



**STRATHMORE INSTITUTE**  
**DIPLOMA IN BUSINESS MANAGEMENT/DIPLOMA IN INTERNATIONAL**  
**RELATIONS/DIPLOMA IN ENTREPRENEURSHIP**

**END OF SEMESTER EXAMINATION FULL TIME PROGRAMME**  
**DBM 1105/DIR 1105/DE1106**  
**FUNDAMENTALS OF INFORMATION TECHNOLOGY**

**DATE: 21<sup>st</sup> DECEMBER 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 or exam card.

**SECTION A: (30 MARKS)**

**QUESTION ONE**

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

- |   |   |
|---|---|
| <p>i) Which generation of computer developed using integrated circuits?</p> <ul style="list-style-type: none"><li>A. First generation</li><li>B. Second generation</li><li>C. Third generation</li><li>D. Fourth generation</li><li>E. Fifth generation</li></ul> <p>ii) The process of loading the OS to memory is which of the following?</p> <ul style="list-style-type: none"><li>A. Configuration</li><li>B. Booting</li><li>C. Authentication</li><li>D. Installing</li><li>E. None of the above</li></ul> <p>iii) If a large business is going to use a single computer to run many programs for hundreds of users at the same time, performing relatively simple operations and transactions, the type of computer will probably be a:</p> <ul style="list-style-type: none"><li>A. Supercomputer</li></ul> | <ul style="list-style-type: none"><li>B. Personal Computer (PC)</li><li>C. Mainframe</li><li>D. Internet Service Provider (ISP)</li></ul> <p>iv) Rank the following media according to their access time starting from the one with the slowest to the one with fastest access time</p> <ul style="list-style-type: none"><li>A. Primary cache, secondary cache, RAM, Hard-disk, Compact Disc</li><li>B. Compact Disc, Hard-disk, RAM, secondary cache, Primary cache</li><li>C. Hard-disk, Compact Disc, Secondary cache, primary cache, RAM</li><li>D. Secondary cache, Primary cache, Hard-disk, RAM, Compact Disc</li></ul> |
|---|---|

- v) Which one of the following is **not** an element of software?
- Visual Display Unit
  - Operating System
  - Utilities
  - Application packages
- vi) Which one of the following approximate measures is used to express a terabyte (TB)?
- 1,000 bytes of storage
  - 1000,000 bytes of storage
  - 1,000,000,000 bytes of storage
  - 1,000,000,000,000 bytes of storage
- vii) RAM provides a computer with:
- A temporary memory storage location
  - A place to store information as it is being swapped in and out of the CPU registers during data processing
  - A place to store memory-resident programs during processing
  - All of the above
- viii) \_\_\_\_\_ is the science that attempts to produce machines that display the same type of intelligence that humans do.
- Parallel processing
  - Nanotechnology
  - Simulation
  - Artificial intelligence (AI)
  - None of these
- ix) Which formulae from the list will give you the same results as this:  

$$= (A2+A3+A4+A5+A6+A7)/6?$$
- =AVERAGE (A2\*A7)
  - =SUM (A2:A7)/ 6
  - = AVERAGE (A2:A7)
  - =AVERAGE (A2, A7)
  - All the above
- x) In Microsoft Excel, what is the intersection between a row and column called?
- A matrix
  - A cell
  - A range
  - A block
- xi) In order to access resources on the Internet, the location or address of the resources must be specified. These addresses are called:
- Uniform Resource Locators (URLs)
  - E-mail forms
  - Packets
  - Microsoft Network (MSN)
- xii) If a university sets up a web-based information system that the students could access to record student grades and to advise students, that would be an example of a/an
- CRM
  - Intranet
  - ERP
  - Extranet
  - None of the above
- xiii) An information system that supports the planning and assessment needs of executive management is
- DSS
  - TPS
  - ERP
  - MIS
  - None of the above
- xiv) Which of the following is **not** an example of a solid-state storage device?
- Cache memory
  - Express Card
  - Smart card
  - Flash memory card
- xv) A local area network (LAN) in which all the computers are equals is called a(n)\_\_\_\_\_ network.
- Equal resource
  - Peer-to-peer
  - Client/server
  - Equal sharing
- xvi) The \_\_\_\_\_ is the central part of the Operating System (OS) that consists of actions the OS uses

most frequently, such as starting applications.

