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FIRST SEMESTER B.Sc. DEGREE EXAMINATION, APRIL 2022

(NEP—DSCC)

Computer Science

PROBLEM SOLVING TECHNIQUES AND ALGORITHMS

e : Two Hours Maximum : 60 Marks

Answer **all** *sections based on internal choice.*

Section A

I. Answer any *five* questions. Each question carries 2 marks :

1 Define Computer. Mention its characteristics.

2 Differentiate between Compiler and Interpreter.

3 What are C tokens ? Give examples.

4 List any four types of operators.

5 State the purpose and syntax of printf() and scanf().

6 Define array. State its types.

7 What is top-down design ?

(5 × 2 = 10 marks)

Section B

Answer any *four* questions. Each question carries 5 marks :

8 Draw the flowchart to find the largest of three numbers.

9 What are variables ? How do you declare them ? Discuss the rules for naming the variables.

10 Explain the purpose and syntax of switch-case statement with an example.

11 Write a C program to find the factorial of a number.

12 Explain any 5 string handling functions with syntax and example.

13 Write an algorithm to generate Fibonacci series.

(4 × 5 = 20 marks)

Section C

Answer any *three* questions. Each question carries 10 marks :

14 Explain looping control structures.

15 Write a C program to count the number of vowels, consonants and special characters in a given string.

Turn over

16 What is function ? Explain the components of a function with example.

17 What is array ? Explain declaration, initialization and memory representation of one and two dimensional array.

18 Describe the problem solving aspects.

(3 × 10 = 30 marks