# CBCS SCHEME

USN | | | | | | | |                                    BPOPS103/203

### First/Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024
## Principles of Programming Using C

Time: 3 hrs.                                              Max. Marks: 100

**Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.**
**2. M : Marks , L: Bloom's level , C: Course outcomes.**

| | | | M | L | C |
|---|---|---|---|---|---|
| | | **Module – 1** | | | |
| Q.1 | a. | Define a Computer. Explain the characteristics of a digital computer. | 10 | L1 | CO1 |
| | b. | Explain the basic structure of a C program with a neat diagram. | 10 | L1 | CO1 |
| | | **OR** | | | |
| Q.2 | a. | With a neat diagram explain the steps in the execution of C program. | 10 | L1 | CO1 |
| | b. | Explain the input and output statements in C with examples for each. | 10 | L2 | CO1 |
| | | **Module – 2** | | | |
| Q.3 | a. | Explain the various operators in C. | 10 | L2 | CO1 |
| | b. | Explain the different forms of if statement with flowcharts. | 10 | L1 | CO2 |
| | | **OR** | | | |
| Q.4 | a. | Explain the switch statement with an example. | 10 | L2 L3 | CO2 |
| | b. | Explain break and continue statements with examples for each. | 04 | L2 L3 | CO2 |
| | c. | Write a C program to find the largest of 3 numbers using nested if statement. | 06 | L3 | CO2 |
| | | **Module – 3** | | | |
| Q.5 | a. | Discuss in detail the parts of a user-defined function. | 10 | L2 | CO3 |
| | b. | Discuss the storage classes in C. | 10 | L2 | CO3 |
| | | **OR** | | | |
| Q.6 | a. | Define recursion. Write a C program to find the factorial of 'n' using recursion. | 05 | L1 L3 | CO3 |
| | b. | What is an array? Explain the declaration and initialization of 1-D arrays. | 05 | L1 L2 | CO3 |
| | c. | Write a C program to perform Matrix Multiplication. | 10 | L3 | CO3 |
| | | **Module – 4** | | | |
| Q.7 | a. | Write functions to implement string operations such as compare concatenate and string length. Convince the parameter passing techniques. | 10 | L3 | CO4 |
| | b. | Develop a program using pointers to compute, sum, mean and standard deviation of all the elements stored in an array. | 10 | L3 | CO4 |
| | | **OR** | | | |
| Q.8 | a. | Define a pointer. Discuss the declaration of pointer variables. | 05 | L2 | CO4 |
| | b. | Discuss the various string handling functions in C. | 10 | L2 | CO4 |
| | c. | Write a C program to swap two numbers using call by reference technique. | 05 | L3 | CO4 |
| | | **Module – 5** | | | |
| Q.9 | a. | Define a structure. Explain the types of structure declarations with examples for each. | 10 | L1 | CO4 |
| | b. | Implement structures to read, write and compute average marks and the students scoring below and above average in a class of 'N' students. | 10 | L3 | CO4 |
| | | **OR** | | | |
| Q.10 | a. | Differentiate between structures and union. | 06 | L2 | CO5 |
| | b. | Define a structure by name DOB consisting of three members dd, mm and yy. Develop a C program that would read values to the individual member and display the date in the form dd/mm/yyyy. | 06 | L3 | CO5 |
| | c. | Explain the various file operations with syntax for each. | 08 | L2 | CO5 |

* * * * *