Roll No. | | | | | | | Paper Code: TMC 201

Mid Semester Examination 2022
MCA II Semester

Data Structure and file organization using C language

Time: 1:30 Hrs MM: 50

INSTRUCTIONS TO STUDENTS

Note :

(i) This question paper contains five questions with alternative choice.
(ii) All questions are compulsory.
(iii) Each question carries **two** parts **a or b.** Attempt either parts **a** or **b** of each question.
(iv) Total marks assigned to each question are ten.

Q1. A. Assume that we have a singly linked list with a pointer P at first node. Write a C function to input a number and search it in the linked list if number is found, update the linked list by deleting that node otherwise print number not found. (10)

OR

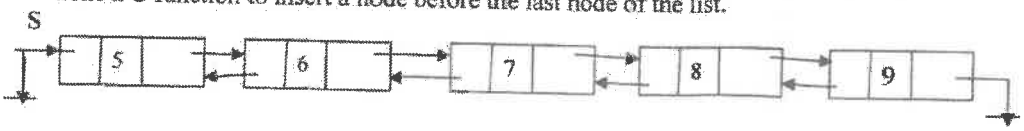
B. Assume that we have a single linked list; first node of the linked list is pointed by a pointer PTR. Write a C function to delete duplicate nodes in the linked list. (10)

Q2.

A. Assume that we have a queue implemented with single linked list. Pointer front is pointing to first node of the queue. Write a C function to print queue in reverse order i.e. rear to front (Do not use array). (10)

OR

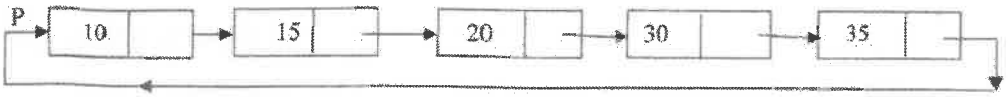
B. Assume that we have a double linked list, first node of the list is pointed by pointer S, write a C function to insert a node before the last node of the list.



(10)

Q3.

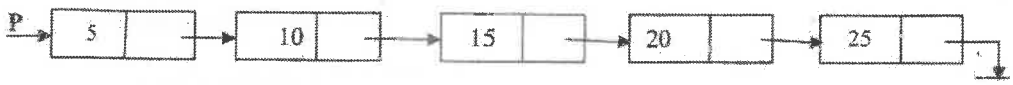
A. Consider the following circular linked list, first node of the linked list is pointed by a pointer P. Write a C function to count nodes having odd information in the linked list.



(10)

OR

A. *Assume that we have a singly linked list. First node is pointed by pointer P. Write a C function to delete last node of the linked list.* (10)



Q4.

A. Assume that we have a binary search tree, root node of the tree is pointed by a pointer RT, write a C function to find and print the node having smallest information. (10)

OR

B. Assume that we have a binary search tree, root node of the tree is pointed by a pointer RT, write a C function to count total leaf nodes in the binary search tree. (10)

Q5.

A. Assume that we have a single linked list and a key. First of the first linked list is pointed by a pointer P. Write a C function to print the node having information greater than key value in the linked list. (10)

OR

B. What do you mean by a dynamic array? Write a 'C' function to create a dynamic array to store N elements and then remove duplicate elements in the array. (10)