



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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