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Paper Code: TOE 410 / TIT 402 / TMC 401 / TMI 403

MID SEMESTER Examination 2021

MCA/ M.Sc IT / B.Tech (EC/IT) IV Semester

Data Structure using 'C' language.

Time : 1:30 Hrs Maximum Marks : 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) Explain malloc () , calloc() ,realloc () and free() functions with examples. (10)

OR

b) Write a C function to insert a node at the right hand side in a double linked list. (10)

Q2. a) Consider a Circular linked list with a pointer (PTR) pointing to its head. Write a C function to print last node then first node and so on till second last node. (10)

OR

b) Assume that we have a single linked list with a pointer PTR at first node. Write a C function to count nodes having odd information. (10)

Q3.a) Write an algorithm to insert a node in a queue using single linked list. (10)

OR

b) Assume that we have a single linked list with a pointer PTR at first node .Write a C function to split the linked list in two single linked lists ,as per the choice given by the user. (10)

Q4. a)What do you mean by a dynamic array? Write a 'C' function to create a dynamic array to store N elements and then count total even number in that array. (10)

OR

b) Write a C function to sort an array using insertion sort technique. (10)

Q5.a) Assume that we have a Stack using linked list with a pointer TOP. Write a C function to to print stack from bottom to top. (10)

OR

b) Assume that we have a single linked list with a pointer START at first node. Write C function to print nodes of the linked list in alternate order. (10)