# SRI KRISHNA INSTITUTE OF TECHNOLOGY

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## Department of Artificial Intelligence and Machine Learning

**Subject Name: Data Structures and Applications** **Subject Code: BCS304**

**SEM: 3rd** **DIV: A**

**Faculty: Prof. Manzoor Ahmed**

### Module-2 Question Bank

| SL# | Question | CO | Level | Marks |
|---|---|---|---|---|
| 1. | Explain the drawback of ordinary queue. Write a program to implement push, pop and display operations for circular queue using array. | CO2 | L2 | 8 |
| 2. | Define a queue. List the difference types of queues. State the limitation of ordinary queue. Explain how you overcome the limitation by specifying the required C-statements and diagrammatic representation using an example. | CO2 | L2 | 8 |
| 3. | What is the disadvantage of circular queue and explain circular queue using dynamic arrays to overcome the same with example. | CO2 | L2 | 8 |
| 4. | Explain multiple stacks and queues with an example. | CO2 | L2 | 8 |
| 5. | Write a program to implement queue using singly linked list. | CO2 | L2 | 6 |
| 6. | What is Linked List? Explain the different types of linked list with neat diagram. | CO2 | L2 | 8 |
| 7. | With the C statements, explain how do you create a node, add and delete on Singly Linked List with proper message where each node is containing the details of employee in the form of EmpID, EmpName, Empaddr and EmpSalary as data fields. | CO2 | L2 | 10 |
| 8. | Give the node structure of create a single linked list of integers and write functions to perform the following operations:<br>i) Create a list containing three nodes with data 10, 20, 30 using front insertion.<br>ii) Insert a node with data 40 at the end of list.<br>iii) Delete a node whose data is 30.<br>iv) Display the list contents. | CO2 | L2 | 8 |
| 9. | Write node representation for the linked list representation of a polynomial. Write a function to add two polynomial using linked list. | CO2 | L2 | 8 |
| 10. | Write and explain how you implement the operations of stack using Singly Linked List with the help of C-statements. | CO2 | L2 | 8 |

**Faculty Signature**