

CHUKA



UNIVERSITY

**RESIT/SPECIAL EXAMINATIONS**

**FIRST YEAR EXAMINATION FOR THE AWARD OF DIPLOMA IN COMPUTER SCIENCE**

**COSC 0110: COMPUTER SCIENCE**

**STREAMS: DIP COMP SCI Y1S1**

**TIME: 2 HOURS**

**DAY/DATE: WEDNESDAY 05/05/2021**

**11.30 A.M – 1.30 P.M**

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**INSTRUCTIONS:**

**QUESTION ONE**

- a) Define the following terms
  - i. Computer architecture [2 marks]
  - ii. Instruction set [2 marks]
- b) Differentiate between Impact and Non-impact printers and give an example for each [4 marks]
- c) Differentiate between RAM and ROM in regard to the main memory [4 Marks]
- d) State TWO input and TWO output devices [4marks]
- e) Discuss two pipelining hazards [4marks]
- f) Discuss two types of RAM memory [4marks]
- g) state FOUR components of the CPU [4marks]
- h) State TWO types of errors that occur in data transmission from transmitter to receiver [2marks]

**QUESTION TWO**

- a) State and explain three types of Read Only Memory [6marks]
- b) Differentiate between SRAM and DRAM [4marks]
- c) State four examples of secondary storage devices [4marks]
- d) CPU uses several registers as an internal storage, Discuss THREE [6marks]

**QUESTION THREE**

- a) By the aid of a diagram, explain the FOUR main structural components of a computer [10marks]
- b) Discuss FOUR addressing modes in a digital computer [8marks]
- c) State TWO error detection mechanisms in computers [2marks]

**QUESTION FOUR**

- a) State four differences between ASCII and UNICODE [4marks]
- b) Perform the following conversion
  - i.  $450_{10}$  to its binary equivalent (base two) [3marks]
  - ii.  $111001010_2$  to its decimal equivalent [3marks]
- c) Discuss the instruction fetch execute cycle [8marks]
- d) State two pipelining hazards [2marks]

**QUESTION FIVE**

- a) Discuss the function of FOUR major components of the CPU [8marks]
  - b) State and explain two types of parity checking in error detection [4marks]
  - c) With the aid of a diagram, describe the processor's instruction cycle [8marks]
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