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MCA 1st Semester Examination
Programming Methodologies Using C (O.S.)

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 :** (i) Attempt one question from each Section A, B, C and D.
(ii) Section E is Compulsory.

SECTION - A

1. (a) What do you mean by modular programming. Differentiate between top down and bottom up approaches of modular programming?
(b) What is the purpose of storage classes? Explain different types of storage classes with the help of example. **(10)**
2. (a) What are the types of c constants? Explain rules for constructing each type of primary constants.
(b) What do you mean by the term algorithms' and flow charts? Illustrate their use with suitable example. **(10)**

SECTION - B

3. (a) What are the commonly used input and output functions in C? How are they accessed?
(b) What is the purpose of do-while statement? How does it differ from while statement? Explain with the help of example. **(10)**

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4. (a) Suppose that an external variable is defined outside of function A and accessed within the function does it matter whether the external variable is defined before or after the function? Explain.
- (b) What is variable? How variables are defined? Explain. Also give difference between variable and constant. **(10)**

SECTION - C

5. (a) Explain declaration and initialization of array with the help of program using C. How does an array definition differ from that of an ordinary variable?
- (b) How is a pointer variable declared? What is the purpose of the data type included in the declaration? **(10)**
6. (a) How we can define multidimensional array? Compare it with one dimensional array. Also define what do you mean by subscripts in array?
- (b) What is the relationship between function and pointers? How can we access value from the pointers? **(10)**

SECTION - D

7. (a) What is member in a structure? How is a structure member accessed? What is the relationship between a member and a structure?
- (b) Describe various ways to process data types. Explain various library functions files handling and updating files. **(10)**
8. (a) How can structure variable be declared? Explain. Differentiate between structure and union.
- (b) What do you mean by structure in C? Explain various elements used in structure using C. **(10)**

SECTION - E

9. (a) What is the purpose of header file? Is the use of a header file absolutely necessary?
- (b) Define character set.
- (c) What is an argument? How are arguments written?
- (d) What is the purpose of the getchar() ?
- (e) Define the structure of C program with example.
- (f) Name some common syntactic errors.
- (g) What rules apply to nested loops?
- (h) How many times will a for loop be executed?
- (i) Define array of structure.
- (j) Differentiate between array and pointer. **(10×2=20)**