

B.Tech. / B.E. (Model Curriculum) Semester-I & II  
**ESC103 - Programing for Problem Solving**

P. Pages : 2

Time : Three Hours



**GUG/W/24/13172**

Max. Marks : 80

- 
- Notes :
1. All questions carry equal marks.
  2. Assume suitable data wherever necessary.
  3. All questions are compulsory.

1. a) Write a program that performs as calculator (addition, multiplication, division, subtraction). 8
- b) Write a program in C to find the area and perimeter of a circle. 8

**OR**

2. a) Draw a flowchart to solve a quadratic equation. 8
- b) Write a C program to interchange two numbers. 8
3. a) Write a program to evaluate the series  $1^2 + 2^2 + 3^2 + \dots + n^2$ . 8
- b) Define operator? Explain bitwise operator with C program. 8

**OR**

4. a) What are basic data types available in “C”? Write the significance of each data type. 8
- b) Write a function to exchange the values of two variables. 8
5. a) Write a program in “C” to find the sum of “n” numbers. 8
- b) Eligibility condition for marriage = 21 yrs. 8  
Eligibility condition for voting = 18 yrs  
Write a C program to check whether you are eligible for voting and marriage by using nested if-

**OR**

6. a) Write a program to check number is prime or not? (using if else). 8
- b) Write a C program to read no.1 to 7 and print relatively day Sunday to Saturday by using Switch case. 8

7. a) Write a C Program to print the following output using nested loops. 8
- ```
1
1 2
1 2 3
1 2 3 4
```

- b) What is an array? How a single dimension and two dimension arrays are declared and initialized? 8

**OR**

8. a) Write a C program to find the smallest element in an array. 8

- b) Write a C program to addition of two matrices. 8

9. a) Write a syntax of structure within a structure & explain with an example. 8

- b) What is dynamic memory allocation? Write and explain the different dynamic memory allocation functions in C. 8

**OR**

10. a) Define a structure type struct personal that would contain person name, date of joining and salary using this structure to read this information of 5 people and print the same on screen. 8

- b) What is pointer? Explain how the pointer variable declared and initialized with example. 8

\*\*\*\*\*