

UNIVERSITY EXAMINATIONS

1ST SEMESTER 2022/2023 ACADEMIC YEAR

FIRST YEAR EXAMINATION FOR THE DEGREES OF
BACHELOR OF SCIENCE (COMPUTER
SCIENCE)/BACHELOR OF SCIENCE (ICT)

COMP 112: FUNDAMENTALS OF COMPUTING

STREAM: R

TIME: 2 HRS

DAY: WED [2.30PM – 4.30PM]

DATE: 14/12/2022

THIS QUESTION PAPER CONSISTS OF FOUR (4) PAGES

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INSTRUCTIONS

- Answer **ALL** questions in section **A** and any **TWO** questions in section **B**
- All questions in section **B** carry equal marks

SECTION A (30 Marks)**QUESTION ONE (30 marks)**

- (a) Define the following terms: **(6 Marks)**
- Database management system
 - Virtual memory
 - Plotters
- (b) List two advantages of a network to an organization. **(2 Marks)**
- (c) Distinguish between: **(4 Marks)**
- Intranet and Extranet.
 - Data and information
- (d) Convert the following numbers to binary and decimal respectively, showing all your workings. **(4 Marks)**
- 127
 - 10001010
- (e) Using examples differentiate between impact and non impact printers. **(4 Marks)**
- (f) State two advantages of the USB flash disk. **(2 Marks)**
- (g) Differentiate between a graphical user interface and command line interface, giving examples of where to find each. **(4 Marks)**
- (h) Explain the difference between the internet and the world wide web **(4 marks)**

SECTION B: Each question is worth 20 Marks. Answer any TWO questions in this section**QUESTION TWO (20 marks)**

- (a) The information processing cycle entails a set of steps the computer follows to receive data, process it, and display the resulting information to the user. This cycle has four parts which are input, processing, output and storage. The following are part of the components involved in the processing stage:
- The control unit

(ii) Arithmetic and logic unit

(iii) Cache memory

Illustrate the typical objectives for each of the above components. **(6 Marks)**

(b) Discuss the first, second and third generations of computers highlighting the major technological improvements made in each successive generation. **(9 marks)**

(c) Operating systems have a number of functions in a computer. Describe five major functions of the operating system. **(5 marks)**

QUESTION THREE (20 marks)

(a) State two differences between RAM and ROM. **(4 Marks)**

(b) A new organization wants to automate part of their accounting department, and especially the payroll. The IT manager is unsure of whether to use bespoke or off-the-shelf software. Advise him on the option to use, clearly stating two of its advantages and two disadvantages. **(6 Marks)**

(c) Monica has just bought a laptop. It does not have any software installed, but the vendor has given her a DVD containing both system and application software.

(i) What software should be installed first and why? **(3 Marks)**

(ii) Describe three functions of system software. **(3 Marks)**

(d) Discuss two factors affecting the quality of a display device **(4 Marks)**

QUESTION FOUR (20 marks)

(a) Reputable e-commerce websites use refined measures to ensure that customer information cannot fall into the hands of criminals.

(i) Outline two risks that e-commerce poses with regard to business. **(2 Marks)**

(iii) Discuss three services commonly used on the Internet. **(6 Marks)**

(iv) Explain how the Internet can be used to add value to a business. **(2 Marks)**

(b) Explain two crimes associated with the Internet and how you can curb them. **(4 Marks)**

(c) Describe how the Internet works. **(6 Marks)**

QUESTION FIVE (20 marks)



- (a) Most incidences of hacking are conducted by employees who filch data from their employers' networks and then vend or abuse that information. Recommend to the firm how they can prevent such abuse. **(6 Marks)**
- (b) Compare and contrast a magnetic disk and magnetic tape. **(4 Marks)**
- (c) Highlight four factors to consider when choosing a secondary storage device. **(4 Marks)**
- (d) List two examples of search engines. **(2 Marks)**
- (e) Convert the octal number 6754_8 into binary. Give your answer in 8 bits. **(4 marks)**