14PCD13/23

First/Second Semester B.E. Degree Examination, Dec.2018/Jan.2019
Programming in C and Data Structures

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions, selecting*
ONE full question from each module.

Module – 1

1   a. Explain the structure of typical C program.   **(06 Marks)**
    b. What are the Data types available with C? Explain briefly with valid examples.   **(10 Marks)**
    c. Write a program in C to find the area of a circle.   **(04 Marks)**

2   a. Write a program in C to find the greatest of 3 numbers using conditional operator.
                                                                            (08 Marks)
    b. Write a guidelines to use scanf( ) function in C language.   **(08 Marks)**
    c   What is an operator? Explain Relational operators in C.   **(04 Marks)**

Module – 2

3   a. Explain the following with their syntax :
        i)   if – else
        ii) cascaded if – else.   **(08 Marks)**
    b. Explain the switch statement with a simple C program   **(04 Marks)**
    c. Write a program in C to check the given alphabet is a VOWEL or not. **(08 Marks)**

4   a. Differentiate between while and do – while statement.   **(04 Marks)**
    b. Explain the uses of jump statements in loop with example.   **(06 Marks)**
    c. Write an Algorithm, flowchart and C program to find reverse of an integer number NUM
        and check whether it is PALINDROME or not.   **(10 Marks)**

Module – 3

5   a. What is an Array? Wire the syntax of declaring a one – Dimensional and Two –
        Dimensional array.   **(06 Marks)**
    b. Write a C program to input N integer into a single dimensional array and sort them is
        Ascending order using Bubble sort method.   **(10 Marks)**
    c. How are strings are declared and initialized? Explain with example. **(04 Marks)**

6   a. What are string manipulation library functions? explain any two string manipulation with C
        program.   **(10 Marks)**
    b. Explain the difference between "call by value" and "call by reference" with suitable
        example.   **(04 Marks)**
    c. Design and develop a function isprime (x) that accepts an integer argument and returns 1 if
        the argument is prime and 0 otherwise.   **(06 Marks)**

Module – 4

7   a. What is structure? Explain the syntax of structure declaration with example.   **(05 Marks)**
    b. Explain Nested structure with example.   **(05 Marks)**
    c. Write a C program to maintain a record of "n" student details using an array of structure
        with four fields (RollNumber, Name, Marks and Grade). Each field is of an appropriate data
        type. Print the marks of the student given name as input.   **(10 Marks)**

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8   a.   Explain Basic Input and output operations on files management.   (06 Marks)
    b.   Write a simple C program to pass a structure as a parameter to a function.   (10 Marks)
    c.   Explain with syntax typedef statement.   (04 Marks)

Module – 5

9   a.   Explain the four Library routines called memory management function in C.   (06 Marks)
    b.   Explain commonly used preprocessor directives and their functions.   (10 Marks)
    c.   Explain the code Demonstrating the use of pointers to pointer.   (04 Marks)

10 a.   What are stack and Queues? Explain them with a neat diagram.   (06 Marks)
    b.   Write a C program using pointers to compute the sum, mean and standard deviation of all
         elements stored in an array of n natural/real numbers.   (10 Marks)
    c.   Explain prefix and postfix expression using example.   (04 Marks)

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