THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)
(A Centre of Excellence)
Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR DEGREE IN BACHELOR OF SCIENCE IN
ELECTRICAL ENGINEERING (BSC. EEE)

SMA 2174: INTRODUCTION TO COMPUTER SCIENCE

SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: OCTOBER 2012
TIME: 2 HOURS

SECTION A (COMPULSORY)

Question One (20 marks)

a) Explain the main features of the following software:
    i) Word Processor
    ii) Spreadsheets
    iii) Database Management System
    iv) Presentation Graphics   **(16 marks)**

b) Explain the following terms:
    i) Icon
    ii) Central Processing Unit
    iii) Word Processor   **(8 marks)**

c) Convert the following numbers to the new bases indicated:

i) 19.5_{10} (Base 2)
ii) $BABE.2C_{16}$ (Base 10)   **(6 marks)**

SECTION B (Answer Any Two Questions)

Question Two (20 marks)

a) Computers have evolved through generations:
   i) Define the term "computer generation"   **(2 marks)**
   ii) For the four computer generations of electronic computers identify the major electronic component and one other major characteristic.   **(8 marks)**

b) Distinguish between the following terms:
   i) "Desktop Computer" and "Tower Computer"
   ii) "Digital Computer" and "Analogue Computer"   **(8 marks)**

c) State any **TWO** areas of application of main frame computers in the business world. **(2 marks)**

Question Three (20 marks)

a) Explain any **TWO** major characteristics of the following types of computers:
   i) Supercomputers
   ii) Minicomputers   **(4 marks)**

b) Explain the main features/characteristics of the following software:
   i)   Word Processors
   ii) Spreadsheets
   iii) Database Management System
   iv) Presentation Graphics   **(16 marks)**

Question Four (20 marks)

a) Define the term "operating system"   **(2 marks)**

b) With an aid of a diagram, explain the major categories of computer hardware. State any **TWO** examples in each case.   **(10 marks)**

c) Explain the following terms: **(4 marks)**
   i) Arithmetic Control Unit
   ii) Control Unit

d) Explain the difference between "Male connector" and "Female Connector"   **(4 marks)**

Question Five (20 marks)

a) Explain the term "Application Software".   **(2 marks)**

b) Explain any **THREE** functions of operating systems.   **(3 marks)**

c) Explain the following terms, stating an example in each case.
   i) Textual User Interface
   ii) Utility Programs   **(6 marks)**

d) Evaluate the following:
   i) $1101_2 + 1111_2 + 111_2$
   ii) $11001_2 / 101_2$

iii) 110_2 x 101_2 **(9 marks)**