		Name - Adhyan Dhyani
	٠	Class - ym Sem Sec-4 Date.
À		Name - Adhyan Dhyani Class - 4m Sem, Sec-4 Date. Roll no > 20
		DAA-Tutorial-6
		P
	01	
	Aus	- Minimum spanning hee: A (MST) is a
_		Minimum spanning tree: A (MST) is a subset of the edges of a connected edge - weighted undirected graph that
		edge - weighted undirected graph that
_		connects all the vertices together,
_		without any cycles and with the minimum
_		connects all the vertices together, without any cycles and with the minimum possible total edge weight.
_		A TOP OF THE PROPERTY OF THE P
_		Applications:
_		
-		Consider n station are to be linked using
1		a communication network and eying of
		a communication network and eying of communication link blow any two station
		Invalue a cook
	<u>/ii</u>	Suppose you megnt to construct highways
est-o-longer est	/	or railroads spanning several aities then
-		we can use the concept of minimum
		spanning tree.
_	iii	Design LAN.
<u>ر</u>	(vi	Caying pipelines connecting ofshore drilling
<i>\</i>	/	Suppose you meant to construct highways or railroads spanning several aities then we can use the concept of minimum spanning tree.  Design LAN.  Caying pipelines connecting afshore drilling ster, refineries and consume markets.
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02	
	Time complexity of Prince algorithms
Soln	Time complexity of the sugaritims
	0 (0+8) (09)
	Time complexity of Prince algorithms  O ((U+E) logg  Space complexity = O (U).
	Kruskali Algo
	T. C = ) O ( E ( log U ) )
	S.C. => 0 (101)
	Dijkska Algo
	$\frac{7.C}{0} = \frac{1}{0} = $
	S·C=) 0 (u2)
	Bellmanford Algo
	T.C => () (UE)
	S·C =) O(E)
വ	the second of th
90	
Sol	4 0 3 9
	(D) 11 2 (N)
	7 6
	8 7-(6)
11	

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The state of the s	Knus	kali al	30					
	0	٧	w		- <del> </del>			
	6	7	1		O	U	W	
	5	6	2	5. \		7	11	X
	2	8	2		3	5	14	_X
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	2	5	4					
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	2	3	7	to the second	1. 1.18 1. 1.18			
	7	8	7					
	0	7	8					
	1	$\boldsymbol{\mathscr{A}}$	8				· · · · ·	
	4	3	, , , 9, ,		. (4 × )			
	4	5	10	,				
				i	,			
94				1	-	·		
Soln	i) The	shortest	path mo	14	changes	The	e rec	won

Solution The shortest path may changes. The reason is there may be different numbers of edges in different paths from s' to t' For eg. let shortest path be of weight 15 and has edge 5. Let there be another path with 2 edge and total

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	weight 25. The weight of the shortest path is increased by 5 10 and become 15+50.
ii)	
1	The multiply all edges weight by lo, the shortest path don't change. The reason is simple, weight of all path from s' to t' get multiplied by same amount. The no. of edges on a path don't matter. It is like changing
	path don't matter. It is like changing limits of weights.
05	
Sol	Dijkska Algorithms
	10 (y) (v)
	(S) 2 3 1 4 1 6
	5 (N) 2

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node Shortest dist. from source node

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and the second s			Ollman Philosophia valida et alla partita et a Recenti di compressione di alla partita et alla partita et alla partita et alla partita di compressioni di com	auch (1,5 ann an Thailleann) gealaíolaíocht a phliain na the che ann ann an taiteann an taiteann an taiteann a Cheann an Thailleann an Thailleann an Thailleann an Thailleann an Thailleann an Thailleann an taiteann an tait		
	U	8				
	n	5				
	V	9				
	y	7				
	O					
	Bellmanfer	d Algo.				
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	$lst \rightarrow$	(S) (U)	$\overline{(v)}$	$(\mathcal{H})$	(4)	
		0 10	11.1	5	8	
	2 <sup>nd</sup> →	(3) (4)	$\bigcirc$	n	(y)	
			- 9	_ 5	<del></del>	
	3 <sup>rd</sup> ->	(3) (4)	$\bigcirc$	(n)	(4)	
		0 0 1	2 09	<u></u>	<del></del>	
	Иh →	(3) (a)	$\langle \rangle$	n	(4)	
		_				
	0.0	10, (y) —		$-(\vee)$		
	(3) {	2/13	9	116		
			7			
	5	>(n)_		(4)		
			2	0		
			,			