DCCS101

Reg. No. | | | | | | | | |

I Semester B.Sc. Degree Examination, April - 2023

COMPUTER SCIENCE

Problem Solving Techniques

Paper : I

(NEP Scheme - 2021 Onwards)

Time : 2½ Hours **Maximum Marks : 60**

Instructions to Candidates:

Answer any **Four** questions from each part.

PART - A

Answer any **Four** questions. Each question carries 2 marks. (4×2=8)

1. Mention the characteristics of algorithm.
2. Define space complexity and time complexity of an algorithm.
3. Mention the various C tokens.
4. Mention the various control statements available in C.
5. What is a function. Mention any two advantages of using functions.
6. What is searching? Mention the various searching techniques.

PART - B

Answer any **Four** questions. Each question carries 5 marks. (4×5=20)

7. Write an algorithm to generate first 'n' terms of fibonacci sequence.
8. Explain what are format specifiers.
9. Explain the various mathematical functions in C language.
10. Write a program to perform a matrix addition?
11. Explain the various string operations with suitable examples.
12. Define a structure. Write the general syntax for defining and declaring structure with suitable example.

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PART - C

Answer any **Four** questions. Each question carries **8** marks. **(4×8=32)**

13. a. Mention the advantages of algorithm.

b. Explain the different design approaches to solve a problem. **(2+6)**

14. Explain the basic structure of a C program with a suitable programming example. **(8)**

15. a. What is a keyword. Mention some of the C keywords.

b. Explain the four basic datatypes in C. **(3+5)**

16. a. Write a program to print a prime number between (1 to 100).

b. Explain logical operators. **(5+3)**

17. a. Write a C program to find factorial of a number.

b. Write an algorithm to find sum and average of 8 elements in an array. **(3+5)**

18. a. Explain Binary search with an example.

b. What is pattern matching. Give an example. **(5+3)**
