Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

MCA-103

M.C.A. I Semester

Examination, November 2018

Programming and Problem Solving in C

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt five questions.
ii) All questions carry equal marks.

1. a) What are the characteristics of a good program? Explain each characteristic by taking suitable example. 7
   b) Differentiate between: 7
      i) Top down and bottom up design
      ii) Testing and debugging
      iii) Flow chart and algorithm.

2. a) Explain do while and while control statements by taking an example. Also differentiate between the two. 7
   b) Explain 'for' loop. Write a program to generate all combinations of 1, 2, 3 using this loop. 7

3. a) What are the different types of 'if' statement available in 'C'? What are the advantages of 'switch' statement over if statement? 7
   b) Explain Break, continue and goto statements in 'C' by suitable examples. 7

4. a) Write about formatted input/output functions in 'C'. 7
   b) Twenty numbers are entered from keyboard into an array. Write a program to find how many are positive, negative, even and add numbers. 7

5. a) What is Recursion? Explain various types of recursion by taking examples. 7
   b) Differentiate between call by value and call by reference. 7

6. a) Write a program to pick the largest number from 6 row by 6 column matrix. Use functions for reading and finding maximum from array. 7
   b) Differentiate between structure and union. 7

7. a) What are the pre-prounor directives? What is the difference between the following two # include directives.
      i) # include "conio.h" 7
      ii) # include < conio.h>
   b) Write Macro definitions with arguments for calculation of area and perimeter of a triangle a square and a circle. Store these macro definitions in a file called "areaperi.h". Include this file in your program and call the macro definitions for calculating area and perimeter for different squares, triangles and circles. 7

8. Write short notes on any three: 14
   i) Type conversion and type casting
   ii) Enumerated data types
   iii) Dynamic memory management function in 'C'
   iv) Pointer arithmetic
   v) Self referential structures

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