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   16.07.2022   Mid Semester Exam I
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]	Sort the sequence using Merge Sort. Also find number of divide operations required. 34,85,12,8,15,33,78,45,32,18,92	05	CO1(L4)
	[B]	Give the Yale, three column and linked list representation of following Sparse Matrix M of order 5*5. [00010,20030,69000,08000,01001]	05	CO1(L4)
Q.2		Solve the following.	10	CO mapped
	[A]	Difference between Singly Linked List and Doubly Linked List.	03	CO2(L5)
	[B]	Create the functions for singly linked list, for both insertion and deletion at the beginning and end.	07	CO2(L6)
Q.3		Solve the following.	10	CO mapped
	[A]	The keys 12, 28, 13, 2, 27, 23, 5 and 21 are inserted into an initially empty hash table of length 10 using open addressing with hash function h(k) = k mod 10 and linear probing. What is the resultant hash table?	05	CO3(L3)
	[B]	Apply Division and Mid- square method of hash on given sequence of elements and analyse which method leads to less number of collision. Consider size of hash table as 10. (From 0 to 9) 72,86,32,25,48,14,98,93,30,83	05	CO3(L3)