- A. Kernel
- B. Core module
- C. Critical data set
- D. BIOS

xvii) In a denial-of-service attack, the commandeered computers form a botnet, and the individual computers are called:

- A. Attackers
- B. Zombies
- C. Slaves

xviii) 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

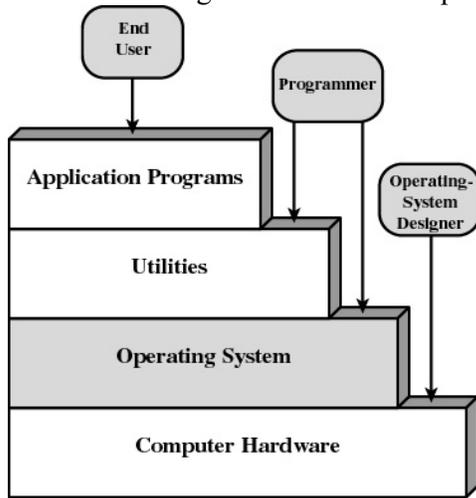
xix) The central processing unit is located within the system's case. The system case is also known as the system \_\_\_\_\_

xx) If you borrowed software from a friend and installed it on your own computer, you engaged in digital \_\_\_\_\_

- (b) Discuss **three** provisions that can be made to cater for the needs of the physically challenged in regard to their use of input and output devices. **(3 marks)**
- (c) Computers can be broadly classified in various ways, by their speed and computing power, there are minicomputers and super computers. Describe each of these types of computers. **(3 marks)**
- (d) Describe the role of any **two** major components of a CPU. **(2 marks)**
- (e) The memory of a computer system contains both RAM and ROM. State **two** differences between RAM and ROM in a typical personal computer system. **(2 marks)**

## QUESTION TWO

- (a) The diagram below illustrates the structure of the Operating System consisting of 4 layers. Use the diagram to answer the questions that follow:



- i) Discuss any **four** functions of an operating system. **(4 marks)**
  - ii) Explain the role of utilities, giving **two** examples of utility programs. **(3 marks)**
  - iii) Briefly describe the duties of a programmer **(2 marks)**
  - iv) Computer software is classified as system software and application software. To which category does the operating systems belong and application programs belong? **(1 mark)**
  - v) Describe at least **one** application program we have learnt in class, clearly stating how you would use it for your school work? **(2 marks)**
- (b) Give **three** differences between system software and application software. **(3 marks)**

## QUESTION THREE

- (a) Setting up computer networks brings about many benefits as well as social, ethical and political concerns. Using appropriate examples of each, differentiate between the following network terms:
- i) Wide Area Network (WAN) and Local Area Network (LAN) **(3 marks)**
  - ii) Intranet and Extranet **(3 marks)**
- (b) Using appropriate explanations, discuss **three** benefits that Strathmore University would derive from having a computer network. **(3 marks)**

- (c) In the context of Africa today, discuss any **two** general political and or /social concerns that would arise from networking (use of computer networks). **(4 marks)**
- (d) Explain the role of a switch as one of the networking devices. **(2 marks)**

#### QUESTION FOUR

- (a) Computer Based Information Systems (CBIS) are now a vital resource in many organizations and businesses. For banks, airlines, hospitals, learning institutions, government, etc., CBIS are used to improve on services delivery, increase efficiency, for operational excellence and to cut costs. computer based systems have been integrated and play a central role. The real benefits or limitations of this automation process may not be tangible or even quantifiable for many users.
- i) Using examples, discuss **three** limitations of integration and use of computer applications. **(3 marks)**
- ii) CBIS have been used as tools to support managerial decision-making over the years, and some of the various tools/decision aids in meeting management objectives can be grouped into the following categories:
- Transaction processing systems (TPS)
  - Management information systems (MIS)
  - Decision support systems (DSS)
  - Executive/expert systems (ESS)

Explain the role of any **three** of these Information Systems in the various departments of an organization, clearly stating the levels of management that they serve. **(6 marks)**

- iii) Your mum's colleague would like to purchase a personal computer (PC), she approaches you for advice.

Explain **three** aspects of the computer system, that you would advise the colleague to take into consideration in acquiring the PC. **(6 marks)**

## QUESTION FIVE

- (a) The following class performance data has been entered in an excel worksheet. Use the information given to answer the questions that follow.

	A	B	C	D	E
1	<b>Class Performance</b>				
2					
3	<b>Names</b>	<b>Maths</b>	<b>English</b>	<b>Geography</b>	
4					
5	James Njuguna	70	56	65	
6	David Omondi	34	12	45	
7	Jane Akinyi	67	29	52	
8	Eather Chelangat	89	90	85	
9	John Kibore	67	77	70	
10	Florence Nanjala	54	44	22	
11	Hyacinth Owino	60	14	17	
12	Steetlamp Onyango	87	65	83	
13					

- i) Write a formula and a function which if placed in cell E5 will show the total marks for James Njuguna. **(2 marks)**
  - ii) If the formula (for James Njuguna total marks), that you placed in cell E5 is copied down the column to cell E12, what will be the formula in cell E12? **(2 mark)**
  - iii) Write a function which if placed in cell B13 will show the highest score in Maths. **(1 mark)**
  - iv) What feature in MS Excel would be used to copy the formula used in cell E5 along the range of cells E6:E12. **(1 mark)**
- (b) Your classmate 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)**
- (c) Your guardian has offered to buy you a laptop for use during your course. Explain **three** ways in which you would care for this laptop so as to keep it in good working condition for long. **(3 marks)**
- (d) The use of computers and networks indeed has many benefits but has also brought about number of security and safety concerns.
- Explain the following terms/phrases in relation to information systems security. **(3 marks)**
- i) Malware
  - ii) Intrusion detection software
  - iii) Firewall