TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY (DICT 14S)

ECS 2104: STRUCTURED PROGRAMMING

END OF SEMESTER EXAMINATION
SERIES: APRIL 2015
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 (Compulsory)** and any other **TWO** questions
Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

Question One (Compulsory)

a) Define the following programming terms:
   (i) Modular programming
   (ii) Algorithm
   (iii) Pre-processor directories   **(6 marks)**

b) Explain the following C programming commands for formatting the inputs:
   (i) % c
   (ii) % i
   (iii) % f
   (iv) % s   **(8 marks)**

c) State the meaning of the following symbols in C:
   (i) &&
   (ii) ||
   (iii) ++
   (iv) = =   **(4 marks)**

Question Two

a) Explain the term looping as used in C programming   **(2 marks)**

b) The class teacher of form 3W in a secondary school requested a programmer to design for her a simple program that would let her to do the following:
   - Enter the names of students and marks obtained in 8 subjects – Mathematics, English, Kiswahili, Biology, Chemistry, Business Studies, Computer Studies and History.
   - After entering each subject mark, the program should calculate the total and average marks for each student
   - Depending on the average mark obtained the program should assign grade as follows:
     - Between 80 and 100 – A
     - Between 70 and 79 – B
     - Between 60 and 69 – C
     - Between 50 and 59 – D
     - Below 50   -E

   - The program should then display each student's name total marks and the average grade
                                                                                    (14 marks)
c) Describe any TWO type of programming errors   **(4 marks)**

Question Three

a) Explain the advantages of structured programming using a C language   **(10 marks)**

b) Using a function and a case selection statements, write a program to calculate the area of a circle, rectangle and cylinder   **(10 marks)**

Question Four

a) Define the term Array as used in programming.   **(2 marks)**

b) Explain the operations on data structure   **(10 marks)**

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c) Create an array called STUDENT to store 10 scores. The array should compare the Ten elements and then display the largest **(8 marks)**

Question Five

a) Write a C program containing a function called rectangle that accept width and height of rectangle and returns the value of the area **(10 marks)**

b) Explain any FOUR string manipulation functions available in C language **(8 marks)**

c) State format of while Loop in C language **(2 marks)**