GAYATRI VIDYA PARISHAD COLLEGE OF ENGINEERING FOR WOMEN
(AUTONOMOUS)
(Affiliated to Andhra University, Visakhapatnam)
I B.Tech. - I Semester Regular Examinations, December / January – 2025
Problem Solving using C
(Common to CSE, CSE-AIML, ECE and IT)
1. All questions carry equal marks
2. Must answer all parts of the question at one place

Time: 3Hrs.   **Max Marks: 70**

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UNIT-I

1. **a**. Discuss the basic structure of a C program and explain the role of each component
   b. Illustrate the purpose of the `main()` function in a C program with an example
   OR
2. **a**. Identify the types of constants in C and provide examples for each
   b. Compare primitive data types and derived data types in C, providing examples

UNIT-II

3. **a**. Implement a C program using `if-else` statements to check whether a number is positive or negative.
   b.Use a `switch` statement in C to display the name of a day based on the number input
   OR
4. **a**. Explain the structure of a `for` loop in C with an example.
   b. Develop a C program that uses a `while` loop to compute the sum of the first 10 natural numbers

UNIT-III

5. **a**. Declare and define a function in C to compute the factorial of a number
   b.Contrast call by value and call by reference, using examples to demonstrate each
   OR
6. **a**.Implement a C program to demonstrate dynamic memory allocation using `malloc()` and `free()`
   b. Describe pointer operations and demonstrate the use of pointers to access and modify variable values

UNIT-IV

7. **a**. Define a structure in C and use it to display the information of a student (name, roll number, marks).
   b. Implement a union in C and explain how it differs from a structure with an example
   OR
8. **a**. Define and demonstrate the use of bit-fields in C
   b. Write a C program to access individual elements in an array of structures

UNIT-V

9. **a**. List the modes of file operations in C and explain their use with examples
   b. Develop a C program that reads from a text file and displays its contents
   OR
10. **a**. Implement a C program that reads the data from one file and writes it to another file
    b. Use command-line arguments in a C program to accept two numbers and display their sum