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**B.TECH**  
**(SEM VII) THEORY EXAMINATION 2021-22**  
**ARTIFICIAL INTELLIGENCE**

**Time: 3 Hours****Total Marks: 100****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.

**SECTION A**

- 1. Attempt all questions in brief. 2 x 10 = 20**
- n?
  - e.
  - What do you understand by feature extraction?
  - What are the different properties of a task environment?
  - Describe the First-order logic model.
  - Describe resolution in brief.
  - What is LISP? Why it is so popular in AI.
  - What is the role of intelligent agent?
  - What is the need of classification techniques in pattern recognition?
  - Differentiate supervised and unsupervised learning.

**SECTION B**

- 2. Attempt any three of the following: 10 x 3 = 30**
- What is meant by the term Artificial Intelligence? How it is difficult from natural intelligence?
  - Discuss Branch-and-bound search algorithm.
  - What is the difference between knowledge representation and knowledge acquisition?
  - Explain clustering and differentiate between supervised and unsupervised learning.
  - Describe the N-queens problem in detail. Also explain with an example.

**SECTION C**

- 3. Attempt any one part of the following: 10 x 1 = 10**
- What do you understand by natural language processing?
  - Explain the concept of alpha-beta pruning. write alpha-beta search algorithm.
- 4. Attempt any one part of the following: 10 x 1 = 10**
- Differentiate between local search and global search.
  - Discuss simulated annealing search algorithm with its advantages and disadvantages.
- 5. Attempt any one part of the following: 10 x 1 = 10**
- Define forward chaining and backward chaining with examples.
  - Discuss various application domains of machine learning.
- 6. Attempt any one part of the following: 10 x 1 = 10**
- Write short notes on support vector machine.
  - What is pattern recognition? Explain various steps involved in the designing of a pattern recognition system with the help of a diagram.
- 7. Attempt any one part of the following: 10 x 1 = 10**
- Write short notes on Bayesian classifier.
  - Write short notes on LDA and PCA