



# MACHAKOS UNIVERSITY

University Examinations for 2021/2022

SCHOOL OF ENGINEERING AND TECHNOLOGY  
DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY  
FIRST YEAR SPECIAL / SUPPLEMENTARY EXAMINATIONS FOR  
BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

BACHELOR OF SCIENCE (COMPUTER SCIENCE)

SIT110/SCO104: COMPUTER ORGANIZATION 1

DATE: 30/8/2022

TIME: 11.00-1.00 PM

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## INSTRUCTIONS:

**Attempt Question One and Any Other Two questions in this paper**

### QUESTION ONE (COMPULSORY) (30 MARKS)

- a) Discuss four number systems (8 marks)
- b) Using a well labelled diagram, explain the phases of instruction execution cycle (7 marks)
- c) List five functions of input output module (6 marks)
- d) Describe computer bus system (6 marks)
- e) Define computer organization

### QUESTION TWO (20 MARKS)

- a) Define (4 marks)
  - i. Computer structure
  - ii. Computer architecture
- b) Perform the binary arithmetic  $5.75_{10} + A_{16} * 7_8$  (8 marks)
- c) Explain four functional units of a computer (8 marks)

### QUESTION THREE (20 MARKS)

- a) Explain three input/output techniques (6 marks)
- b) Discuss two memory characteristics (6 marks)
- c) Describe four special purpose registers (8 marks)

**QUESTION FOUR (20 MARKS)**

- a) Describe RISC (6 marks)
- b) Describe methods of minimizing interrupts in computer buses (6 marks)
- c) Explain windows operating system architecture (8 marks)

**QUESTION FIVE (20 MARKS)**

- a) Explain Flynn classification of computers (8 marks)
- b) Discuss (6 marks)
  - i. Cache
  - ii. Virtual
- c) Discuss (6 marks)
  - i. Parallel processing
  - ii. Pipelined processing