

Pandit Deendayal Energy University

(Formerly Pandit Deendayal Petroleum University)

End Sem Examination

B. Tech. Computer Engineering

Semester - IV

Date: 12.05.2022

Time: 10.00 am to 12.00 pm

Max. Marks: 40

Course Name : Design And Analysis Of Algorithm

Course Code : 20CP209T

Instructions:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever essential and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics wherever required is an integral part of the answer.

		Marks	Level
Q-1	Attempt Following (Any Two)	10	1
(I)	Explain Big Oh, Big Omega and Big Theta with example in each.		
(II)	Explain Aggregate method of Amortized analysis with respect to the stack or binary counter example.		
(III)	Explain need of Approximation algorithm with example of 0-1 knapsack.		
Q-2	Attempt Following (Any Two)	10	2
(I)	Explain Recursion tree method with example.		
(II)	Explain Inhomogeneous recurrence solving method with example.		
(III)	Explain Substitution method for recurrence equation with example.		
Q-3	Attempt Following (Any Two)	10	3
(I)	Explain fractional knapsack using Greedy and derive complexity.		
(II)	Explain quick sort using Divide & Conquer and derive complexity.		
(III)	Explain making change using dynamic Programming and derive complexity		
Q-4	Explain Backtracking using suitable example(5 marks). Differentiate between	10	5
(A)	backtracking and Divide & Conquer (5 marks).		
	OR		
Q-4	Explain Branch & Bound using suitable example (5 marks). Differentiate	10	5
(B)	between Branch & Bound with greedy technique (5 marks).		