END SEMESTER EXAMINATION, MAY 2023
S.T. SEMESTER IV (CBCGS-HME 2020)

Branch:	B.Tech AI&DS	**Q.P. Code:**	T2415002-2
Subject:	Design Analysis and Algorithm	**Duration:**	2 hours
Subject Code:	PCC-AIDS401	**Max. Marks:**	60

Instructions: 1. All sections are compulsory
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary and state the assumptions clearly.

Section-I Short Answer Questions (Answer any 05 questions out of 06) (10 Marks)
(Fundamental, Core Types)

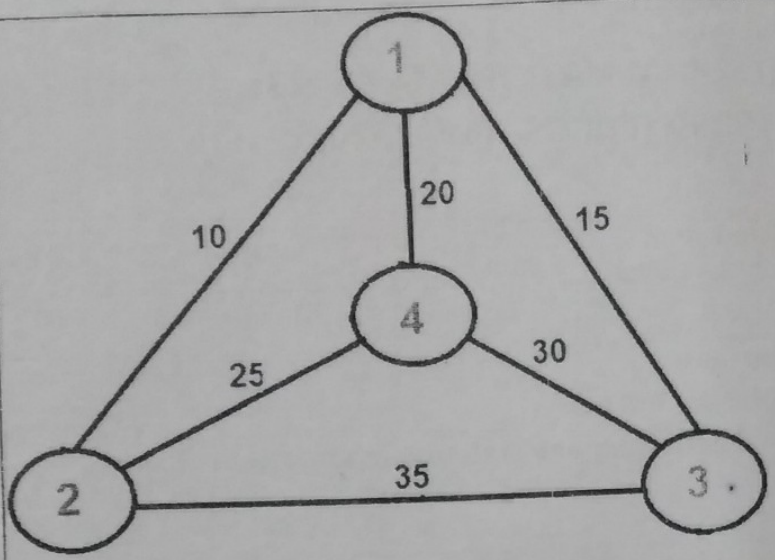
Q. No.		Marks	CO	RBT Level	PI
1	Describe Properties of algorithm	2	CO1	R	1.1.1
2	Application of Greedy Algorithm	2	CO2	R	1.1.1
3	Describe Single source shortest path	2	CO3	R	1.1.1
4	Explain 8 Queen Problem	2	CO4	U	1.3.1
5	What is Finite Automata with 5 tuple	2	CO5	U	1.3.1
6	Draw and explain NP complete Problem	2	CO6	R	1.1.1

Section-II Descriptive Answer Questions(Answer any 04 out of 06) (20 Marks)
(Descriptive, Comprehension Types)

1	Short note on Multistage graph	5	CO3	R	1.1.1
2	Describe Naïve String Matching Algorithm	5	CO5	R	1.1.1
3	Explain order of growth of Function	5	CO1	U	1.3.1
4	Describe Graph coloring with its Application	5	CO5	U	1.3.1
5	Short note on Finite automata	5	CO5	U	1.3.1
6	Differences between Prims & Kruskal Algorithm	5	CO4	R	1.1.1

Section-III Long Answer Question (Answer any 03 out of 05) (30 Marks)
(Application, Analytical, Evaluation, Design Type)

1	Explain the idea behind backtracking ?Write and algorithm for N –queen Problem .Draw state spaces tree for 4 queen Problem	10	CO4	A	2.1.3
2	Explain Multi graph Shortest path Algorithm with example	10	CO3	A	2.1.3

3	 Solve by Travelling salesperson problem using Dynamic Programming	10	CO4	AN	3.1.1
4	Describe the type of complexity classes	10	CO6	A	2.1.3
5	Explain How branch and bound strategy can be used in 15 puzzle problem	10	CO5	A	2.1.3