(3 Hours) [Total Marks : 80]

Please check whether you have got the right question paper.

N.B. (1) Question No. 1 is compulsory

(2) Attempt any three out of remaining five questions

(3) Assumptions made should be clearly stated

(4) Figures to the right indicate full marks

(5) Assume sutaible data whenever required but justify that.

Q.1	(a)	Explain recurrences and Various methods to solve it.	5
	(b)	Explain Amortized analysis with example	5
	(c)	Explain NP-Complete problems	5
	(d)	Explain Knuth-Morris-Pratt algorithm in detail.	5
Q. 2	(a)	Solve MCM for following order <35, 10, 5, 30, 20, 15>	10
	(b)	Explain Jarvis March algorithm in detail	10
Q. 3	(a)	Prove that Subset sum is NP-Complete	10
	(b)	Determine an LCS of "ABCABDACCB" and "BACACDB".	10
Q. 4	(a)	Explain with example maximum bipertite matching using Ford Fulkerson	10
	(b)	Apply Dijkstra algorithm on given graph	10
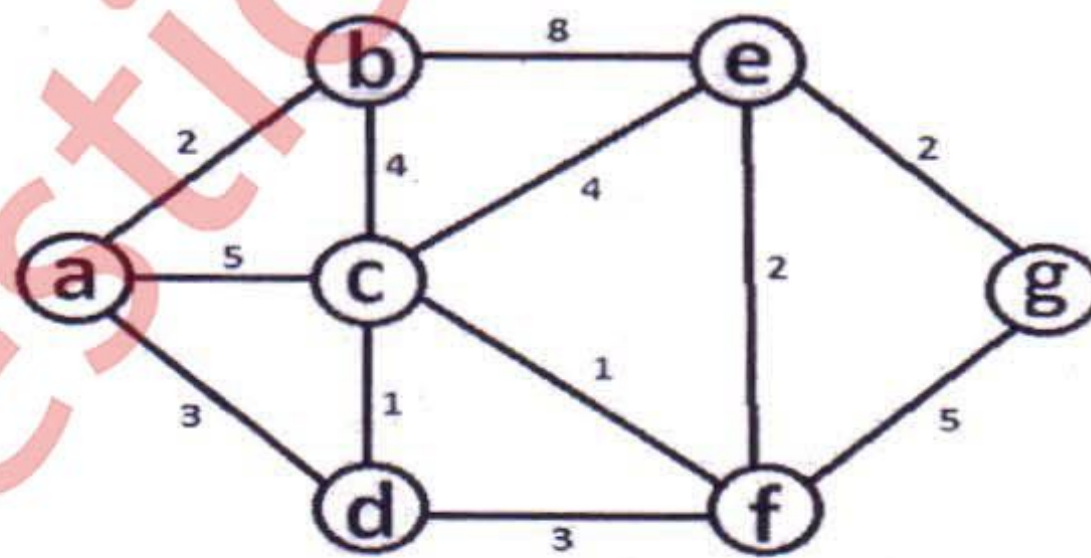
Q.5	(a)	Explain Huffman Coding algorithm with greedy strategy.	10
	(b)	Explain how Divide and Conquer is applied for finding closest pair of points	10
Q. 6		Write short note on following	20
	(a)	Line segment properties	
	(b)	Randomized algorithm	
	(c)	Elements of dynamic programming	
	(d)	TSP as a NP Complete Problem	

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