Roll No. 2 2 9 4 0 3 8 **Paper Code: TCS 302**

Mid Semester Examination 2023
B.Tech (CSE) III Semester

Data Structure with '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. **(10*1,CO1,CO2)**

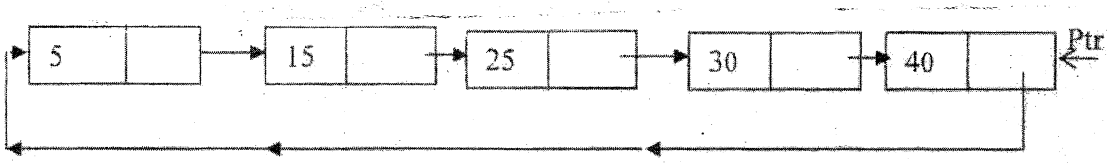
A.Assume that you have a Stack implemented with linked list, pointer Top is pointing to the top most node. Write a C function to print the stack in reverse order i.e. from bottom to top.(Do not use array).

OR

B.Explain dynamic array. Write a 'C' function to create a dynamic array to store N elements and then print 3rd non repeating element in the array.

Q2. **(10*1,CO1,CO3)**

A. Consider a Circular linked list with a pointer, Ptr. Write a C function to insert a new node after the node pointed by pointer Ptr, in the linked list.



OR

B. Evaluate the following postfix expression using stack (Show all the steps).
4, 3, -, 6, 2, +, *, 8, 2, /, 6, *,-

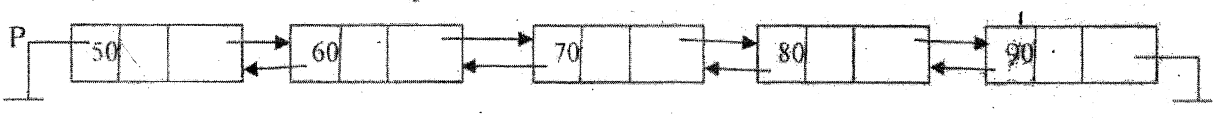
Q3.

A. Assume that you have a single linked list, first node of the linked list is pointed by a pointer Ptr. Write a C function to delete a node from the linked list as per the choice given by the user.

(10*1,CO1,CO2)

OR

B. Assume that you have a double linked list, First node of the linked list is pointed by a pointer P. Write a C function to insert a node before the last node in the linked list.

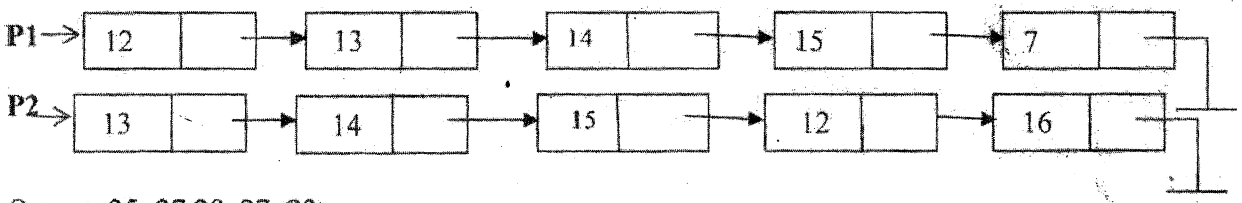


Q4. **(10*1, CO1,CO2)**

A. We have a singly linked list; first node of the linked list is pointed by a pointer PTR. Write a C function to print the node having highest information in that singly linked list.

OR

B. Assuming that you have two single linked lists, pointers P1 and P2 are pointing to the first node of the linked lists respectively. Write a C function to print the addition of the data in the given linked lists.



Output: 25, 27,29, 27, 23

Q5. **(10*1, CO2,CO3)**

A.Assume that you have a single linked list. Write a C function to count the nodes having information multiple of 3.

OR

B.Assume that we have a single linked list; first node of the linked list is pointed by a pointer P. Write a C function to print alternate nodes in the linked list.