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MIT WORLD PEACE UNIVERSITY | PUNE
TECHNOLOGY, RESEARCH, SOCIAL INNOVATION & PARTNERSHIPS

PRN:

Term End Examination

Dec 2023

CET3001B - design and Analysis of Algorithms

Question Paper ID: 026363

Faculty/School	Engineering and Technology	**Term**	Semester V
Program	TY CSE AIDS	**Duration**	**2 Hours 30 Minutes**
Specialization		**Max. Marks**	**70**

Section - 1 (7 X 10 Marks)
Answer any 7 questions

1	Solve the recurrence equation with forward substitution method. T(n) = T(n-1) + 1 with initial condition T(0) = 0	**10 marks**	CO1	Applying
2	Find an optimal solution using knapsack greedy approach where n=3, m=20 (P1, P2, P3)= (30, 21, 18) , (w1, w2, w3)=(18,15,10)	**10 marks**	CO2	Applying
3	Distinguish between greedy algorithm and Divide and conquer algorithm	**10 marks**	CO3	Understanding
4	Solve the following knapsack problem by using dynamic programming , Capacity of Knapsack is M=6 , Weight =(2,3,4) , Value (1,2,5)	**10 marks**	CO3	Applying
5	Solve the Traveling salesperson problem by using dynamic programming . Row 1 [0,9,8,8] , Row 2 [12,0,13,6] , Row 3 [10,9,0,5] , Row 4 [20,15,10,0]	**10 marks**	CO3	Applying
6	Explain the difference between backtracking and branch and bound strategy.	**10 marks**	CO4	Understanding
7	Describe five advantages of backtracking technique.	**10 marks**	CO4	Remembering
8	What is the control abstraction for least cost search in branch and bound strategy	**10 marks**	CO5	Understanding
9	Explain Cook's Theorem. Explain P and NP class.	**10 marks**	CO5	Remembering
10	Explain pros and cons of parallel algorithms.	**10 marks**	CO5	Remembering

END OF QUESTION PAPER