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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**
- What is a heuristic function?
 - Explain the role of Computer Vision in artificial intelligence.
 - 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