

Bankura University

B.Sc(Honourse) THIRD SEMESTER EXAMINATIONS, 2021

Subject: Computer Science

Course ID: 31511

Course Title: Data Structures

Full Marks: 25

Time: 1Hr 15 Min

The figures in the margin indicate full marks

Answer all the questions.

UNIT I

1. Answer *any five* of the following questions: (5×1=5)

- a) Define multidimensional array
- b) Define sparse matrix
- c) What do you mean by stack?
- d) What do you mean by queue?
- e) What is de-queue?
- f) What do you mean by doubly linked list?
- g) What is recursion?
- h) Give an example of height-balance tree?

UNIT II

2. Answer *any two* of the following questions: (2×5=10)

- a) Write a short note on different forms of arithmetic expressions
- b) Discuss array representation of queue in brief with suitable example(s)
- c) Write the recursive formulas for (i) Generating Fibonacci Series and (ii) Factorial of an integer
- d) Discuss binary search algorithm with suitable example(s)

UNIT III

3. Answer any one of the following questions:

(1×10=10)

- a) Discuss selection sort algorithm with an example
- b) For a singly linked-list write the algorithms for following purposes:
 - (i) Insertion of a node (holding a input value) at the beginning
 - (ii) Deletion of the node from the end