

# CBCS SCHEME

USN

4 V P 2 0 C 5 0 8 3

18CPS13/23

First/Second Semester B.E. Degree Examination, Jan./Feb. 2021

## 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. Describe the various types of computers. (10 Marks)
- b. What is a printer? Explain the different types of printers. (08 Marks)
- c. Define software. Name the different types of software. (02 Marks)

OR

- 2 a. Define operators. Illustrate all the operators used in C language. (10 Marks)
- b. Write a C program to find the eligibility for voting. Draw the flow chart for the same. (10 Marks)

### Module-2

- 3 a. Differentiate between entry control loop and exit control loop. Explain with syntax and example. (10 Marks)
- b. Develop a C program to find the reverse of a positive integer and check for palindrome or not. Display appropriate message. (08 Marks)
- c. Explain with syntax, flowchart simple IF statement. (02 Marks)

OR

- 4 a. Why conditional branching statements are needed in C program? Illustrate 5 types of branching statements in C program. (10 Marks)
- b. Write a C program to plot Pascal's triangle. (08 Marks)
- c. Explain loop control statement in C program. (02 Marks)

### Module-3

- 5 a. Define string. List all string manipulation functions. Explain any two with examples. (10 Marks)
- b. Write a C program to count vowels and consonants in a string. (08 Marks)
- c. Explain I/O functions for strings. (02 Marks)

OR

- 6 a. Define array. Write the syntax for declaring and initializing 1D and 2D array with suitable example. (10 Marks)
- b. Write a C program to find sum of diagonal elements of matrix. (05 Marks)
- c. Write a C program to sort the numbers in ascending order using selection sort technique. (05 Marks)

### Module-4

- 7 a. What is a function? Explain the different types of functions based on parameter. (10 Marks)
- b. Explain recursions. Write a program to find factorial of a given number using recursive function. (10 Marks)

OR

- 8 a. Write recursive functions for converting binary number to decimal number. (10 Marks)  
b. Write a program to sort n numbers using bubble sort technique and using iterative function. (10 Marks)

**Module-5**

- 9 a. Differentiate between structure and array. Explain the syntax of structure declaration in C with example. (08 Marks)  
b. Implement structure to read and write Book\_title, Book\_author and Book\_id for N books. (06 Marks)  
c. Illustrate on : (06 Marks)  
i) Arrays within structures  
ii) Arrays of structure.

OR

- 10 a. What is a preprocessor? Explain types of preprocessor directives. (10 Marks)  
b. Develop a program using pointers to compute the sum and average of all elements in an array. (10 Marks)

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