

B. Tech. 2nd Semester (G-Scheme)  
(Common for All Branches Except CSE, ECE,  
CSE-AI & MLE, Data Science, CSE-ITCSE, IT, CS &  
IT, CS & T and EEE)  
Examination, May-2023  
PROGRAMMING FOR PROBLEM SOLVING

Paper Code : ESC-CSE-102-G

*Time allowed : 3 hours]*

*[Maximum marks : 75*

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*Note: Attempt any five questions in all, selecting at least one question from each unit. Question no. 1 is compulsory. All questions carry equal marks.*

1. (a) Explain the arithmetic operations on number system.
- (b) Differentiate between syntax and logical error.
- (c) Explain Algorithm with suitable example.
- (d) Define Pseudo code with example.
- (e) Explain various conditional statements.
- (f) Define functions and why functions are used in the program. 6×2.5=15

(2)

3012

**Unit-I**

2. (a) Convert  $(765)_{10}$  into  $( )_2, ( )_8, ( )_{16}$  5
- (b) Convert  $(1010101)_2$  into  $( )_8$  5
- (c) Convert  $(CA5)_{16}$  into  $( )_2$  5
3. Define Computer and discuss its functional units in detail with neat and clean diagram. 15

**Unit-II**

4. (a) What is a flowchart? Draw a flowchart to check the number is positive or negative. 8
- (b) Write an algorithm to check the number is even or odd. 7
5. (a) Header files 4
- (b) Keywords and variables 4
- (c) Arithmetic expressions and its precedence 7

**Unit-III**

6. (a) What are conditional statements? Write a program to calculate the roots of a quadratic equation. 8
- (b) Write a program to find the number is prime or not. 7

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(3)

3012

7. (a) Differentiate between if and if-else using example. 7
- (b) Write a program to check the string is palindrome or not. 8

**Unit-IV**

8. What is function? Differentiate between call by value and call by reference by using suitable example. 15
9. (a) What is Recursion? Write a program for Fibonacci series using recursion? 7
- (b) Write a program to find the factorial of a number. 8

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