REG.NO.: 23BEE0014

VIT®

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF ELECTRICAL ENGINEERING
CONTINUOUS ASSESSMENT TEST - I
WINTER SEMESTER 2024-2025

SLOT: A1+TA1

Programme Name & Branch : B. TECH & ECSE
Course Code and Course Name : BCSE 204L & Design and Analysis of Algorithms

Faculty Name(s) : Dr. Satyajit Mohanty

Class Number(s) : 3827
Date of Examination : 27/1/25
Exam Duration : **90 minutes** **Maximum Marks: 50**

General instruction(s):

- Answer All Questions
- M - Max mark; CO – Course Outcome; BL – Blooms Taxonomy Level (1 – Remember, 2 – Understand, 3 – Apply, 4 – Analyse, 5 – Evaluate, 6 – Create)
- CO1-Apply the mathematical tools to analyze and derive the running time of the algorithms
- CO2-Demonstrate the major algorithm design paradigms

Q. No	Question	M	CO	BL
1.	What are the different stages of development of an algorithm? Discuss in details.	10	1	1
2.	Calculate the different feasible solutions using Greedy algorithm and identify the best approach to obtain maximum profit. **Objects** 1 2 3 4 5 6 7 **Profit** 5 10 15 7 8 9 4 **Weight** 1 3 5 4 1 3 2	10	2	2
3.	For w= {5,10,12,13,15,18} and m=30. Find all the possible subset of m and generate state space tree.	10	2	2
4.	a) Differentiate between Greedy and Dynamic approach taking one example.	3	2	2
	b) Let A1, A2, A3 and A4 be four matrices of dimensions 10×6, 6×20,20×10 and 10×5 respectively. What is the minimum number of scalar multiplications required to find the product using basic matrix multiplication method.	7		
5.	Given two sequences X=ABCBDAB & Y=BDCABA Find the longest common subsequence between X & Y using dynamic programming with all required steps.	10	2	2