Data Structures – Assignment

Q1. Explain the difference between:

a) Array vs Linked List

b) Stack vs Queue

c) Linear vs Non-Linear Data Structure

d) Static vs Dynamic Memory Allocation

Q2. Write the time complexity for:

a) Search in unsorted array

b) Binary Search

c) Insert at beginning of linked list

d) Stack push/pop

e) Queue enqueue/dequeue

Q3. Implement:

a) Stack using Array

b) Queue using Linked List

Q4. Real-world applications of:

Stack, Queue, Linked List, Hash Table, Graph

Q5. Short notes (any two):

Circular Queue, Doubly Linked List, Priority Queue, AVL Tree, Hashing

Q6. Reverse a singly linked list (no extra space):

Provide pseudocode & code.

Q7. BFS traversal on graph:

A—B—D

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C—E—F