Total No. of Questions :5] *[Total No. of Printed Pages :2*

Roll No .....

MCA-103

MCA. I Semester

Examination, December 2016

Programming and Problem Solving in C

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) Differentiate between algorithm and flowchart.
   b) Differentiate between Top down and Bottom up approach.
   c) What is the Characteristics of a good program? Explain.
   d) What are the various stages of software development life cycle?

OR

What are the various steps involved in problem solving?

Unit - II

2. a) Write a program to find the largest of three numbers using if else condition?
   b) Explain the concept of constants and variables.
   c) Explain the switch statement with syntax and example.
   d) What is an Operator? Explain the arithmetic, relational, logical and assignment operators in C language.

OR

Explain with the help of an example the following constructs: for, while and do while loop.

Unit - III

3. a) Explain with the help of an example the concept of local and global variable?
   b) What do you understand by scope, lifetime and visibility of variables?
   c) Explain the types of functions in programming languages.
   d) What do you mean by call by value and call by reference? Write a program which illustrates the concept of call by value and call by reference.

OR

Explain the concept of Recursion. What are the types of Recursion? Write a program for printing the Fibonacci series using recursion.

Unit - IV

4. a) Write the difference between structure and union.
   b) Give an example to illustrate the concept of structures in C.
   c) Write a program to find the greatest element in an array.
   d) Explain the following dynamic memory management functions in detail: malloc, calloc and free.

OR

Write short note on the following: Enumerated data types, modular programming approach.

Unit - V

5. a) How does the append mode differs from a write mode in file?
   b) Explain with example the concept of fprintf() and fscanf()?
   c) Describe the operations which can be performed on files.
   d) What do you mean by pre-processor directives? List and explain its different categories.

OR

Write a program to get characters from the user and convert the characters into uppercase and store it in a file, and then copy the contents into another file?

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