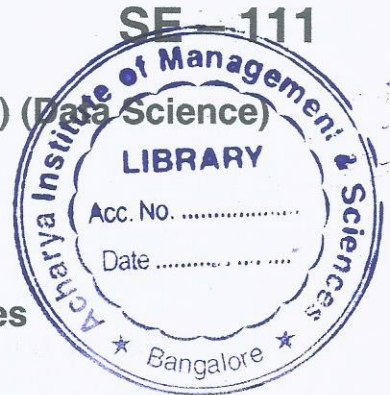**I Semester B.C.A. (Full Stack Development) (AI & ML) (Data Science) Examination, January 2025**
(SEP 2024 – 25)
COMPUTER SCIENCE
24BCA12 : Problem Solving Techniques

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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