CHITKARA UNIVERSITY

Department of Computer Science & Engineering
Chitkara University Institute of Engineering & Technology
(Accredited by NAAC with Grade 'A+')

Ref No: CUIET/CSE/ACAD/2025/491 Date: 28th October 2025

NOTICE

ATTENTION: - B.E CSE Batch 2023

Test Type: ST **Test No**: 1 **Total Marks**: 40 **Duration**: 90 Minutes

Name of Course Coordinator: Dr. Astha Gupta

Course Code: 22CS025

Course Title: Algorithm Design & Implementation (ADI)

Day: Saturday **Date**: 01/11/2025 **Time**: 9:00 AM to 4:00 PM

Mode: Online (On-Campus) **Semester**: B.E. (CSE) & 5th Sem **Platform**: Testpad

Groups: G1 – G12, G17 – G27

Syllabus for Test: (As Per CHO-Lecture No. 1-30): Introduction to the Course: Overview of advance data structure, Introduction to Time and Space Complexity: Iterative and Recursive Approach – I, Iterative and Recursive Approach – II. Practice Problem: Prime Factorization, GCD of two numbers, Distribute in circle. Problem Solving Techniques: Brute Force, Greedy Algorithms, Divide and Conquer, Dynamic Programming, Backtracking, Randomized Algorithms, Recursion, Two Pointer Technique, Sliding Window Technique. Backtracking: Permutations and Combinations, Subset Sum and Partition, Word Search, Hamiltonian Path. Practice Problem: Robot Movement, Solve Sudoku, Rat in a Maze, Print all strings of n-bit. Tree: Introduction, BST, Types of Trees, Tree Traversal and Operations, HBT(AVL) – I, HBT(AVL) – II. Practice Problem: Find the lowest common ancestor of a given two nodes in a binary search tree, Find the kth smallest element in the binary search tree.

Format of Assessment:

1 Marks MCQs :10

2 Mark MCQs: 5

5 Marks Coding Question: 2

10 Marks Coding Question: 1

Signature of Course Coordinator (Dr. Astha Gupta)