Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SECOND SEMESTER M.C.A.DEGREE EXAMINATION, DEC 2018

Course Code: RLMCA104

Course Name: DATA STRUCTURES

Max. Marks: 60   Duration: 3 Hours

PART A
Answer all questions, each carries 3 marks.   Marks

1	What is Stack and where it can be used?	(3)
2	What is a dequeue?	(3)
3	Define circular linked list.	(3)
4	List the applications of Linked List.	(3)
5	What is Minimum Cost Spanning Tree?	(3)
6	Define AVL tree with example.	(3)
7	What is selection sort? Explain with an example.	(3)
8	What is complexity of an algorithm?	(3)

PART B
Answer any one question from each module. Each question carries 6 marks.

Module I

9   What is an Asymptotic notation? What are the different types of asymptotic   (6)
notations? Explain with example.

OR

10   . How arrays are represented in the memory?   (6)

Module II

11   . Write an algorithm to evaluate a postfix expression using stack. Trace the   (6)
algorithm using example data set.

OR

12   . Define Stack. Write the insertion and deletion algorithm for stack. Trace the   (6)
algorithm using example data set.

Module III

13   What is priority queue? Explain with example.   (6)

OR

14   What is Circular Queue? Write an algorithm to insertan element into a Circular Queue.   (6)

Module IV

15   What do you mean by Link list? Write an algorithm to insert and delete anode in Singly Linked List.   (6)

OR

16   Write an algorithm to add two polynomials using linked list   (6)

Module V

17   Construct a binary search tree for thedata.30, 80, 15, 40, 60, 90, 85,70 andthen perform the operations.   (6)

i) delete node 30.

 ii) delete node 85.

OR

18   Explain Depth First Search traversal of Graph using an example.   (6)

Module VI

19   What is quick sort? Why is it called partition exchange sort?Sort the following elements using quick sort: (6)

25, 10, 80, 3, 20, 1

OR

20   Write the algorithm for Linear search and Binary search?Explain using example data set.   (6)

****