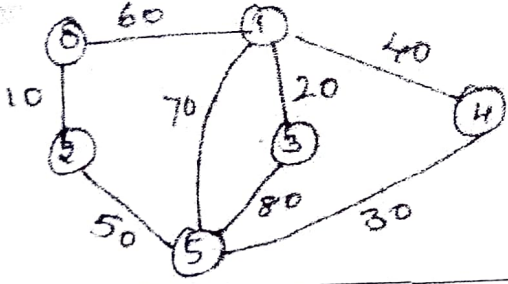
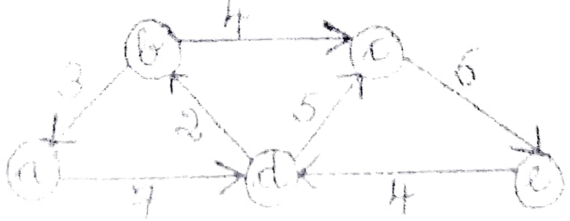
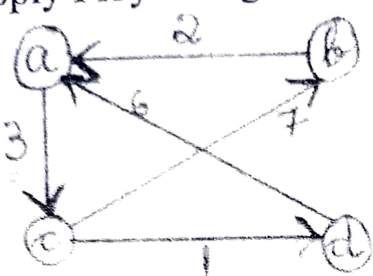


CONTINUOUS INTERNAL EVALUATION - 2

Dept: AI/CD/CS	Sem / Div: 4	Sub: Analysis & Desing of Algorithms	S Code: BCS401
Date: 28/5/2025	Time: 9:30-11:00	Max Marks: 50	Elective: N

Note: Answer any 2 full questions, choosing one full question from each part.

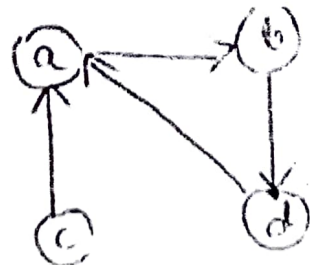
QN	Questions	Marks	RBT	CO's
PART A				
1 a	Explain string matching Horspool's algorithm. Apply the algorithm to search for the pattern BARBER in a text JIM SAW ME IN A BARBER SHOP	10	L3	CO4
b	Apply Kruskal algorithm for given graph. 	10	L3	CO4
c	Solve coin row problem for {5, 1, 2, 10, 6, 2}	5	L3	CO3
OR				
2 a	Apply single source shortest path problem assuming vertex 'a' as source. 	10	L3	CO4
b	Construct Huffman Tree for document contains letter A	10	L3	CO4

	to E with frequencies A:22, B:13, C:18, D:16, E:31. i) Encode: CAB, BAD ii) Decode: 110011, 1000110001			
	c Apply Floyd's algorithm for the given graph. 	5	L3	CO3

PART B

3	a Write a note on P, NP, NP Complete & NP hard problems.	10	L2	CO5
	b Apply backtracking method to solve sum of subset problem for the instance $d=50$, $S=\{10,20,30,40\}$. Give all possible solution with state space tree.	10	L3	CO6
	c Apply dynamic programming to solve knapsack. Given $n=4$, $M=5$, $w=\{2,1,3,2\}$ & profit $=\{8,6,16,11\}$.	5	L3	CO3

OR

4	a Explain N Queen's Problem using backtracking to solve 4-Queen problem.	10	L2	CO5
	b Apply branch and bound method to solve knapsack. Given: $n=4$, $M=10$, $w=\{4,7,5,3\}$ & Values $=\{40,42,25,12\}$	10	L3	CO6
	c Apply warshall's algorithm to find transitive closure for given graph. 	5	L3	CO3