NP – 314

I Semester B.C.A. Degree Examination, March/April 2023
(NEP) (F + R) (2021 – 22 and Onwards)
COMPUTER SCIENCE
Problem Solving Techniques

Time : 2½ Hours Max. Marks : 60

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

PART – A

Answer **any 4** questions. **Each** question carries **2** marks. **(4×2=8)**

1. What is an Algorithm ?
2. What is variable ? Give an example.
3. What are escape sequences ?
4. Find the prime factor of 72.
5. What is sorting ? Mention different sorting methods.
6. What is an array ? How it is initialised ?

PART – B

Answer **any 4** questions. **Each** question carries **5** marks. **(4×5=20)**

7. Write an algorithm for summation of set of numbers.
8. Explain asymptotic notations.
9. What is datatype ? Explain different datatypes with examples.
10. Write a program to find the factorial of a number.
11. Mention any 5 string library functions.
12. Write an algorithm to perform binary search on the given set of elements.

P.T.O.

PART – C

Answer **any 4** questions. **Each** question carries **8** marks. **(4×8=32)**

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

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

14. a) Write the characteristics of algorithm. **4**

    b) Explain formatted input and output statements. **4**

15. a) Write an algorithm to generate the Fibonacci sequence. **5**

    b) What is pointers ? How to initialize pointer arrays ? **3**

16. a) Write a C program to find GCD of 2 numbers. **4**

    b) Write an algorithm to compute a prime factors of an integer. **4**

17. a) Explain the algorithm to find the maximum element in a set. **4**

    b) Sort the following array using insertion sort. **4**

43	75	21	37	12

18. a) Write an algorithm to sort the set of elements using selection sort. **4**

    b) Explain keyword searching in text. **4**
