

- c) Consider the problem of learning to play tennis. Are there aspects of this learning that are supervised learning? Is this supervised learning or reinforcement learning.

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(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 2289928

Roll No.

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B.TECH

Regular Theory Examination, (Odd Sem - VII) 2016-17

ARTIFICIAL INTELLIGENCE

Time : 3 Hours

Max. Marks : 100

Section - A

- Attempt all parts of the following. All parts carry equal marks. (10×2=20)
 - State the significance of using heuristic functions?
 - Distinguish between state space search and plan space search.
 - List two applications of Hidden Markov model.
 - List various criterions for success in AI.
 - What is semantic analysis? Explain.
 - List various issues in knowledge representation.
 - What do you mean by local maxima with respect to search technique?

- h) List down two applications of temporal probabilistic models.
- i) What are the limitations in using propositional logic to represent the knowledge base?
- j) Define reinforcement learning.

Section - B

2. Attempt any 5 questions from this Section. (5×10=50)

- a) Explain AO* algorithm with a suitable example. State the limitations in the algorithm.
- b) Explain the constraint satisfaction procedure to solve the crypt arithmetic problem.
- CROSS + ROADS = DANGER.
- c) What are planning graphs? Explain the methods of planning and acting in the real world.
- d) What is resolution? Discuss the role of resolution in predicate logic.
- e) What are various production system characteristics? Discuss the various issues involved in the design of search programs.

- f) Explain in detail on the characteristics and applications of learning agents.
- g) Explain unification algorithm used for reasoning under predicate logic with an example.
- h) Explain the method of handling approximate inference in Bayesian Networks.

Section - C

Attempt any 2 of the following. (2×15=30)

3. a) Explain the use of Hidden Markov Models in Speech Recognition.
- b) Discuss various approaches in NLP.
- c) What is problem space? How problem can be defined as state space search?
4. a) Explain Min-Max algorithm with example.
- b) What are the heuristic search techniques in AI? Explain any one in detail.
- c) Write short note on Conceptual Dependency.
5. a) What do you mean by representing instance and ISA relationship?
- b) Elaborate Forward and Backward chaining.