

Department of Computer Science
Gujarat University
MCA theory examination
Semester I

Subject: Data Structures

Total Marks: 20

- Q1. Give difference between (ANY FOUR) : [08]
- i. Linear vs Non-Linear data structures
 - ii. Array vs Linked list
 - iii. Singly , circular and doubly Linked list
 - iv. Stack vs Queue
 - v. Push and Pop operations in stack
- Q2. Explain the process through diagram and write algorithms for the following(ANY FOUR) [08]
- i. Insertion before a given node in singly linked list
 - ii. Insertion after a given node in doubly linked list
 - iii. Insertion at beginning in circularly linked list
 - iv. Deletion of last node in singly linked list
 - v. Deletion of given node in doubly linked list
- Q3. Define Stack. Why it is known as LIFO? Why Stack behaves as LIFO whereas Queue as FIFO? Give applications of stack. Explain PUSH and POP operations of stack [04]