Reg.No:							

SNS College of Technology, Coimbatore-35.
(Autonomous)
B.E/B.Tech- Internal Assessment -II
Academic Year 2023-2024(ODD)
Third Semester
19ITT201- Data Structures
(Common to CSE,IT and AIML)

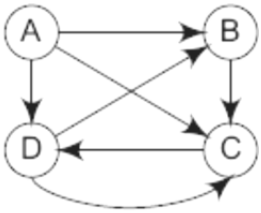
A

Time: $1^{1/2}$ Hours **Maximum Marks: 50**

Answer All Questions

PART-A (5 x 2 = 10 Marks)

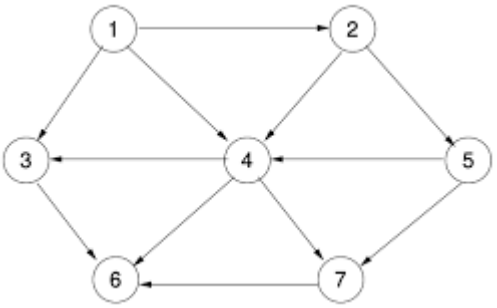
1.	Illustrate how Binary Heap Represented using array with an example.	CO2	Ana
2.	Define Huffman tree and its application.	CO2	Und
3.	Distinguish directed graph and undirected graph	CO3	Ana
4.	What is the difference between an Euler path and a circuit?	CO3	Ana
5.	Find out the in degree and out degree of each node in the given graph.	CO3	App



PART–B (13+13+14 = 40 marks)

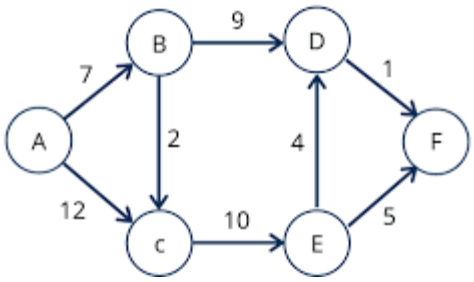
6.	(a)	Explain in detail about the B tree construction and its operations with a neat illustration.	13	CO2	Und
		(or)			
	(b)	Show the result of inserting 33,35,42,10,14,19,27,44,26,31 one at a time, into an initially empty binary heap. Also show the result of performing two delete Min operations in the final binary heap obtained.	13	CO2	App

7.	(a)	Find the topological sort for the given graph using queue with algorithm.	13	CO3	App



(or)

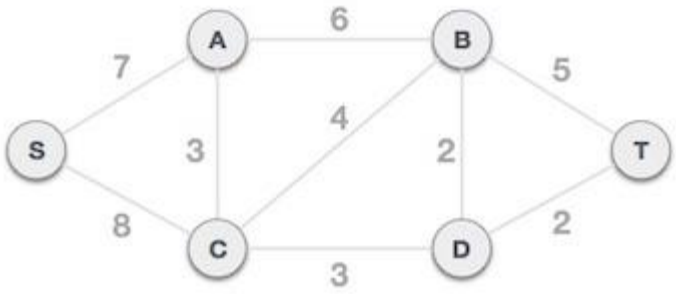
	(b)	Find the shortest path from "**S**" to all other vertices for the given graph using Dijikstra's algorithm.	13	CO2	App



8.	(a)	Explain about the B+ trees and Insert the following key values 6, 16, 26, 36, 46 on a B+ tree with order = 3.	14	CO2	App

(or)

	(b)	Apply Kruskal's algorithm and find the minimum spanning tree for the given graph.	14	CO3	App



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(Note: Und-Understand Rem-Remember App-Apply Ana-Analyze)