



STRATHMORE INSTITUTE
DIPLOMA IN BUSINESS MANAGEMENT/DIPLOMA IN INTERNATIONAL
RELATIONS/DIPLOMA IN ENTREPRENEURSHIP
DBM 1105/DIR 1105/DE 1106
END OF SEMESTER EXAMINATION
FUNDAMENTALS OF INFORMATION TECHNOLOGY

DATE: 12th MAY 2021

TIME: 2 Hours

Instructions

1. This examination consists of **FIVE** questions.
2. Answer **Question ONE (COMPULSORY)** and any other **TWO** questions.
3. Do not write on the question paper.

SECTION A: (30 MARKS)

QUESTION ONE

(a) **Multiple Choice Questions:** *Indicate the correct option (e.g. A/B/C/D/E) or correct response on the answer booklet.* **(20 Marks)**

- | | |
|---|---|
| i) Every Computer essentially consists of:

A. Memory unit, input, and output units

B. Control unit, input and output units and memory units | C. Arithmetic logic unit, control unit, output and input units, program counter

D. Arithmetic logic unit, memory unit, control unit, input, and output units |
| ii) The Central Processing Unit (CPU) of a computer consists of: | |

- A. Control and arithmetic logic unit and primary storage
 - B. Control, clock, and ROM
 - C. Control, clock, and RAM
 - D. Control, ALU, RAM and ROM
- iii) The term 'Operating System' means:
 - A. A set of programs which helps to display
 - B. A set of programs which helps to control the working of a computer
 - C. Set of a program which helps to convert high level instructions to machine level instructions and vise-versa
 - D. None of the above
- iv) Which list contains **only** input peripheral devices?
 - A. Speakers, scanners, mouse, modem
 - B. Keyboard, projector, mouse, flash drive
 - C. Microphones, track-ball mouse, scanner, touch screen
 - D. Laser printer, graphic tablet, barcode reader, hard disk
- v) A program that is used to view web sites is called a ____
 - A. Word processor
 - B. Web viewer
 - C. Spreadsheet
 - D. Browser
- vi) Which of the following network devices has the capability to determine the best path to transmit data and determine alternative pathways?
 - A. Router
 - B. Switch
 - C. Pathfinder
 - D. Director
- vii) Which of the following is TRUE about RAM?
 - A. It is located on the motherboard
 - B. It holds all programs in use
 - C. It holds documents in progress
 - D. All of the above
- viii) The type of software that sits on top of the operating system and utilizes the computer's capabilities to perform a user task is called:
 - A. System software
 - B. Utility software
 - C. Application software
 - D. Internal software
- ix) If you restart your computer by switching it off (i.e. power cut), it is known as:
 - A. Soft boot
 - B. Cold boot
 - C. Warm boot
 - D. A & C

- x) The central processing unit is located within the system's case. The system case is also known as the system _____
- xi) The Third Generation Computer used:
- A. Transistors
 - B. Integrated circuit
 - C. Vacuum tube
 - D. Chip
- xii) In a denial of service attack, the commandeered computers form a botnet, and the individual computers are called:
- A. Attackers
 - B. Zombies
 - C. Slaves
 - D. Worms
- xiii) 'The petrol gauge was showing almost empty. I decided to look out for the next petrol station'. What is the statement 'I decided to look out for the next petrol station' an example of?
- A. Data
 - B. Information
 - C. Knowledge
- xiv) What does putting data into a framework or structure provide?
- A. More Information
 - B. Rules
 - C. Context
- xv) The general transformation cycle for information is:
- A. Information to data to knowledge.
 - B. Knowledge to data to information
 - C. Data to knowledge to information
 - D. Data to information to knowledge
 - E. None of the above
- xvi) Consider the following statements:
- i. The first generation computer was entirely based on electronic system.
 - ii. The first generation computer used vacuum tubes to store commands and used magnetic drums for memory.
- Choose the correct answer from the codes given below:
- A. Only i
 - B. Only ii
 - C. Both
 - D. Neither i nor ii
- xvii) Byte is the series of _____ bits.
- A. 2
 - B. 5
 - C. 8
 - D. 12
- xviii) Decision makers who are concerned with tactical (short-term) operational problems and decision making are
- A. Middle managers
 - B. Executive managers

- | | | | |
|------|----------------------------------|-----|------------------------------------|
| | C. Supervisors | | D. Use the transaction data to |
| | D. Mobile managers | | produce information needed by |
| | E. None of the above | | managers to run the business |
| xix) | Management information systems | | E. None of the above |
| | (MIS) | | F. None of the above |
| | A. Create and share documents | xx) | Which of the following checks to |
| | that support day-today office | | see that the hardware is operating |
| | activities | | appropriately? |
| | B. Process business transactions | | A. RAM |
| | (e.g., time cards, payments, | | B. BIOS |
| | orders, etc.) | | C. ROM |
| | C. Capture and reproduce the | | D. POST |
| | knowledge of an expert | | |
| | problem solver | | |

