



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