


MARKS		QUESTION DESCRIPTION		S.No	UNIT	Blooms Taxonomy	CO
10		Discuss how graph coloring problem is solved using backtracking with appropriate algorithm and give the state space tree with suitable example.	10	1	III	Understand	CO4
10		What is Hamiltonian cycle? Explain how to find Hamiltonian path and cycle using back tracking. Find the Hamiltonian cycle in the following graph.	10	2	III	Apply	CO4
10		Discuss in detail about obtaining lower bounds through reductions with suitable examples.	10	3	IV	Understand	CO5
10		Solve following TSP problem.	10	4	IV	Apply	CO5
10		Explain about NP hard and NP complete classes with suitable examples.	10	5	V	Apply	CO6

ANSWER ANY THREE QUESTIONS		QUESTION DESCRIPTION		S.No	UNIT	Blooms Taxonomy	CO
MAX 30	M						

NAME OF THE SUBJECT		DATE OF EXAM		H T NO.	
DESIGN AND ANALYSIS OF ALGORITHMS		12.08.2021 AN			
DURATION		SIGN OF INVIGILATOR			
90 MINUTES		CSE			

GEEETHANJALI INSTITUTE OF SCIENCE & TECHNOLOGY	
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Name of the subject		DESIGN AND ANALYSIS OF ALGORITHMS	
Date of Exam	12.08.2021 AN	BRANCH	
H T NO.		Sign of Invigilator	
		CSE	
		Duration	
		20 MINUTES	

ANSWER ALL QUESTIONS

S.No	UNIT	QUESTION DESCRIPTION	ANSWER
1	V	To which of the following class does a CNF-satisfiability problem belong? A. NP-hard B. NP-complete C. NP D. P	
2	III	In how many directions do queens attack each other? A. 3 B. 2 C. 4 D. 1	
3	V	Problems that can be unsolvable by polynomial time is known as A. np B. np-complete C. p D. np-hard	
4	V	Example for NP-complete A. SAT B. TSP C. knapsack D. OBST	
5	V	The problem that involves identification of optimal is called A. decision problem B. optimization problem C. n queens problem D. knapsack problem	
6	IV	Which of the following is not a type of graph in computer science? A. directed graph B. weighted graph C. undirected graph D. bar graph	
7	III	Hamiltonian cycle problem is an application for algorithm technique? A. dynamic programming B. divide and conquer C. back tracking D. greedy method	
8	III	Where is the n-queens problem implemented? A. carom B. cards C. chess D. ludo	
9	III	The minimum number of colors required to color the graph is called A. hamiltonian path B. graph coloring C. chromatic number D. n queens problem	
10	V	NP-Complete is an intersection of and A. p and np B. np and nqueens C. np and np-hard D. p and np-hard	
11	III	Which of the problems cannot be solved by backtracking method? A. sum of subsets B. hamiltonian cycle C. TSP D. nqueens	
12	V	Example for p A. knapsack problem B. searching C. OBST D. TSP	
13	V	Example for NP A. OBST B. sorting C. searching D. matrix multiplication	
14	III	The Data structure used in standard implementation of Depth First Search is? A. stack B. trees C. linked list D. queue	
15	III	Sum of subsets is an example for technique. A. dynamic programming B. back tracking C. divide and conquer D. greedy method	
16	III	How many tree traversal techniques are there ? A. 5 B. 2 C. 3 D. 4	
17	III	A graph with no articulation point is called A. connected graph B. acyclic graph C. cyclic graph D. bi connected graph	
18	V	Problems that can be solvable by polynomial time is known as A. np-hard B. np-complete C. p D. np	
19	V	If an algorithm working is known then it is called A. recursive algorithm B. non deterministic algorithm C. non recursive algorithm D. deterministic algorithm	
20	III	How many edges will a tree consisting of N nodes have? A. n B. n-1 C. n+1 D. logn	