

Reg No.: Mubeen

0520MCA105122001

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

First Semester MCA (2 Years) Degree Examination December 2020 (2020 Scheme)

Course Code: 20MCA105

Course Name: ADVANCED DATA STRUCTURES

Max. Marks: 60

Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks.

		Marks
1	Define binary search tree.	(3)
2	What is Disjoint Sets? Explain with an example.	(3)
3	What is Splay Tree? List the Rotations in Splay Tree.	(3)
4	Explain the concept of suffix tree with suitable example.	(3)
5	What is the difference between min heap and max heap?	(3)
6	What is mergeable heap?	(3)
7	Describe adjacency matrix representation of a graph.	(3)
8	What are strongly connected components in a graph? Explain with an example.	(3)
9	What is blockchain data structure?	(3)
10	What is smart contract in Block chain?	(3)

PART B

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

Module I

11	What is hashing? Explain the different hash functions.	(6)
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OR

12	Explain amortised analysis using accounting method.	(6)
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Module II

13	Explain Red-Black tree insertion operations with examples.	(6)
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OR

14 What is B tree? Explain B tree operations. (6)

Module III

15 Describe Binomial heap with example (6)

OR

16 Explain Fibonacci Heap operations with example. (6)

Module IV

17 Explain the Prim's algorithm with an example. (6)

OR

18 Describe Dijkstra's single source shortest paths algorithm with an example (6)

Module V

19 Explain about Blockchain architecture in detail. (6)

OR

20 What are the advantages and disadvantages of Blockchain? (6)
