161377

DCCA112

Reg. No. | | | | | | | | |

I Semester B.C.A. Degree Examination, January/February - 2025

COMPUTER APPLICATION

Problem Solving Techniques

(SEP Scheme (F))

Time : 3 Hours **Maximum Marks : 80**

Instructions to Candidates:

Answer All the Part's.

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PART - A

I. Answer any **TEN** questions. Each question carries **Two** mark. **(10×2=20)**

1. List the features of an algorithm.
2. Define time complexity and space complexity of an algorithm.
3. Write the difference between Prefix and Postfix increment operator.
4. What are local and global variables? Give examples.
5. Write the general syntax of conditional operator.
6. What do you mean by formatted input and output?
7. Write the difference between while and do-while loop.
8. Write the syntax of declaring and initializing an array.
9. What is the difference between getchar ( ) and gets ( ) function?
10. Define Pointer.
11. Write the properties of command line arguments.
12. Write the difference between call by value and call by reference.

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PART - B

II. Answer any **SIX** questions. Each question carries **Five** marks. **(6×5=30)**

13. Explain Big Oh (0), Omega ( ) and Theta ( ) notation in detail.
14. Explain the general structure of C program with an example.
15. Write a C program to find the roots of a quadratic equation.
16. What is Token? What are the different types of token available in C?
17. Write a program to find the GCD of two numbers using the concepts of functions.
18. What do you mean by actual arguments and formal arguments? Illustrate with an example.
19. Write a C program to read N numbers into an array and perform linear search.
20. What are the basic data type available in C? Write the significance of each data type.

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PART - C

III. Answer any **THREE** questions. Each question carries **Ten** marks. **(3×10=30)**

21. a) Explain if, if-else and nested if-else statement in C program with syntax and example. **(6)**

    b) Write a note on Strcpy ( ) and Strcmp ( ) functions in C. **(4)**

22. a) Write a C program to perform matrix multiplication of 2 × 2 matrix. **(6)**

    b) Explain the concept of structure and union in C. **(4)**

23. a) With an example explain sorting by diminishing increment method. **(6)**

    b) Write a note on pattern searching in C programming. **(4)**

24. a) Write an algorithm and flowchart to find greatest of 2 numbers. **(5)**

    b) What is file? Explain different types of files. **(5)**

25. Write a C program to find addition and subtraction of 2 matrices using functions.