

Roll No.....

CS - 101**M.Tech. (CSE) I-Sem. (Reg./Ex)****Examination, March.-2021****Advance Data Structure & Algorithm****Time: Three Hours****Maximum Marks: 70****Note:** Attempt any five questions (each question carries equal marks.)

- Q.5 (a) Show the results of inserting the keys F, S, Q, K, C, L, H, T, V, W, M, R, N, P, A, B in order Into an empty tree of order 5?
- (b) What do you understand by Quick sort? Write the algorithm to sort using Quick sort take an example to explain your answer?
- Q.6 Explain AVL tree and Binary search tree? Insert the following elements in Binary search tree?
48,25,10,5,7,3,28,20,8,16.
- Q.7 What are the various algorithm design techniques? Illustrate the difference between dynamic programming and Greedy algorithm by using examples?.
- Q.8 Write short note on any two
- Backtracking
 - Priority Queue
 - Storage Compaction

- Q.1 What do you mean by asymptotic notations? Why is it used? Explain any two asymptotic notations? What is meant by algorithm Specification of ADT?
- Q.2 (a) Explain the Static and Dynamic Implementation of Stack?
- (b) Define Splay tree ? Explain Splay operation using Suitable example?
- Q.3 (a) Explain Garbage collection algorithms for equal sized blocks?
- (b) What are the advantages of buddy systems? How does they work? Explain with example?
- Q.4 (a) Write an algorithm for conversion of an infix expression into prefix expression using stack?
- (b) Consider a Heap from a Following list of Numbers
44,30,80,22.,60,55,77,55