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**