Reg. No.:

Name :

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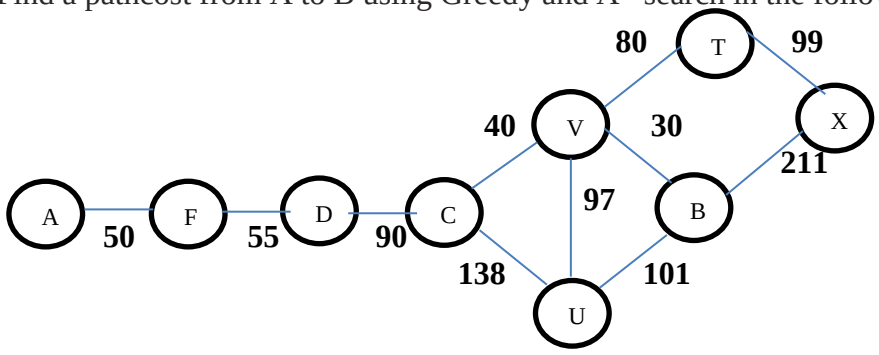
Mid-Term Examinations – April 2023

Programme	:	**B.Tech**	Semester	:	**Summer 2022-23**
Course	:	**Fundamentals of AI and ML (CSA2001)**	Slot/ Class No.	:	**A11+A12+A13/0204**
Time	:	**1 ½ hours**	Max. Marks	:	**50**

Answer all the Questions

Q.No.	Sub. Sec.	Question Description	Marks
1	(a)	How the components of agent programs work?	**5**
	(b)	Discuss the examples of agent types and analyze their PEAS description according to their uses.	**5**
2		Describe the purpose of production system with examples. Analyze the various problem characteristics and categorize the following problems according to their characteristics- a. Water jug b. 8-puzzle c. Chess d. Theorem proving	**10**
3		Consider the missionaries and cannibals problem. Analyze this problem with respect to seven problem characteristics and find a good state space representation.	**10**
4		Find a pathcost from A to B using Greedy and A* search in the following graph.  Values of h_{SLD}- Straight-line distance to B. B – 0 C – 160 D – 242 X – 176 A – 244 F – 241	**10**

U – 100
V – 193
T – 253

5 I. From the following KB, solve the given task using any one of the resolution techniques.

1. Mac likes easy games
2. Boxing is hard
3. All the indoor games are easy
4. Table Tennis is an indoor game.

Task: Find the name of the game which is liked by Mac.

II. From the following KB, solve the given task using any one of the resolution techniques for INF and CNF representation. **10**

1. Daniel owns a dog
2. Every dog owner is an animal lover
3. No animal lover kills an animal
4. Either Daniel or Curiosity killed the cat, who is named Luna
5. Luna is a cat
6. All cats are animals

Task: Show that Kills (Curiosity, Luna) is true.

III. For each pair of atomic sentences, give the most general unifiers if it exists.

a) P(A, B, B), R(x, y, z)
b) Q(y, G(A, B)), Q(G(x, y), y)

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