TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR BACHELOR OF SCIENCE IN
ELECTRICAL & ELECTRICAL ENGINEERING
& MECHANICAL ENGINEERING (BSEE & BSME)

SMA 2175: COMPUTER PROGRAMMING II

END OF SEMESTER EXAMINATION
SERIES: APRIL 2013
TIME: 2 HOURS

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

This paper consists of **FIVE** questions. Attempt question **ONE** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **TWO** printed pages

Question One (Compulsory)

a) Define the following terms:
- **(i)** Program
- **(ii)** Programming
- **(iii)** Programmer
- **(iv)** Software
- **(v)** Algorithm   **(10 marks)**

b) Differentiate the following:
- **(i)** Debugging and testing
- **(ii)** Source code an object code
- **(iii)** Syntax error and logical error
- **(iv)** Compiler and interpreter   **(12 marks)**

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c) Develop a program Algorithm (using either a flowchart or pseudocode) that accepts the radius and height of a cylinder from a user and calculates the cylinders volume. (Hint: P + E = 3.14)

(8 marks)

Question Two

a) Give the full meaning of the coming programming language acronyms:
  (i) COBOL
  (ii) FORTRAN
  (iii) LISP
  (iv) BASIC
  (v) PROLIG
  (vi) VB **(12 marks)**

b) Give the following algorithm statements, write a computer program (using C) to represent eh same:

  IF value of hours worked <= 30 THEN Normally = (hoursworked *rate)
  Overtimepay = 0
  IF value of hours worked > 30 THEN Normal pay = (30* rate)
  Overtime pay = (hoursworked – 30) *1.J*rate **(5 marks)**

Question Three

a) Discuss the programming languages on the basis of level classification, i.e. high level and low – level languages giving merits and demerits. **(10 marks)**

b) Write an ALGORITHM (using flowchart) to determine whether amber entered is ODD or EVEN.

(10 marks)

Question Four

a) Explain any **SIX** factors considered when choosing a programming language. **(12 marks)**

b) With the help of a block-diagram, explain Program Development Cycle (PDC)**(8 marks)**

Question Five

a) Discuss the importance of the following program structures:
  (i) Sequence construct
  (ii) Selection (Branching) construct
  (iii) Repetition (Looping) construct

  Give examples for each. **(10 marks)**

Number	Sequence	Cube
2	4	8
3	9	27
	1	1
	1	1
20	400	8000

(10 marks)