NP – 392

I Semester B.C.A. Degree Examination, February/March 2024
(NEP) (F+R)
COMPUTER SCIENCE
Problem Solving Techniques

Time : 2½ Hours

Max. Marks : 60

Instruction : *Answer* ***any four*** *questions from* ***each*** *Part.*

PART – A

Answer **any four** questions, **each** question carries **2** marks. **(4×2=8)**

1. Mention any two characteristics of an algorithm.
2. Define an identifier. Give an example for a valid identifier.
3. What is a constant ? How it is declared in C ?
4. What is modular programming ?
5. Give the general syntax of if-else statement.
6. What is an array ? How is it initialized ?

PART – B

Answer **any four** questions, **each** question carries **5** marks. **(4×5=20)**

7. Write an algorithm for summation of N-natural numbers.
8. Explain the syntax of switch-case statement with an example.
9. What is data type ? Explain different data types with an example each.
10. Write a program to find the sum of all the digits of a given integer.
11. Mention any five string library functions.
12. Write an algorithm to perform hash search on the given set of elements.

P.T.O.

PART – C

Answer **any four** questions, **each** question carries **8** marks. **(4×8=32)**

13. a) Explain loop control structures in C with a general syntax for each. **6**

    b) What is the differences between break and continue statements ? **2**

14. Write a program to multiply two matrices. **8**

15. a) Distinguish structure and union with an example. **4**

    b) Explain orders of growth. **4**

16. a) What is a pointer ? Write a program to find the size of integer, character and real pointers. **6**

    b) Write an algorithm to find the smallest exact divisor of an integer. **2**

17. a) Write an algorithm to find the maximum element in an array of size 'N'. **4**

    b) Write a C program to swap the values of two variables. **4**

18. a) Write a C-program to sort n-numbers using bubble sort. **6**

    b) Explain pattern searching. **2**