(b) During a class discussion you are presenting on the topic, the Operating System. As a graduate of this course:

- i) Describe an operating system, giving **two** examples of operating systems used for servers. **(2 marks)**
- ii) One of the functions of the operating system is to start and shut down a computer. An operating system includes various options such as booting, warm boot, cold boot, sleep mode and hibernate mode. Describe each of these terms. **(5 marks)**
- iii) Explain any **three** characteristics of an operating system. **(3 marks)**

SECTION B: (15 marks per question. Choose any Two)

QUESTION TWO

- (a) Giving an example, define a computer network. **(2 marks)**
- (b) Supporting your responses with relevant examples, explain **three** benefits of computer networking to an institution such as Strathmore University. **(3 marks)**
- (c) Assuming you own a business that sells clothes, explain **four** ways you would use the internet to grow in the market? **(4 marks)**

(d) The two main strategies for connecting computers are: (a) Client/Server and (b) Peer-to-Peer.

i) Briefly describe **each** of these strategies. **(4 marks)**

ii) Draw a well labeled diagram to represent any **one** of the strategies in (d) above. **(2 marks)**

QUESTION THREE

Tatenda is an entrepreneur running a cyber café in the outskirts of Nairobi. When he began three years ago he acquired 6 computers, 1 hub, and 1 desk jet printer and used a modem for internet access. Business has been good so far and Tatenda wishes to diversify his operations to include a small training school where he will be training in the use of business application software including spreadsheets such as MS Excel, presentations such as MS PowerPoint and word processors such as MS Word. He also wants to automate many of his operations, reduce costs and improve service delivery. Tatenda has partnered with a friend to raise capital for this business venture. Together they have acquired a loan and managed to secure new office space and are in the process of acquiring equipment for network connections i.e. more computers, 2 servers, 1 network printer, switches or hubs etc.

(a) In acquiring computer systems, explain **two** factors Tatenda should consider regarding the quality of the computers' display screens. **(2 marks)**

(b) Explain **three** factors that Tatenda should consider when evaluating printers for purchase for his business. **(3 marks)**

(c) Security is bound to be a concern for Tatenda's business. Advice Tatenda on three ways in which he can secure each of the following aspects of his network:

i) Content **(3 marks)**

ii) Infrastructure **(3 marks)**

(d) In the current society, technology and the technological gadgets can be said to be in the fifth generation characterized by reduction in size, among other characteristics. These improvements are making computer-based information systems relevant to the society and more specifically in business management. You have been invited by Tatenda for a presentation to his students on this topic.

- i) Giving relevant examples, explain in detail **four** strengths of computer-based information systems in business management. **(4 marks)**

QUESTION FOUR

- (a) You are provided with the following computer components.

- Processor
- An input device
- An output device and
- Memory or Storage unit

Using Von Neumann model as a template for all modern computers, use a diagram to explain how these components interact. Any important components in the processor should be shown. **(5 marks)**

- (b) The storage unit contains volatile and non-volatile memory. Explain these two types of memory and provide an example of each. **(4 marks)**
- (c) As cloud computing is increasingly becoming successful, there are many cloud storage services available and many offer a free plan for a limited amount of space. Depending on your needs, a free plan might be ideal for you.
- i) What do you understand by the term 'cloud storage'? **(2 marks)**
- ii) Explain any **two** benefits of cloud storage. **(2 marks)**
- (d) Describe system software and give an example. **(2 marks)**

QUESTION FIVE

- (a) Digital computers internally use the binary (base 2) number system to represent data and perform arithmetic calculations. You have been asked to key in integer 139 into a computer.
- i) Convert this decimal integer to binary value which the computer will understand. **(2 marks)**
- ii) Convert your answer in (i) above to decimal number system. **(2 marks)**
- (b) A computer has a processor speed of 2 gigahertz. Approximately how many instructions can it process per second? *Show your working where necessary.* **(2 marks)**

- (c) The soft drinks sales data below have been entered into an excel worksheet. Use the information given to answer the questions that follow.

	A	B	C	D
1	Region	Coke	Mountain Dew	Total
2	Nairobi	40,000	10,000	50,000
3	Kampala	35,000	40,000	
4	Kigali	50,000	40,000	
5	Dodoma	65,000	60,000	
6	Total			
7	Highest value			

- Write **two** different formulae which if placed in C6 will show the total sales figure for the Mountain Dew column. **(2 marks)**
- Write a function which if placed in B7 will show the highest sales figure for the coke column. **(1 mark)**
- If the formula placed in cell D2 is copied down the column to cell D5, what will be the formula in D5? **(2 marks)**
- What feature in MS Excel would be used to copy the formula used in cell D2 along the range of cells D3:D5. **(1 mark)**
- Your sibling has approached you for help in creating a graduation invitation letter which she intends to print and send to fifty recipients. She has already designed a template invitation letter.

Explain to her the procedure that she would follow to create a mail merge document that she would send to the fifty guests. **(3 marks)**