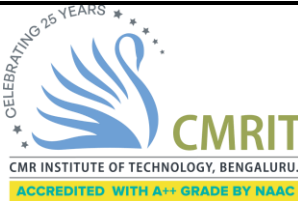


CMR Institute of Technology, Bangalore			
Department(s): Information Science & Engineering			
Semester: 4	Section(s): A/B/C	Lectures/week: 04	
Subject: Analysis & Design of Algorithm		Code: BCS401	
Course Instructor(s): Prof. Dinesh Kumaar/Prof. Kavitha			
Course duration: Feb 2026 – May 2026			
Google Classroom Link: https://classroom.google.com/c/ODQzNzM0ODg1MzA0?cjc=fmvezgz7			

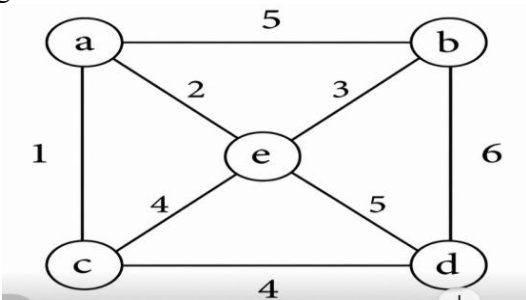
Assignment-2

Issue Date: 12-05-26

Submission Date: 22-5-2026

No	Questions-SET A	Bloom's Level	Course Outcome
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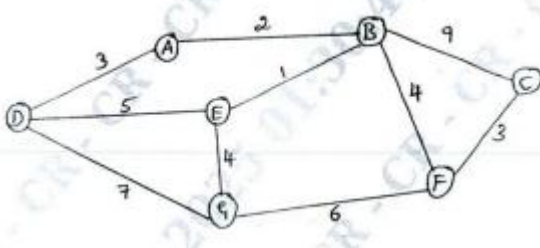
1	Design Horspool's Algorithm for string Matching Apply Horspool algorithm to find pattern BARBER BI in the test JIM_SAW_ME IN_A BARBERSHOP.	L3	CO3
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2	Write Kruskal's algorithm to find minimum spanning tree. Illustrate with the following graph Fig. 	L3	CO4
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3.	Solve the following instance of the knapsack problem by using branch and bound method. Capacity $W = 10$ a) <table><tr><td>Item</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>Weight</td><td>4</td><td>7</td><td>5</td><td>3</td></tr><tr><td>Value</td><td>\$40</td><td>\$42</td><td>\$25</td><td>\$12</td></tr></table>	Item	1	2	3	4	Weight	4	7	5	3	Value	\$40	\$42	\$25	\$12	L3	C05
Item	1	2	3	4														
Weight	4	7	5	3														
Value	\$40	\$42	\$25	\$12														

S.No	Questions-SET B	Bloom's Level	Course Outcome
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1	Design Horspool's Algorithm for string Matching Apply Horspool algorithm to find pattern BARBER BI in the test JIM_SAW_ME IN_A BARBERSHOP.	L3	CO3
2	Apply Dijkstra's algorithm to find single source shortest path for the given graph by considering S as the source vertex.	L3	CO4

																		
3.	Solve the following instance of the knapsack problem by using branch and bound method. Capacity $W = 10$ <table data-bbox="477 524 1075 647"><tr><td>Item</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>Weight</td><td>4</td><td>7</td><td>5</td><td>3</td></tr><tr><td>Value</td><td>\$40</td><td>\$42</td><td>\$25</td><td>\$12</td></tr></table>	Item	1	2	3	4	Weight	4	7	5	3	Value	\$40	\$42	\$25	\$12	L3	C05
Item	1	2	3	4														
Weight	4	7	5	3														
Value	\$40	\$42	\$25	\$12														

S.No	Questions -SET C	Bloom's Level	Course Outcome															
1	Design Horspool's Algorithm for string Matching Apply Horspool algorithm too find pattern BARBER BI in the test JIM_SAW_ME IN A BARBERSHOP.	L3	CO3															
2	Construct Symbol et a Huffman tree and resulting code word for the following: <table><tr><td>Symbol</td><td>A</td><td>B</td><td>C</td><td>D</td><td>-</td></tr><tr><td>Frequency</td><td>0.35</td><td>0.1</td><td>0.2</td><td>0.2</td><td>0.15</td></tr></table> Encode the text DAD. Decode the text 10011011011101.	Symbol	A	B	C	D	-	Frequency	0.35	0.1	0.2	0.2	0.15	L2	CO2			
Symbol	A	B	C	D	-													
Frequency	0.35	0.1	0.2	0.2	0.15													
3.	Solve the following instance of the knapsack problem by using branch and bound method. Capacity W = 10 <table><tr><td>Item</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>Weight</td><td>4</td><td>7</td><td>5</td><td>3</td></tr><tr><td>Value</td><td>\$40</td><td>\$42</td><td>\$25</td><td>\$12</td></tr></table>	Item	1	2	3	4	Weight	4	7	5	3	Value	\$40	\$42	\$25	\$12	L3	C05
Item	1	2	3	4														
Weight	4	7	5	3														
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