

SE - 111

I Semester B.C.A. (Full Stack Development) (AI & ML) (Data Science)

Examination, January 2025

(SEP 2024 - 25)

COMPUTER SCIENCE

24BCA12 : Problem Solving Techniques

Time : 3 Hours

Max. Marks : 80

Instruction : Answer **all** questions.

SECTION - A

I. Answer **any eight** of the following :

- 1) Define asymptotic notation. List any two.
- 2) What are local and global variables ?
- 3) What is an efficiency of an algorithm ?
- 4) What is datatype ? Mention datatypes in C.
- 5) Explain type casting.
- 6) Differentiate between break and continue.
- 7) Define pre-processor directives.
- 8) Define a pointer with an example.
- 9) Difference between structure and union.
- 10) Write the differences between linear search and binary search.

(2×8=16)

SECTION - B

II. Answer **any four** of the following :

(6×4=24)

- 11) Explain conditional operator in detail with examples.
- 12) Explain string operations with examples.
- 13) Explain the working of if-else and else-if ladder.
- 14) Write a C program to find the GCD of two numbers.
- 15) Write a C program to search and replace a pattern in Text.
- 16) Explain bubble sort with an example.

P.T.O.



SECTION – C

III. Answer **any five** of the following :

(8×5=40)

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| 17) a) Explain the different control structures with examples. | 5 |
| b) Explain GOTO and Label statements. | 3 |
| 18) a) Explain call by value and call by reference with examples. | 5 |
| b) Write a program to generate Fibonacci series. | 3 |
| 19) What is an array ? Explain different types of array with examples. | 8 |
| 20) Explain binary search algorithm with an example. | 8 |
| 21) Write a program to multiply two matrices. | 8 |
| 22) Write a program on quick sort with an example. | 8 |
| 23) a) Write a C program to find a square root of a given number. | 4 |
| b) Write a program to swap two numbers using pointers. | 4 |
