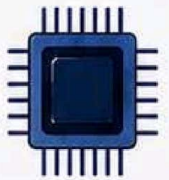
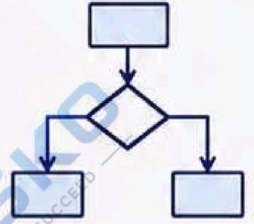


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B.Sc. (Part-II) Third Semester (NEP) Winter 2025
DSC-III(T) Major 204 - Computer Science (112204) / Computer Application
(Regular / Vocational) (109204 / 110204) / Data Analytics (134204) / Data Science
and Analysis (135204) / Information Technology (123204) - Data Structure

P. Pages : 1

Time : Two Hours



AI - 4634

Max. Marks : 30

- Notes :
1. Question No. 1 is compulsory.
 2. Draw well labelled diagrams whenever necessary.
 3. Students may use various colors to signify answers.

1. Write answers in one or two lines: solve **any six**.

**1x6
=6**

- i) What is a Binary tree?
- ii) What are primitive data structures?
- iii) What is traversing in an array?
- iv) What is PUSH operation in a stack?
- v) What is a Doubly linked list?
- vi) What is Merging?
- vii) What is Linear Search?
- viii) When overflow condition occurs in Queue?

2. Answer in short **any two** of the following?

3

- A) Explain the various operations performed on data structures.
- B) What is array? Explain the memory representation of an array.
- C) Explain the algorithm to insert the element into the array.
- D) Explain the process of traversing an array with an example.

3

3

3

3. Explain in detail **any one** of the following.

6

- A) What is Stack? Explain the algorithm to remove element from the stack.
- B) What is Queue? Explain Priority queue with example.

6

4. Answers in short **any two** of the following.

3

- A) What is linked list? Explain its advantages.
- B) Describe the differences between binary tree and binary search tree.
- C) What is tree traversing? Explain any one with suitable example.
- D) Explain Complete binary trees with example.

3

3

3

5. Explain in detail **any one** of the following.

6

- A) What is Indexed Sequential Search? Explain with suitable example.
- B) What is Sorting? Explain Bubble Sort Algorithm with suitable example.

6
