THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering & Technology

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

UNIVERSTITY EXAMINATION FOR BACHELOR OF ENGINEERING IN BUILDING & CIVIL
ENGINEERING & BACHELOR OF SCIENCE IN CIVIL ENGINEERING

EIT 4101: FUNDAMENTALS OF COMPUTING

END OF SEMESTER EXAMIANTION
SERIES: APRIL 2012
TIME: 2 HOURS

Instructions to Candidates:
You should have the following for this examination
- *Answer Booklet*

This paper consists of **FIVE** questions in **TWO** sections **A & B**
Answer question **ONE (COMPULSORY)** plus any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

SECTION A (COMPULSORY)

Question One (30 Marks)

a) Change the 8-bit two's complement number 11011001 to decimal   (2 marks)
b) Outline the history of computers, stating the major technological inventions of each generation
                                                                                          (10 marks)
c) Explain any **THREE** applications of the internet   (6 marks)
d) When you want to buy a computer, explain **TWO** main factors you will consider   (4 marks)
e) ICT has increased the choice of career opportunities globally. Identify and briefly explain FOUR

   ICT career opportunities in your country   (8 marks)

SECTION B (Attempt any TWO sections)

Question Two (20 marks)

a) What are the **THREE** subsystems that make up a computer? Outline (3 marks)
b) Define the term register. Distinguish between the Program Counter (PC) and Instruction Register (IR) (3 marks)
c) What does the term peripheral device mean to you? Explain. As you explain give THREE peripheral devices you know. (4 marks)
d) Discuss the levels of memory speed and the type of memory that uses each (6 marks)
e) What is the purpose of cache memory? Explain (2 marks)
f) What is the difference between SRAM and DRAM? Discuss (2 marks)

Question Three (20 marks)

a) Explain the following terms:
    (i)   Hardware
    (ii)   Software
    (iii)   Formatting
    (iv)   ALU (8 marks)

b) State **TWO** examples of each of the following hardware
    (i) Input devices
    (ii) Output devices
    (iii) Memory (6 marks)

c) Explain the difference between the following
    (i)   A workbook and a worksheet in Ms Excel
    (ii)   Bit and Byte (6 marks)

Question Four (20 marks)

a) Define each of the following
    (i)   Icon
    (ii)   Toolbar
    (iii)   Short cut
    (iv)   Hot key
    (v)   Pop menu

b) (i)   Define the term software

   (ii)   Give the **TWO** classes of software that you know

   (iii)   What is operating system? Define. As you define give the TWO design objectives of any operating system (6 marks)

c) (i) Define the term system clipboard

   (ii) Distinguish between the two system clipboard operations cut and copy

   (iii) Give the short cut keys of invoking the three clipboard operations cut, copy and paste

   (6 marks)

d) Define the term folder and briefly explain how files are generally organized in a Windows operating system (3 marks)

Question Five (20 marks)

a) (i) What distinguishes the process of addressing an input/output devices from addressing main memory? Discuss
    (ii) Briefly describe the **TWO** methods used to handle the addressing of I/O devices
                                                                                    (8 marks)

b) There are three basic steps in a machine cycle namely fetch, decode and execute. In your own words, try to explain what each step entails   (6 marks)

c) The three methods of synchronization of transfer of data from I/O devices to the CPU and memory are: programmed I/O, interrupt driven I/O and direct memory access (DMA). Briefly explain how each achieves its synchronization in its transfer of data from I/O devices to the CPU and memory.   (6 marks)