



Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)
Hingna Road, Wanadongri, Nagpur.

Even Term 2021-2022

27.08.2022

Mid Semester Exam II

Second Semester B.Tech. (AIDS)

AIDS 2158: Data Structures

Time: 1 Hr. 30 Min.

Max Marks: 30

Instructions to Examinees

1. All questions are compulsory and figures to right indicate marks allotted, CO & Bloom's Level.
2. Assume suitable data wherever necessary.

Sr. No.	Question & Description		Marks	CO Bloom's Level
Q.1	Solve the following.		10	CO mapped
	[A]	Create a binary search tree using the following data elements. 45,39,56,12,34,78,32,10,89,54,67,81 Delete 45 and 78.	05	CO4(L3)
	[B]	Solve the given arithmetic expression using binary tree and find value of x. $X = A * [(B + C) - (D * E / F)] + (G + H - J)$ Where A = 12, B = 15, C = 3, D = 4, E = 19, F = 38, G = 4, H = 7, J = 6.	05	CO4(L4)
Q.2	Solve the following.		10	CO mapped
	[A]	Create a B-Tree of order 5 by inserting the following elements: 3,14,7,1,8,5,11,17,13,6,23,12,20,26,4,16,18,24,25, and 19	05	CO4(L6)
	[B]	Construct a Red-Black Tree for the given sequence: 10,18,7,15,16,30,25,40,60,2,1,70	05	CO4(L6)

Q.3	Solve the following.	10	CO mapped
	<p data-bbox="411 427 1086 495">Apply the appropriate distance finding algorithm to find distance between each pair of vertices.</p> <div data-bbox="619 510 906 846"> <pre> graph TD 1((1)) -- 9 --> 2((2)) 1((1)) -- 6 --> 2((2)) 1((1)) -- -4 --> 3((3)) 3((3)) -- 5 --> 2((2)) 2((2)) -- 2 --> 4((4)) 4((4)) -- 1 --> 3((3)) </pre> </div>	07	CO4(L4)
	<p data-bbox="411 853 1086 920">Construct a minimum spanning tree of the graph below.</p> <div data-bbox="549 936 963 1160"> <pre> graph TD A((A)) --- 7 B((B)) B((B)) --- 11 E((E)) A((A)) --- 3 C((C)) B((B)) --- 9 D((D)) C((C)) --- 10 D((D)) C((C)) --- 4 B((B)) </pre> </div>	03	CO4(L6)