****

Mahatma Gandhi Mission’s College of Engineering and Technology

Kamothe, Navi Mumbai

Assignment -III

Subject-DS Div-A Sem-I Class –SE

Date of Issue: 19/11/2021 Date of Submission: 30/11/2021

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Q.No** | **Question** | **Module** | **Bloom’s Taxanomy level** | **Program Indicator(PI)** | **CO** |
| **Q1.select correct answer** | |  |  |  |  |
| **1)** | Which among the following is a linear data structure:  a. Queue  b. Stack  c. Linked List  d. all the above | 3 |  |  |  |
| **2)** | Which among the following is a dynamic data structure:  a. Double Linked List  b. Queue  c. Stack  d. all the above | 3 |  |  |  |
| **3)** | The link field in a node contains:  a. address of the next node  b. data of previous node  c. data of next node  d. data of current node | 3 |  |  |  |
| **4)** | In a circular linked list a) Components are all linked together in some sequential manner. b) There is no beginning and no end. c) Components are arranged hierarchically. d) Forward and backward traversal within the list is permitted. | 3 |  |  |  |
| **5)** | A linear collection of data elements where the linear node is given by means of pointer is called? a) Linked list b) Node list c) Primitive list d) None | 3 |  |  |  |
| **Q2. Choose Correct Options** | |  |  |  |  |
| **1)** | Which of the following operations is performed more efficiently by doubly linked list than by singly linked list?  a. Deleting a node whose location in given  b. Searching of an unsorted list for a given item  c. Inverting a node after the node with given location  d. Traversing a list to process each node | 3 |  |  |  |
| **2)** | A variant of linked list in which last node of the list points to the first node of the list is?  a. Singly linked list  b. Doubly linked list  c. Circular linked list  d. Multiply linked list | 3 |  |  |  |
| **3)** | In doubly linked lists, traversal can be performed?  a. Only in forward direction  b. Only in reverse direction  c. In both directions  d. None of the above | 3 |  |  |  |
| **4)** | A variant of the linked list in which none of the node contains NULL pointer is?  a .Singly linked list  b. Doubly linked list  c. Circular linked list  d. None of the above | 3 |  |  |  |
| **5)** | In circular linked list, insertion of node requires modification of?  a. One pointer  b. Two pointer  c. Three pointer  d. Requires no modification | 3 |  |  |  |
| **6)** | A collection of data items of similar type arranged in a sequence is termed as?  a. Memory space  b. Static data structure  c. Data structure  d. List | 3 |  |  |  |
| **7)** | A linked list is a linear collection of homogeneous elements called\_\_\_\_\_\_.  a. Runtime  b. Nodes  c. Pointers  d. None of the above | 3 |  |  |  |
| **8)** | Depending on what on what can a linked list be classified into various other types?  a. The number of pointers in a node  b. The purpose for which the pointers are maintained  c. Both (a) and (b)  d. None of the above | 3 |  |  |  |
| **9)** | n a singly-linked list (linear linked list), how many fields does each node consists of?  a. One  b. Three  c. Two  d. Zero | 3 |  |  |  |
| **10)** | To implement Sparse matrix dynamically, the following data structure is used  a. Trees  b. Graphs  c. Priority Queues  d. Linked List | 3 |  |  |  |
| **Q3. Answer the following questions in brief** | |  |  |  |  |
| **1)** | Explain Linked List ADT? | 3 |  |  |  |
| **2)** | Explain Doubly Linked List | 3 |  |  |  |
| **3)** | Explain operations performed on linked list | 3 |  |  |  |
| **4)** | Explain applications of Linked List. | 3 |  |  |  |
| **5)** | Compare linked list with Arrays | 3 |  |  |  |