



# TECHNICAL UNIVERSITY OF MOMBASA

---

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL & AUTOMOTIVE ENGINEERING

**UNIVERSITY EXAMINATION FOR:**

**BSME Y2S1**

**ICS 2174: INTRODUCTION TO COMPUTER SCIENCE**

**END OF SEMESTER EXAMINATION**

**SERIES: APRIL 2016**

**TIME: 2 HOURS**

**DATE: Pick Date May 2016**

## Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other **TWO** questions.

**Do not write on the question paper.**

---

## **Question ONE (30 marks)**

a. Define the following terms:

i. A computer

**(3 marks)**

ii. A “userless computer” (Give an example to illustrate your answer)

**(2 marks)**

b. A computer can be viewed as a system. Giving examples to illustrate your points, discuss the components that make up a computer system.

**(6 marks)**

c. Discuss two categories of memory found on a computer. For each category give an example

**(4 marks)**

d. Using a well labeled diagram, describe the fetch-decode-execute cycle.

**(8 marks)**

e. There are three basic types of computers: Digital, Analog and Hybrid. Giving examples differentiate between the three.

**(7 marks)**

## **Question TWO (20 marks)**

**a.** Discuss the history of computing through the generations.

**(10 marks)**

**b.** Discuss the specifications to be considered when buying a computer

from the market **(10 marks)**

**Question THREE (20 marks)**

- a. Differentiate between:
- The Internet and Intranet (2 marks)
  - World Wide Web and Internet (2 marks)
  - Intranet and extranet. Give examples of each (6 marks)
- b. Explain any five requirements needed to connect to the Internet (5 marks)
- c. List and briefly explain any six services that are accessible over the Internet (5 marks)

**Question FOUR (20 marks)**

- a. Calculate the following (10 marks)
- $11101 \times 1101$
  - $110101 / 101$
  - $1010101 - 101101$
  - $1010111 + 1101101$
  - $111101 \times 1011$
- b. Convert the results above to (10 marks)
- Decimal
  - Hexadecimal
  - Octal

**Question FIVE (20 marks)**

- a. What factors should you consider when choosing a CPU? Discuss 5 (10 marks)
- b. Buying a computer from the market requires a careful consideration. Explain any three specifications that one should considered when sourcing for a computer. (6 marks)
- c. Highlight three sources of computer viruses. (4 marks)