challenges to building and implementing information systems within an organisation.
                                                                                                                        (5 marks)

(e)   Outline two limitations of a touch screen as an input device.   (2 marks)
                                                                                                         (Total: 20 marks)

QUESTION SEVEN
(a)   Explain three legal issues involved when a person who is a resident in Kenya or your country wants to purchase a car offered for sale in Japan via a server in Hungary. Assume he is doing online purchase through e-Commerce.   (3 marks)

(b)   John Mbululu intends to implement cloud computing in his organisation but he has several concerns about cloud computing.

        Suggest three possible concerns for John Mbululu.   (3 marks)

(c)   One technique for gathering requirements during system development is the use of workshops.

        Discuss two advantages and two disadvantages of using workshops for requirements gathering.   (4 marks)

(d)   (i)   To minimise resistance during system changeover, it is always necessary to involve users.

                Identify four different ways of involving users in the system development process.   (4 marks)

        (ii)   Explain four approaches used in system changeover.   (4 marks)

        (iii)   Explain the significance of an information centre in an organisation.   (2 marks)
                                                                                                         (Total: 20 marks)

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CPA FOUNDATION LEVEL

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INFORMATION COMMUNICATION TECHNOLOGY

WEDNESDAY: 6 April 2022. Afternoon paper.   **Time Allowed: 3 hours.**

Answer any FIVE questions. ALL questions carry equal marks. Do NOT write anything on this paper.

QUESTION ONE
(a)   Explain five factors to consider when selecting a spreadsheet software.   (5 marks)

(b)   Explain the following terms as applied to data security in e-commerce.

    (i)   Privacy.   (2 marks)

    (ii)   Integrity.   (2 marks)

    (iii)   Authentication.   (2 marks)

    (iv)   Non-repudiation.   (2 marks)

(c)   (i)   Outline two advantages of a professional code of ethics.   (2 marks)

    (ii)   Highlight two drawbacks of a professional code of ethics.   (2 marks)

(d)   Examine three impacts of the internet on the education sector.   (3 marks)
                    (Total: 20 marks)

QUESTION TWO
(a)   ABC Ltd. has opted to adopt a decision support system in the restructure of its business processes.

    Required:
    (i)   State three moral dimensions the company would consider from this move.   (3 marks)

    (ii)   Outline three legal issues the company is likely to consider from this move.   (3 marks)

(b)   Outline four possible causes of ICT project failure during system implementation.   (4 marks)

(c)   (i)   Explain the term "requirement elicitation" in relation to software development.   (2 marks)

    (ii)   Explain two "requirements Elicitation" techniques.   (4 marks)

(d)   Highlight four features of a word processing of application package.   (4 marks)
                    (Total: 20 marks)

QUESTION THREE
(a)   Discuss six reasons why a computer operating system is considered as a resource manager.   (6 marks)

(b)   It is possible to lose a laptop, a mobile phone or a flash disk.

    Discuss four ways you could protect the data in your device to minimise data breach.   (8 marks)

(c)   The Tangaza County Government intends to establish information centres.

    Explain two services that are likely to be offered at the centres.   (4 marks)

(d)   State two challenges of using computerised accounting software in an organisation.   (2 marks)
                    (Total: 20 marks)

QUESTION FOUR

(a)   Discuss the importance of information security policies.   (5 marks)

(b)   Explain four reasons why an organisation may prefer to install a peer to peer networking model.   (8 marks)

(c)   Outline seven indicators of a successful information system.   (7 marks)

(Total: 20 marks)

QUESTION FIVE

(a)   (i)   Explain the term "smart home" as used in the world of technology.   (1 mark)

        (ii)   Describe the importance of the "Internet of Things" in the smart home.   (4 marks)

(b)   Explain three reasons why organisations pursue business process integration.   (6 marks)

(c)   E-commerce customers should be able to find the product they are looking for quickly.

    Identify three best practice features for e-commerce websites.   (3 marks)

(d)   Examine the significance of carrying out stakeholder analysis before undertaking an information systems project.   (6 marks)

(Total: 20 marks)

QUESTION SIX

(a)   Discuss three benefits that are provided by mobile devices and applications for health care professionals.   (6 marks)

(b)   (i)   Explain the term "Uniform Resource Locator (URL)".   (2 marks)

        (ii)   Using an example, explain the functions of each of the three key parts of a URL.   (6 marks)

(c)   Assess three benefits of data backup and recovery procedures in a business.   (6 marks)

(Total: 20 marks)

QUESTION SEVEN

(a)   The Internet of Things (IoT) has grown very rapidly and emerged to be a large part of how human beings live, communicate and conduct business. While web-enabled devices are turning our global rights into a great switched-on operating area, the implementation of IoT has several challenges.

