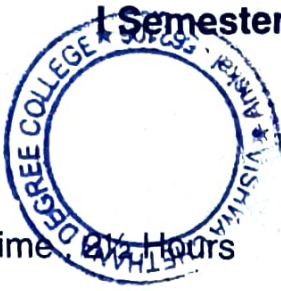




NP – 392



I Semester B.C.A. Degree Examination, February/March 2024  
(NEP) (F+R)

**COMPUTER SCIENCE**  
**Problem Solving Techniques**

Time : 02 1/2 Hours

Max. Marks : 60

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

**PART – A**

Answer any four questions, each question carries 2 marks.

**(4×2=8)**

1. Mention any two characteristics of an algorithm.
2. Define an identifier. Give an example for a valid identifier.
3. What is a constant ? How it is declared in C ?
4. What is modular programming ?
5. Give the general syntax of if-else statement.
6. What is an array ? How is it initialized ?

**PART – B**

Answer any four questions, each question carries 5 marks.

**(4×5=20)**

7. Write an algorithm for summation of N-natural numbers.
8. Explain the syntax of switch-case statement with an example.
9. What is data type ? Explain different data types with an example each.
10. Write a program to find the sum of all the digits of a given integer.
11. Mention any five string library functions.
12. Write an algorithm to perform hash search on the given set of elements.

P.T.O.



## PART – C

Answer **any four** questions, **each** question carries **8** marks.

**(4×8=32)**

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|--|---|
| 13. a) Explain loop control structures in C with a general syntax for each.                          | 6 |
| b) What is the differences between break and continue statements ?                                   | 2 |
| 14. Write a program to multiply two matrices.  | 8 |
| 15. a) Distinguish structure and union with an example.  | 4 |
| b) Explain orders of growth.   | 4 |
| 16. a) What is a pointer ? Write a program to find the size of integer, character and real pointers. | 6 |
| b) Write an algorithm to find the smallest exact divisor of an integer.                              | 2 |
| 17. a) Write an algorithm to find the maximum element in an array of size 'N'.                       | 4 |
| b) Write a C program to swap the values of two variables.  | 4 |
| 18. a) Write a C-program to sort n-numbers using bubble sort.  | 6 |
| b) Explain pattern searching.  | 2 |
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