



NP – 163

<sup>15</sup>  
I Semester B.C.A. Degree Examination, May 2022  
(NEP – 2021-22 and Onwards)  
COMPUTER SCIENCE  
Paper – 1.2 : 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. Define Algorithm.
2. Define Token with an example.
3. Write any two rules for Identifiers.
4. Define Binary Search.
5. What is sorting ? List any two sorting techniques.
6. What is an array ? Give the syntax.

PART – B

Answer **any 4** questions. **Each** question carries **5** marks.

(4×5=20)

7. Write an algorithm to exchange the values of two variables.
8. Write a note on break and continue with an example.
9. Illustrate the declaration and initialization of pointers with an example.
10. Write a C program to remove the duplicate entries in a single dimensional array.
11. How do find the smallest divisor of an integer ?
12. Write an algorithm to perform hash 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 the various Asymptotic Notations with their significance. 6  
b) What is pattern searching ? 2
14. a) Explain the structure of a C program. 4  
b) Differentiate between if and if else. 4
15. Write a C program to find the roots of the Quadratic Equation. 8
16. a) Write a 'C' program to demonstrate the following string operations. 4  
i) strcpy ()      ii) strcat()      iii) Strlen()      iv) strrchr()
- b) Write a short note on hash search. 4
17. a) Write a C program to read  $2 \times 2$  matrices and perform Addition and Subtraction operations on the matrices. 6  
b) What do you mean by two way merge ? 2
18. a) Perform the Bubble sort operation on the following elements 23, 5, 13, 65, 8 to arrange them in ascending order. 6  
b) Write any two application of text line editing. 2
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