

B.Tech. (Model Curriculum) Sem-I  
**ESC103 - Programming for Problem Solving**

P. Pages : 2

Time : Three Hours



**GUG/W/22/13172**

Max. Marks : 80

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

1. a) Explain the algorithm and flowchart used in programming language. 8  
b) Explain different types of memory in detail. 8

**OR**

2. a) Explain all operations in C language with examples. 8  
b) Explain different types of data types in C and write in tabular format range, format specifier for each data type. 8
3. a) Explain all types of if – else with syntax, flowchart. 8  
b) Write a C program to print addition, multiplication, division, subtraction of 10 numbers using loop draw flowchart for the same. 8

**OR**

4. a) Explain switch case with its rules, syntax and flowchart. 8  
b) Write a C program to generate multiplication table for number entered by user. Draw flowchart for the same. 8
5. a) What is Recursion? Explain with example. 8  
b) What is function ? What is function prototype, function header and function arguments? Explain in detail. 8

**OR**

6. a) Write a program to print Fibonacci series upto 30 numbers. 8  
b) Write a program to print smallest number among 3 variables and also show the output. Draw flowchart for the same. 8
7. a) Explain array, how data is stored in array. Explain different types of array. 8  
b) Explain different types of storage classes in C. 8

**OR**

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|----|----|--|---|
| 8. | a) | Write a program to store 50 elements in an array. The user has to enter roll number and marks for 2 subjects. Complete your answer with displaying output. | 8 |
|    | b) | Explain character arrays in detail with example.   | 8 |
| 9. | a) | Explain structure in C language . Give its syntax & example.   | 8 |
|    | b) | What is the difference between the local variable and global variable in C? Explain with programming example.  | 8 |

**OR**

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|-----|--|-------------------------------------|----|
| 10. | Write short notes on <b>any four</b> : |                                     | 16 |
|     | a)                                     | Multidimensional array              |    |
|     | b)                                     | Escape sequence                     |    |
|     | c)                                     | Call by value and call by reference |    |
|     | d)                                     | Jump statements in C.               |    |
|     | e)                                     | Pointers in C.                      |    |

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