4235

BOARD DIPLOMA EXAMINATION, (C-14)

MARCH /APRIL-2019

DCME - THIRD SEMESTER EXAMINATION

DATA STRUCTURES THROUGH C

Time: 3 Hours] [Max. Marks: 80M

PART-A

3x10=30M

Instructions: 1) Answer **all** questions.
2) Each question carries **three** marks.
3) Answer should be brief and straight to the point and shall not exceed five simple sentences.

1) What are the Linear data structures? Give examples?

2) Write short note on Abstract data types?

3) Define singly linked list? Give example?

4) Write the node structure of doubly linked list using C?

5) Define PUSH and POP on stacks.

6) Define queue. List any three types of queues.

7) Mention any three applications of trees.

8) List out various operaions on binary trees.

9) Define Merge sort.

10) Write a short note on Linear Search.

PART-B

5x10=50M

Instructions: 1) Answer any **five** questions.
2) Each question carries **ten** marks.
3) The answers should be comprehensive and the criteria for valuation is the content but not the length of answer.

11) Describe various types of linked lists with suitabel diagrams.

12) Write a C program to create and display the doubly linked list.

13) a) Evaluate the postfix expression 43+2- using stack. 5

b) Convert a* b / c+d / e into postfix expression using stack. 5

14) Write a C program to perform operaions on linear queues using Arrays.

15) Write the algorithms for all the three binary tree traversals.

16) Write the steps to convert the general tree to binary tree with example.

17) Define sorting. List various sorting techniques and explain any one sorting technique with an example.

18) a) Write an algorithm for Binary search and explain with an example.5

b) Sort the elements 45,23,8,9,23,7,3 using selection sort. 5

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