



**Semester End Examination - January 2022**

**Course Code : CSE 405 Course Name : Artificial Intelligence**

**School of Engineering & Information Technology**

**Programme: B.Tech (CSE)(Regular & Lateral)**

**Semester: VII**

**Time: 3 hrs**

**Max. Marks 100**

**PART – A (10 questions X 2 marks = 20 Marks)**

**Answer ALL the Questions**

1. Attempts all parts. All parts carry equal marks. Write answer of each part in short.
  - a. List the criteria to measure the performance of search strategies. [2]
  - b. What is Artificial Intelligence? What are the goals of AI? [2]
  - c. What is Decision tree? Give its example. [2]
  - d. Define Machine Learning. [2]
  - e. What is PEAS? [2]
  - f. “Some students are Intelligent” convert it into predicate logic. [2]
  - g. What is inference? [2]
  - h. List some of the uninformed search techniques. [2]
  - i. What are advantages of Depth first search? [2]
  - j. Define the term pattern matching? [2]

**PART – B (4 questions X 5 marks = 20 Marks)**

**(Answer all questions)**

2. Write short notes on Support Vector Machine. [5]
3. Define Forward chaining and Backward chaining. Also differentiate between them. [5]
4. What is propositional logic? Define elements of propositional logic. [5]
5. What are parameter estimation methods used for pattern recognition? [5]

**PART – C (3 questions X 10 marks = 30 Marks)**

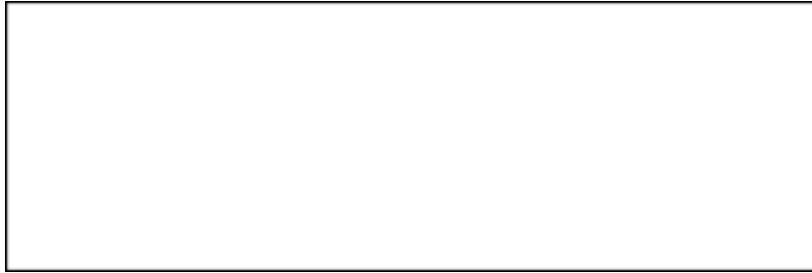
**Answer Three out of Four Questions**

6. Explain the A\* Search algorithm with the help of an example. Calculate the optimal path by discussing an example. [10]
7. Explain the Resolution Principle with example. Using this principle Prove that “Ram is Intelligent” from the following sentences [10]
  - (1) All IIT students are intelligent
  - (2) Ram is an IIT student.
8. What is Adversarial search? Discuss the Procedural and Declarative knowledge with examples. [10]
9. Define and Explain [10]
  - a) Supervised Learning
  - b) Unsupervised Learning
  - c) Reinforcement Learning

**PART – D (2 questions X 15 marks = 30 Marks)**

**Answer Two out of Three Questions**

10. Write the Short notes on the following. [15]  
a) Bayes model for classification.  
b) Pattern Recognition.  
c) Bayesian network
11. What is Heuristic search and Heuristic function? Solve the following 8 puzzle problem using this approach. [15]



12. What is Intelligent Agent? Explain structure of Intelligent Agent and its types. [15]