    Discuss four security challenges that accompany IoT.   (8 marks)

(b)   Identify four benefits of requirements gathering process in an information system development.   (4 marks)

(c)   (i)   Identify three challenges that businesses could face in adopting e-commerce.   (3 marks)

        (ii)   For each of the identified challenges in (c) (i) above, suggest a suitable solution that businesses could use to deal with it.   (3 marks)

(d)   Summarise two common challenges encountered while using the system development life cycle (SDLC) model.   (2 marks)

(Total: 20 marks)

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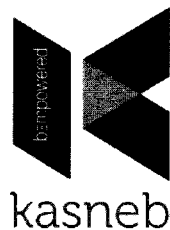
CPA FOUNDATION LEVEL

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INFORMATION COMMUNICATION TECHNOLOGY

FRIDAY: 17 December 2021. **Time Allowed: 3 hours.**

Answer any FIVE questions. **ALL questions carry equal marks.**

QUESTION ONE
(a) (i) Distinguish between the "e-wallets" and "bank transfers" e-commerce payment methods. (4 marks)

(ii) In an era of identity theft and impersonation, security is among the primary concerns that restrains consumers from engaging in e-commerce.

With respect to the above statement, examine three critical functions that are performed by a secure electronic transaction (SET) system. (6 marks)

(b) (i) Explain five benefits of a strategic information system to a business. (5 marks)

(ii) Highlight five benefits of aligning an organisation's information communication technology (ICT) with its business strategy. (5 marks)

(Total: 20 marks)

QUESTION TWO
(a) Discuss "sales and marketing systems" from a functional perspective. (5 marks)

(b) Explain five moral dimensions of the information age in the context of information systems. (5 marks)

(c) Alpha Limited is in the process of automating its operations.

State four types of office automation systems that the company should adopt. (4 marks)

(d) ABC Company intends to undertake an information systems project.

Outline three challenges that the company is likely to face. (3 marks)

(e) Explain three goals of a transaction processing system to an organisation. (3 marks)

(Total: 20 marks)

QUESTION THREE
(a) (i) Outline three models used in classifying e-commerce applications. (3 marks)

(ii) Explain two security challenges encountered in digital marketing of e-commerce. (4 marks)

(b) Most companies have embraced the use of cloud technology though they are facing challenges in its use.

Explain three such challenges. (3 marks)

(c) Define each of the following terms as used in systems theory.

(i) Functional decomposition. (2 marks)

(ii) Functional cohesion. (2 marks)

(iii) Feed-forward. (2 marks)

(d) Describe four features of systems approach to information systems. (4 marks)

(Total: 20 marks)

QUESTION FOUR

(a)   Highlight four characteristics of Internet of Things (IoT).   (4 marks)

(b)   Propose four duties of an information centre in an organisation.   (4 marks)

(c)   ABC Transport company has opted to train its users before a new system is implemented.

        Suggest four benefits of training users before implementing a new information system.   (4 marks)

(d)   Outline four advantages of using joint application design (JAD) technique in the design of an information system.
                                                                                                                        (4 marks)

(e)   (i)   Define "cell referencing" in the context of spreadsheet applications.   (2 marks)

        (ii)   Using an example, explain one type of cell referencing.   (2 marks)
                                                                                                             (Total: 20 marks)

QUESTION FIVE

(a)   Describe five challenges associated with the use of internet.   (5 marks)

(b)   (i)   Define the term "system" in the context of information systems.   (1 mark)

        (ii)   Distinguish between "physical systems" and "abstract systems".   (2 marks)

(c)   (i)   Describe the job of a Systems Analyst.   (1 mark)

        (ii)   Outline five tasks performed by a Systems Analyst.   (5 marks)

(d)   Study the worksheet given below and answer the questions that follow:

G1	▼	⋮	▷	✓	*fx*	=SUMIF(A1:F1, "<=10")

◢	A	B	C	D	E	F	G
1	2	8	10	10	15	15	
2							
3							

Required:

(i)   Interpret the function displayed in cell G1.   (2 marks)

(ii)   State the value to be displayed in cell G1 on execution of the function.   (2 marks)

(e)   Veronica would like to display the progress of her project to a panel of examiners using a presentation application.

        Outline two ways in which she could display her presentation in slide show mode.   (2 marks)
                                                                                                             (Total: 20 marks)

QUESTION SIX

(a)   Evaluate the impact of the internet on the following competitive forces:

        (i)   Threat of new entrants.   (2 marks)

        (ii)   Suppliers' bargaining power.   (2 marks)

        (iii)   Customers' bargaining power.   (2 marks)

        (iv)   Substitute products or services.   (2 marks)

(b)   Outline eight activities carried out during systems analysis.   (8 marks)

(c)   Using an example, demonstrate how you would use a formula to link data between two worksheets.   (4 marks)
                                                                                                             (Total: 20 marks)

QUESTION SEVEN

(a)   Describe each of the following types of information systems as used in organisations:

      (i)   Transaction processing system.   (2 marks)

      (ii)   Management reporting system.   (2 marks)

      (iii)   Decision support system.   (2 marks)

(b)   XYZ Company Ltd. intends to implement a new information system.

    Explain three organisational factors that should be considered to ensure success of the system.   (6 marks)

(c)   Explain three types of applications of Internet of Things (IoT) in the government sector.   (6 marks)

(d)   Outline two features of a word processing program.   (2 marks)

(Total: 20 marks)

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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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