# THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of Jkuat)

## *Faculty of Engineering and Technology*

## DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY (BSc. I.T 11M)
(YR I, SEM I)

## BIT 2102 : COMPUTER STRUCTURE & ORGANIZATION

END OF SEMESTER EXAMINATIONS

**SERIES:** AUGUST/SEPTEMBER 2011

**TIME:** 2 HOURS

**Instructions to Candidates:**
You should have the following for this examination
  - *Answer Booklet*
This paper consist of **FIVE** questions in **TWO** sections **A** & **B**
Answer question **ONE (COMPULSORY)** and any other **TWO** questions
Maximum marks for each part of a question is as shown
This paper consists of **THREE** printed pages
**SECTION A (***Compulsory – 30 MARKS***)**

**Question 1**

(a) (i)   Define the following terms:-
      (ii)     Bit
      (iii)    Modem
      (iv)    Interface
      (v)     Hardware
      (vi)    Information               (5 marks)

   (ii)    Describe the following computer generations:-

      (i)     3$^{rd}$ Generation computers
      (ii)    4$^{th}$ Generation
      (iii)   5$^{th}$ Generation               (6 marks)

b) (i)    Briefly describe the classifications of analogue computers     (4 marks)

   (ii)   Differentiate between a minicomputer and microcomputer    (2 marks)

c) (i)    Mention any **FOUR** factors to consider when trying to acquire an application package.

   (ii)   Mention **TWO** demerits of application packages    (8 marks)

d)   Differentiate between batch and real-time processing    (5 marks)

**SECTION B (***Attempt any TWO questions - 40 MARKS***)**

**Question 2**

a)  What is meant by the following:           (3 marks)

   (i)  Input devices
   (ii)  Output devices
   (iii)     Storage devices

b)  Describe how data is held in the following storage media

   (i)     Magnetic tape
   (ii)    Paper tape            (4 marks)

c)  Give the advantages of using a computer in processing data    (4 marks)

d)  Distinguish between:

   (i)  Software and Hardware
   (ii)  Assembly language and machine language    (4 marks)

e)  Evaluate the following in binary

(i)   17 + 15              (2 marks)
(ii)  17 - 5              (2 marks)
(iii) 15 - 19             (1 marks)

**Question 3**

(a) Outline the functions of the components of the computer central processing unit       (3 marks)

(b) Illustrate the use of INT and MOD functions in a program to take seconds and display their equivalent in Hours, Minutes and Seconds       (4 marks)

(c) What is an array as applied in programming?       (2 marks)

(d) Ten students have taken an examination in three subjects. Write a program to take the scores and display the highest and the lowest scores for each student.       (7 marks)

(e) Describe two methods of searching       (4 marks)

**Question 4**

a)  Explain the following terms:
   (i)       Folder
   (ii)      Task bar
   (iii)     Files
   (iv)      Menu bar
   (v)       Window       (10 marks)

b)  Define the following terms:

   (i)       Graphical user interface.
   (ii)      Compiler.       (4 marks)

c)  Explain the term Operating System.       (2 marks)

d)  State any **FOUR** functions of Operating       (4 marks)

**Question 5**

a) Distinguish between bit and byte       (2marks)

b) Define volatile and non-volatile memory       (2 marks)

c) What are any **FOUR** basic operations performed by the computer?       (4 marks)

d) Draw a block diagram to illustrate the basic organization of computer system and explain the function of various units       (3 marks)

e) Distinguish between impact and non-impact printers.       (2 marks)

f) Define soft copy and hard copy terminals.       (2 marks)

g) What is input device? How does it differ from output device?       (2 marks)

h) Distinguish between PROM and EPROM. (2 marks

i) Describe cache memory. (1 mark)