B.Tech. (Computer Science & Engineering) Fifth Semester (C.B.C.S.) Winter 2022
Artificial Intelligence

P. Pages : 2

Time : Three Hours

Max. Marks : 70

Notes : 1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Assume suitable data whenever necessary.
8. Diagrams and chemical equations should be given whenever necessary.

1. a) Define and Explain the state space representation for eight puzzle problem? 7

   b) What is AI technique? Explain different AI techniques. 7

OR

2. a) Explain the characteristics of AI problem? 8

   b) Explain Turing Test. 6

3. a) Write the difference between depth-first search and breadth first search. 7

   b) Explain constraints satisfaction with suitable example. 7

OR

4. a) Write and Explain hill climbing algorithm. What are the drawbacks of Hill climbing algorithm. 9

   b) Explain Generate and Test? 5

5. a) Explain the differences between procedural and declarative knowledge. 6

   b) What is resolution in AI? Consider the following sentences and prove angle B is equal to angle C. 8

   i) If a triangle is equilateral then it is isosceles

   ii) If a triangle is isosceles then 2 sides AB and AC are equal

   iii) If AB and AC are equal then angle B and angle C are equal

   iv) ABC is an equilateral triangle

OR

6.	a)	Explain Unification Algorithm with suitable example.	8
	b)	Define Semantic Network. Draw the Semantic Network for the following statement.	6
		i) All dogs bite all the postman	
		ii) Dog, the danny, who has bitten a postman, peter	
7.	a)	What is fuzzy logic? How it is used for decision making under uncertainty?	7
	b)	Explain Baye's theorem.	7

OR

8.	a)	Explain various types of agent in AI.	8
	b)	Explain Bayesian networks.	6
9.	a)	Explain Architecture of an Expert System in detail.	8
	b)	Explain the process of knowledge acquisition.	6

OR

10.	a)	What are the levels of knowledge used in language understanding?	7
	b)	What do you mean by learning? Explain various types of learning.	7

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