(2063)

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MCA 1st Semester Examination

Programming Methodology Using C

MCA-101

Time : 3 Hours   **Max. Marks : 60**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/ continuation sheet will be issued.

Note : Select one question from each section, A, B, C and D. Section E is compulsory.

SECTION - A

1. Give Comparison between Flowchart, Pseudo Code and Algorithm. Describe the process of writing a program to check if the three sides entered by the user form a triangle. **(12)**

2. What are the considerations in choosing a language for the implementation of an algorithm? Explain the general structure of C program. **(12)**

SECTION - B

3. In the context of the print() and scanf() statements, explain the terms "Format string" and "format specifier " with example. **(12)**

4. What do you mean by scope of a variable and lifetime of a variable? Explain different storage classes in C with example. **(12)**

SECTION - C

5. What is the need of array? Explain the syntax of declaration and initialization of two dimension array. Show the storage of a two dimensional array in memory with the help of diagram. **(12)**

6. What is a pointer variable? What are the advantages and disadvantages of pointers? Explain how we can access the elements of two dimensional array using pointer. **(12)**

SECTION - D

7. What is union? How it is different from a structure? What is the scope of the members of a union? How we pass array of structure to a function? Explain with the help of example. **(12)**

8. Explain various library functions for file handling in C. **(12)**

SECTION - E

9. (a) What are the various decision making statements in C. Give syntax for each one. **(2½)**

    (b) What is the difference between a character constant and string constant? **(2½)**

    (c) What is nested looping? Explain with example. **(2½)**

    (d) What is the difference between break; and continue; statements in C? Explain with 3 example. **(2½)**

    (e) What is dynamic memory allocation? Give the syntax of library functions colloc(); malloc(); and free(); used in dynamic memory allocation in C. **(2)**