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008102

April 2022

B.Tech. (EL/ECE/IT/ME/CSE/CIVIL/FAE/

ECO/EEE/EVS) - I 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) Define Linked List.   (1.5)

   (b) What is the purpose of break statement?   (1.5)

   (c) What is '\0' ?   (1.5)

   (d) Which is better: switch-case or nested if-else?   (1.5)

   (e) Mention the advantages of algorithm.   (1.5)

   (f) Describe working of linear search in brief.   (1.5)

   (g) Can we have two return statements in a function?

                                                                  (1.5)

(h) What are syntax errors? (1.5)

(i) What are logical and relational operators? (1.5)

(j) Differentiate between RAM and ROM. (1.5)

PART-B

2. (a) Explain the types of iterative loops in detail. (10)

(b) Write a program to calculate the area and circumference of a circle using call by reference. (5)

3. (a) What is Operating System? Discuss its various functions. (5)

(b) Write a program to print the upper and lower triangular of the matrix along with the sum of their elements. (10)

4. What is recursion? How is it different from iteration? Write a program to print the Fibonacci series up to n terms using recursion. (15)

5. (a) Write a program to copy the contents of one file to another. (5)

(b) Explain each step for sorting the given array using selection sort.

5, 10, 15, 20, 18, 12, 8, 1, 30. (10)

6.   (a) Differentiate between array and structures. Explain array of structures with the help of a program.   (10)

    (b) Write a program to count the number of vowels in a string without using inbuilt functions.   (5)

7.   Define Flowchart. Draw a flowchart to compute factorial for a given number N, where N is a non-negative integer. Write an algorithm for the same problem.   (15)

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