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 :   (2×8=16)

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.

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)

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

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