



ST. FRANCIS DE SALES COLLEGE

A FRANSALIAN INSTITUTE OF HIGHER EDUCATION **AUTONOMOUS**

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END SEMESTER EXAMINATION – NOV/DEC 2025

COMPUTER SCIENCE – I SEMESTER BCA (Repeaters)

24BCA14 - PROBLEM SOLVING TECHNIQUES

Time: 3 Hours

Max. Marks: 80

Instruction: Answer should be written completely in English.

SECTION - A

Answer any **FIVE** questions. Each question carries **TWO** marks.

(5X2=10)

1. Define an algorithm.
2. Draw a flowchart to add two numbers.
3. Define variable in C.
4. What is ternary operator in C?
5. Define array with an example.
6. Write the condition for multiply tow matrices with example.
7. What is sorting? Mention different sorting methods.
8. Write the statements to open and close the file in C.

SECTION - B

Answer any **SIX** questions. Each question carries **FIVE** marks.

(6X5=30)

9. Write an algorithm and draw a flowchart to compute the factorial of a number.
10. Explain the characteristics of an algorithm and role of algorithm in computing.
11. List the differences between while and do-while loops.
12. Distinguish between structure and union in C with examples.
13. Explain formatted input and output functions in C with examples.
14. Write a C program to check the given number is positive, negative or zero.
15. Create a program to find the largest number from the given array.
16. Generate a C program to perform Linear search on a sorted array.

SECTION - C

Answer any **FIVE** questions. Each question carries **EIGHT** marks.

(5X8=40)

17. Explain in detail about the loop statement in C.
18. Define selection statement in C. Explain different types of selection statements in C.
19. Explain the different types of operators in C.
20. Write an algorithm and C program to find the largest among three numbers.
21. Construct a C program to multiply two matrices of user-defined size.
22. Describe the process of binary search and illustrate it with a dry run on a sorted array of integers.

