USN | | | | | | | | **18CPS13**

First Semester B.E. Degree Examination, Dec.2018/Jan.2019
C Programming for Problem Solving

Time: 3 hrs.   Max. Marks: 100

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

Module-1

1 a. Explain the basic structure of a C program with example.   **(10 Marks)**
   b. Define a variable. Explain the rules for constructing variables in C language.   **(04 Marks)**
   c. Write a C program to compute simple interest. Draw the flowchart for the same.   **(06 Marks)**

OR

2 a. Define data type. Explain primitive data types supported by C language with example.
                                                                                            (10 Marks)

   b. List all the operators used in C language and evaluate following expression.

   i) $x = a - b/3 + c * 2 - 1$ when a = 9, b = 12, c = 3

   ii) l W = 10 ll 5 < 4 & & 8.   **(04 Marks)**

   c. Describe the various type computers.   **(06 Marks)**

Module-2

3 a. Explain the formatted I/O functions of C language with syntax and example.   **(04 Marks)**
   b. Write a C program to implement commercial calculator using switch statement.   **(06 Marks)**
   c. Write the syntax of different branching statements and explain their working.   **(10 Marks)**

OR

4 a. Differentiate between while loop and do-while loop. Explain with syntax and example.
                                                                                            (08 Marks)
   b. Write a program to find the sum of N natural numbers using for loop.   **(04 Marks)**
   c. Write a C program to plot Pascal's triangle.   **(08 Marks)**

Module-3

5 a. Define array. Write the syntax for and with declaring and initializing 1D and 2D array with
        suitable example.   **(10 Marks)**
   b. Write a C program to find the transpose of a give matrix.   **(10 Marks)**

OR

6 a. Define string. List out all string manipulation function. Explain any two with examples.
                                                                                            (10 **Marks)**

   b. Write a C program for [consider integer data]
      i) Bubble sort ii) Linear search.   **(10 Marks)**

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low Air"   **Module-4**

7   a. What is a function? Explain the different type of functions based on parameter.   (10 Marks)

   b.   Write a program to find the factorial of a given number using functions.   (14 Marks)

   c.   Write a program to find GCD and LCM of two numbers using concept of functions.

   (06 Marks)

OR

8   a. Explain recursion and write a program to find nth term of Fibonacci series.   (10 Marks)

   b. Give the scope and lifetime of following :

   i) External variable   ii) Static variable   iii) Automatic variable

   iv) Static variable   iv) Register variable.   **(10 Marks)**

Module-5

9   a. What is a structure? Explain the syntax of structure declaration in C with example.   **(04 Marks)**

   b.   Write note on : i) Arrays within structures ii) arrays of structures.   **(04 Marks1**

   c.   Implement structures to read, write and compute average marks and the students scoring above and below average marks for class of N students.   **(12 Marks)**

OR

10   a. What is a pointer? Show how pointer variable is declared and initialized.   **(05 Marks)**

   b.   Explain any two preprocessor directives in C.   **(05 Marks)**

   c.   Write a C program to find sum and mean of all elements is an array using pointer.   **(10 Marks)**