[Total No. of Questions:09]

01 JUN 2019

Uni. Roll No. ....

[Total No. of Pages:01]

Program/ Course: B.Tech. (Sem. 1/2)
Name of Subject: Programming for Problem Solving.
Subject Code: ESC-104.
Paper ID: 15935

Time Allowed:03 Hours

NOTE:

Max. Marks:60

1) **Parts A** and **B** are **compulsory**
2) **Part-C** has two Questions Q8 and Q9. Both are compulsory, but with internal choice
3) Any missing data may be assumed appropriately

Part – A

Q1.

[Marks: 02 each]

a) Define operating system. Write down the functions of operating system.
b) Define array. Differentiate between 1-D and 2-D array.
c) Differentiate between logical and syntax error.
d) What do you mean by file handling. Briefly explain the file handling functions.
e) Write down the algorithm to check whether the given number is odd or even.
f) Write down the code to access the address of a variable using pointer.

Part – B

[Marks: 04 each]

Q2. Draw a block diagram to illustrate the components of a computer system.
Q3. Differentiate between call by value and call by reference.
Q4. Briefly explain the data types available in C language.
Q5. Draw a flowchart to find the roots of a quadratic equation.
Q6. Write down a program to find out the factorial of a number using recursion.
Q7. Compare and contrast 'while' and 'do-while' statements in C language.

Part – C

[Marks: 12 each]

Q8. What is the role of operator in an arithmetic expression? Classify the different types of operators available in C. Explore the use of increment and decrement operators with suitable example.

or

Differentiate between searching and sorting. Explain the different sorting algorithms by taking suitable examples.

Q9. Define structure. Illustrate the array of structures by taking an example. Also create a structure "Student" with RollNo., Name, Branch and Marks its members.

or

What is the need of recursion in C. Write down a program in C for the quick sort using recursion.

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