

# CBCS SCHEME

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21PSP13

First Semester B.E./B.Tech. Degree Examination, Feb./Mar. 2022

## Problem Solving Through Programming

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Explain Components of Computer with block diagram. (10 Marks)
- b. Write a C program to find the area of triangle for the given three sides and draw flow chart. (04 Marks)
- c. Explain various types of Computers. (06 Marks)

OR

- 2 a. Write basic structure of C program and give brief explanation for each section with examples. (10 Marks)
- b. Define Operator. Explain any 6 operators with example. (07 Marks)
- c. Check the following identifiers are valid or invalid :  
i) sum100    ii) sum+3    iii) int    iv) abcd    v) X Y    vi) 2product. (03 Marks)

### Module-2

- 3 a. Write the syntax of different branching statements and explain with example how they work. (10 Marks)
- b. Write a C program to perform all arithmetic operations for the given two integers using switch statement. (06 Marks)
- c. With the help of example and syntax, explain formatted input / output functions of C language. (04 Marks)

OR

- 4 a. Distinguish between while and do while statements. Explain with syntax and example. (10 Marks)
- b. Write a C program to check whether given number is prime or not. (06 Marks)
- c. Explain the use of break and continue inside for loop with example. (04 Marks)

### Module-3

- 5 a. What is Array? How to declare and initialize 1D and 2D array? Explain with example. (10 Marks)
- b. Write a C program to sort the array elements using bubble sort. (05 Marks)
- c. Write a C program to implement linear search technique. (05 Marks)

OR

- 6 a. What is String? Explain any 4 string library functions with syntax and example. (10 Marks)
- b. Write a program to multiply 2 matrices by assuming their multiplication compatibility. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

**Module-4**

- 7 a. What is Function? Explain different categories of user defined functions. (10 Marks)  
b. Write a C program for evaluating the binomial coefficient using a function Factorial (n). (06 Marks)  
c. Explain Local and Global variables with example. (04 Marks)

**OR**

- 8 a. Differentiate i) User defined and built in function ii) Recursion and Iteration. (10 Marks)  
b. Explain Call by value and Call by reference with example. (10 Marks)

**Module-5**

- 9 a. What is Structure? Explain Structure declaration and Initialization with example. (10 Marks)  
b. What is Union? How to declare Union? List out the differences and similarities between Structure and Union. (10 Marks)

**OR**

- 10 a. What is Pointer? How to declare and initialize pointers? Explain with example. (06 Marks)  
b. Write a C program to find sum of two squared number using Macro square (n). (06 Marks)  
c. Write a C program to find sum, mean, standard deviation of array elements using pointers. (08 Marks)

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