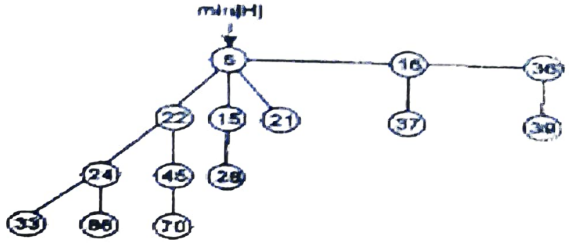
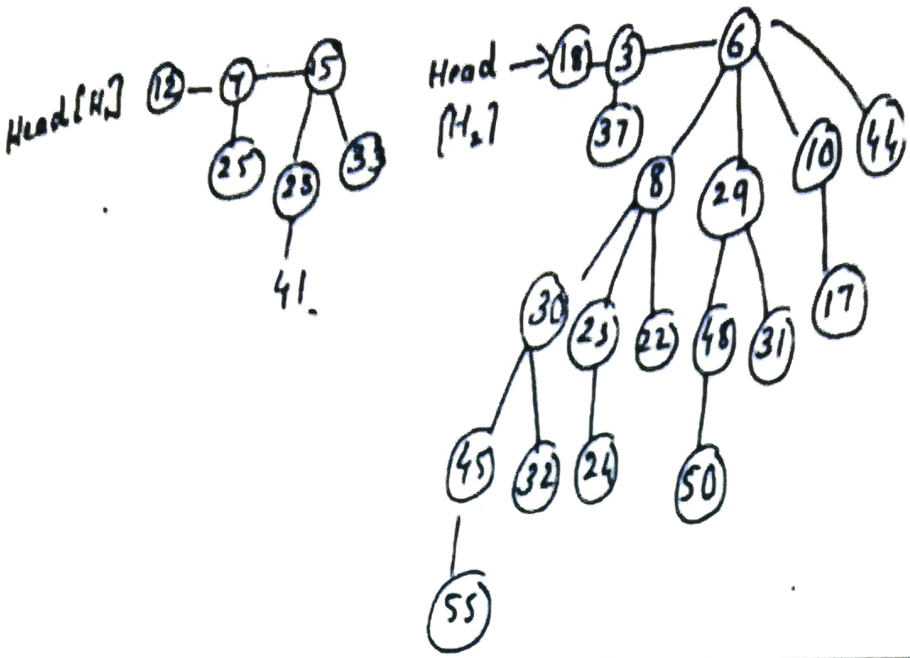
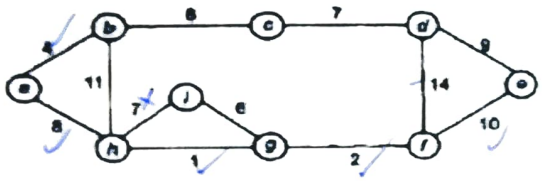
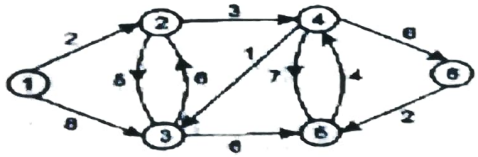
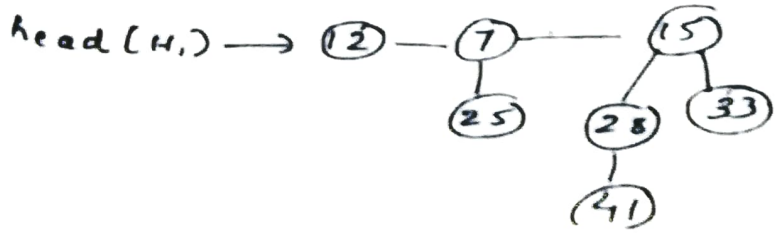
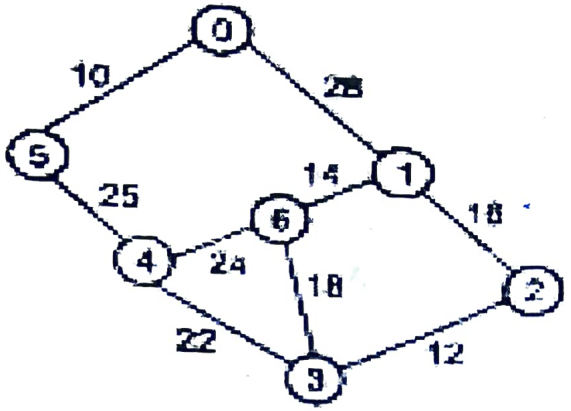
Time:2Hrs **Maximum Marks: 50**

Qn. No.	PART – A Answer all questions	Marks	BL	CO
1	List & explain the five operation in mergeable heap.	3	L1	3
2	Illustrate & compare binomial heap and fibonacci heap.	3	L1	3
3	Describe a procedure for inserting a key in binomial heap.	3	L2	3
4	Describe a procedure for deleting a key from Fibonacci heap.	3	L2	3
5	Explain about topological sorting in detail.	3	L1	4
6	List and explain various representations in graph data structure.	3	L1	4
7	Illustrate and explain Breadth first search traversal.	3	L1	4
8	Explain articulation point in biconnected component with a neat diagram.	3	L2	4
9	List the advantage of blockchain technology.	3	L2	5
10	Discuss about contract data in block chain technology.	3	L2	5
	PART – B			
	MODULE-3			
11 a.	Explain the procedure for decreasing a key in Fibonacci heap. Apply that function for decreasing a key from 45 to 34 for the graph given below.  OR	5	L3	3
b.	Explain the procedure for merging two binomial heap for the following two heaps.	5	L3	3

Name of Student:..... Roll No:.....



	MODULE-4			
12 a.	Discuss kruskals algorithm for finding MST and find the minimum cost for the following graph.	5	L3	4
		5	L3	4
	0r			
b.	Discuss Dijkstras algorithm for finding minimum cost from a single source vertex using the graph given below.			
				
	MODULE-3&4			
13 a.	Explain the procedure for extractinig minimum key from the binomial heap given below	5	L3	3
		5	L3	4

b.	Or Discuss the Prim's algorithm and find the minimum cost for the graph given below  			
	MODULE-5			
14 a	Illustrate and explain the architecture of Block chain technology Or	5	L2	5
b)	List & Explain various data structure used in Block chain technology.	5	L3	5