300112

December, 2019
B.Tech. - 1st Semester
Programming for Problem Solving (ESC 103)

Time : 3 Hours]   [Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*

2. *Answer any four questions from Part-B in detail.*

3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART - A

1. (a) What are Data types? Name different data types available in C. (1.5)

   (b) Define Pointer. (1.5)

   (c) What do you mean by sorting? Name any *two* sorting techniques. (1.5)

   (d) Define String with syntax. (1.5)

   (e) Differentiate between Algorithm and Flowcharts. (1.5)

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7. Write short note on following:

   (i) Linker and Loader.

   (ii) Syntax and Semantic.

   (iii) Compiler and Interpreter. (15)

(f) What is function prototype? (1.5)

(g) Write the output of following program:

```
main()
{   int x=5,*p;
    p=&x;
    x=x+1;
    printf("%d",*p);
    getch();
}
```
(1.5)

(h) Write the function of gets() and puts() commands in strings. (1.5)

(i) Define Recursion. (1.5)

(j) Write the syntax for fopen and fclose commands in C file system. (1.5)

PART - B

2. (a) Draw and explain memory hierarchy in a computer system. (5)

(b) Explain all types of loops available in C with their syntax. Write a program to generate table of a number "n" being entered by user. (10)

3. (a) Draw the flowchart for finding out the greatest between three numbers. (5)

(b) What is a Function? What is the difference between Call by Value and Call by Reference method of calling a function? Explain with proper example. (10)

4. (a) WAP to calculate factorial of a number using recursion. (5)

(b) WAP to calculate length of a string without using string inbuilt function. (10)

5. (a) WAP to search an element in an array using linear search. (5)

(b) Define array. WAP to find the sum of two matrices A & B in third matrix C. (10)

6. (a) WAP to copy the contents of one file into another. (5)

(b) What is an Operating System? Write down various functions of an Operating System. Explain Memory management in detail. (10)