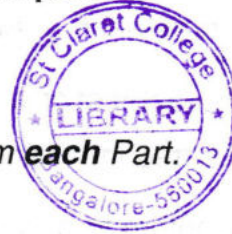## I Semester B.C.A. Degree Examination, March/April 2023
(NEP) (F + R) (2021 – 22 and Onwards)
COMPUTER SCIENCE
Problem Solving Techniques

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.

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

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