



(Knowledge for Development)

KIBABII UNIVERSITY

(KIBU)

**UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

**SPECIAL/SUPPLEMENTARY EXAMINATIONS
YEAR TWO SEMESTER TWO EXAMINATIONS**

**FOR THE DIPLOMA
INFORMATION TECHNOLOGY**

COURSE CODE : DIT 075

**COURSE TITLE : COMPUTER ORGANIZATION
AND ARCHITECTURE**

DATE: 21/01/2022

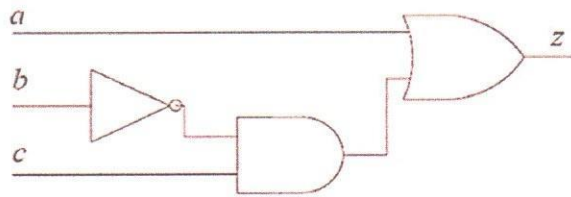
TIME: 11.00 A.M. – 1.00 P.M.

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE [COMPULSORY] [24 MARKS]

- a. Distinguish between Computer Organization and Computer Architecture. [4 marks]
- b. Briefly explain the following: [8 marks]
- i) System bus
 - ii) Address bus
 - iii) Data bus
 - iv) Control bus
- c. Construct the truth table and develop the logic expression for the output z in the following diagram. [4 marks]



- d. The Read Only Memory is where information is permanently stored in a computer system. Briefly explain the Four types of ROMs. [8 marks]

QUESTION TWO [18 MARKS]

- a. Information is important to any business organization. After processing the information must be stored for further reference and used by the organization in decision making. The storage device can be divided into two main groups. With examples state the two main groupings of storage devices. [4 marks]
- b. All existing computers (actually the CPU) can execute the following Three types of instructions. Name and explain each type of instruction. [6 marks]
- c. The register section of the CPU consists of a collection of registers and a bus. Explain the functions of any Four such registers in the CPU. [8 marks]

QUESTION THREE [18 MARKS]

- a. Explain in details memory hierarchy with examples in a computer system. [8 marks]
- b. Several formats are used to store data in the computer. Give and explain any two formats used to store Floating Point numbers. [4 marks]
- c. State any Four important functions of the Operating System. [4 marks]

- d. Differentiate between Fixed-point and floating-point processor. [2 marks]

QUESTION FOUR [18 MARKS]

- a. Explain why computers use Binary formats in their operations? [2 marks]
- b. Distinguish between cache memory and virtual memory. [6 marks]
- c. Briefly discuss the **Two** types of RAM in Computer Organization and Architecture. [4 marks]
- d. State **Three** factors that determine the CPU execution time for a program. [3 marks]
- e. What are **Three** basic Boolean operators? [3 marks]

QUESTION FIVE [18 MARKS]

- a. Explain the following terms as used data representation in computer systems. [3 marks]
- i) Bit
 - ii) Byte
 - iii) Word
- b. Given number 1056_{16} , find its equivalent in:
- i) Binary [2 marks]
 - ii) Decimal [2 marks]
 - iii) Octal [2 marks]
- c. Search engines are used to get information from the internet. Discuss any **THREE** search engines that you know. [9 marks]