

**ARTIFICIAL INTELLIGENCE  
QUESTION BANK UNIT- I**

1. Definitions of AI. Current trends in AI?
2. **Explain foundations of AI ?**
3. **What are the four categories of intelligent systems? Sub-areas and applications of AI** 3. Definitions of state space, search space, control strategy
3. Comparison of search strategies (uninformed) in terms of time, space, completeness of search strategies.
4. **Admissibility of A\* and IDA\* algorithm**
5. **Describe the IDA\* algorithm**
6. Problems: Trace the nodes visited during BFS, DFS and IDDF given graphs (trees) showing the nodes
7. Problems: Show the iterations of A\* and IDA\* using diagrams given a tree with actual distances and heuristic values.
8. Problems: Show how values are propagated in the game tree using **MINIMAX and \*(ALPHA-BETA pruning)**. Show the nodes that will be pruned.
9. **what are different Structure agents ?explain all in detail?**
10. **what is best first search with romania city?**
11. **what is greedy best first search with romania city?**
12. **what heuristic function?**
13. **Explain about optimality solution by A\* algorithm?**
14. define perfect game and imperfect game?
15. **explain mini max algorithm?**
16. **what is evaluation function ?**
17. **Explain with any one Exhaustive search technique the Water-Jug Problem for 5-gallon jug and 3-gallon jug and Show the trace of search tree?**
18. **Explain A\* Algorithm with the help of 8-puzzle Problem?**

**ARTIFICIAL INTELLIGENCE  
QUESTION BANK UNIT- II**

1. What is Resolution ? Explain and find the resolvent of the Clauses in the set (A $\vee$ B,  $\sim$ A $\vee$ D, C $\vee$  $\sim$ B)
2. Consider a set S={ $\sim$ (A $\vee$ B), (C $\rightarrow$ B), (A $\vee$ C)} of formulae. show that S is Unsatisfiable.?
3. What is meant by resolution refutation method in propositional logic?
4. **With the help of First order logic solve the given query**
  - (i) All people who are graduating are Happy
  - (ii) All Happy people Smile
  - (iii) Someone is Graduating**Prove Is Someone Smiling?**
5. **Write about Semantic Networks? (CO2) (4 marks)**
6. **Write about Frames ?**
7. **Write short notes on basic elements of search based problem solver of Form problem solving to planning ?**
8. **What is Partial order Planning explain with the help of an example?**
9. **Write an Algorithm for Partial order Planning ?**
10. **What is Heirarchical Planning?**

**ARTIFICIAL INTELLIGENCE  
QUESTION BANK UNIT- III**

1. **Explain Architecture of an expert system and write about expert system applications?**
2. **Write about different Phases of Expert System?**
3. Advantages and Disadvantages of Expert systems ?
4. Difference between joint probability and conditional probability. ?
5. Write short notes on Bayes Theorem?
6. **Bayesian Belief Network Problems?**
7. **Calculate joint probability using Bayesian Belief Network**
8. Explain Bayesian Belief Network with an example?
9. **explain fuzzy logic architecture?**
10. **explain membership funtion in fuzzy logic with one numerical example?**
11. **write about utility theory?**
12. **write about utility function ?**

**ARTIFICIAL INTELLIGENCE  
QUESTION BANK UNIT- IV**

1. list out the difference between Inductive Learning?
2. What is Reinforcement learning
3. What is Deductive Learning?
4. Compare Supervised Learning and Unsupervised learning
5. What is Machine Learning ? List and Explain the components of a Learning system?
6. What is Single Feed Forward Network?
7. What is Perceptron-Neuron model? and What are its Limitations
8. Explain Perceptron with one numerical classification problem ?
9. Explain the Multi Layer Feed forward Network and how to solve XOR Problem?
10. Explain with the help of training example of Backpropagation algorithm with root mean squared error and Weight updated root?
11. Explain the Learning Decision tree with an example?

**ARTIFICIAL INTELLIGENCE  
QUESTION BANK UNIT- V**

1. Write the grammar and Parse tree to parse the given below sentence?  
**The girl saw a man in the park with a Dog**
2. Explain Case Grammars?
3. Write difference between Link Parser and Chart Parser?
4. What is Augmented Transition Network?
5. What is Simple Transition Networks?
6. What is Parsing? With the help of an example write about different Parsing methods?
7. What are the Components of Natural Language processing?
8. What is Speech Processing? Explain with an example the HARPY and DRAGON?
9. What are applications of Machine vision?
10. What are principle of Vision?
11. What are the different Machine vision Techniques write about them?

**Assignment question s:-**

**Unit 1 → 4,18**

**Unit2 → 6,8**

**Unit3 → 1,9**

**Unit4 → 4,8**

**Unit5 → 6,11**

**There is quiz which will be uploaded on google classroom as and when it is ready, I will update about this in AI Whats app group.**

**Submit when you come to college for Lab External Exam ,  
Staff room Cellar cabin No: G(Last cabin)**