Roll No. | | | | | | | |

Paper Code: TCS 301

Mid Semester Examination 2019

B.Tech (CSE) III Semester

Data Structure using 'C' language.

Time: 1:30 Hrs

MM: 50

Note:

(i) This question paper contains five questions.
(ii) All questions are compulsory.
(iii) Instructions on how to attempt a question are mentioned against it.
(iv) Total marks assigned to each question are ten.

Q1. (Attempt any two questions of choice from a, b and c) (2X5=10 Marks)

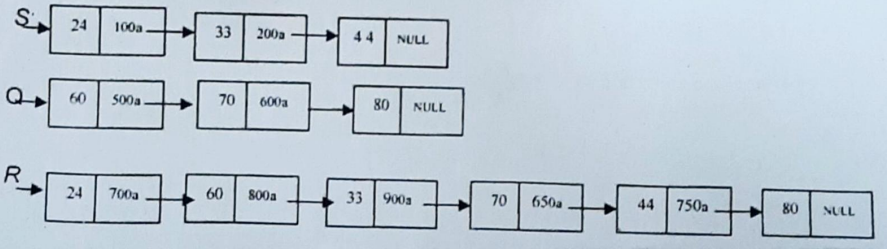
a. *We have a singly linked list, first node of the linked list is pointed by a pointer S. Write a C function to insert a node between first node and last node of the singly linked list.*

b. *Let the following circular queue can accommodate maximum six elements with the following data front = 3, rear = 4 and queue = _ _ _ L, P, _ What will happen after Inserting A, B and C and then serving two elements from that queue? _ indicates a blank space.*

c. *We have a singly linked list with a pointer S at first node. Write a C function to delete first node of the linked list.*

Q2. (Attempt any two questions of choice from a, b and c) (2X5=10 Marks)

a. *We have two linked lists pointed, First linked list is pointed by a pointer P and the second list is pointed by pointer Q. Write c function to create third linked list from two given linked lists such that, first node of the first linked list will be the first node of third linked list and first node of the second linked list will be the second node of the third linked list and so on.*



b. *Write C function to count total number of nodes in a singly circular linked list.*

c. *Write a C function to create a singly linked list by inserting node at right hand side (using double pointer).*

Q3. (Attempt any two questions of choice from a, b and c) (2X5=10 Marks)

a. What will be the output of the following program?

```
int main()
{
  int  x=50, *p=NULL, y=3, z=2;
   p = &x;
   *p = y + 3 + z;
   x=x+y;
   z = *p;
   printf("%d %d %d", x, y, z);
}
```

b. *We have a singly linked list with a pointer Q at first node .Write a C function to search a node's information given by user, in that linked list if found delete that node otherwise print appropriate message*

c. *Write a C function to create a singly linked list by inserting node at left hand side (using double pointer).*

Q4. (Attempt any two questions of choice from a, b and c) (2X5=10 Marks)

a. *We have a singly linked list with a pointer Q at first node .Write a C function to count the nodes having information multiple of three from that linked list.*

b. **Write a C function to create a dynamic array and then swap the elements of the array** *,finally display the content of the array(Do not use duplicate array).*

c. *We have a singly linked list; first node of the linked list is pointed by a pointer X. Write a C function to print information of alternate nodes of the linked list.*

Q5. (Attempt any two questions of choice from a, b and c) (2X5=10 Marks)

a. *We have a singly linked list with a pointer Q at first node .Write a C function to print the nodes having odd information.*

b. *Write C function to serve an element from a circular queue.*

c. *We have a singly linked list, first node of the linked list is pointed by a pointer S. Write a C function to print the node having largest information in that singly linked list.*