7E7043

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B. Tech. VII Sem. (Main / Back) Exam., Nov. – Dec. - 2018
Electrical & Electronics Engineering
7EX3A Artificial Intelligence Techniques
Common with EE, EX

Time: 3 Hours

ersahilkagyan.com

Maximum Marks: 80
Min. Passing Marks: 26

*Instructions to Candidates:*

*Attempt any five questions, selecting one question from each unit. All questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.*

*Units of quantities used/calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

1. NIL _____ 2. NIL _____

## UNIT- I

Q.1 What is the difference between natural intelligence and artificial intelligence? Explain how AI technique can be represented? [16]

### OR

Q.1 What are knowledge based Expert systems? Also elaborate its importance in engineering in detail. [16]

## UNIT- II

Q.2 (a) Differentiate between knowledge representation and knowledge acquisition. [8]

(b) Write short note on Representation of knowledge using logic rules, frames. [8]

### OR

Q.2 Explain forward versus backward chaining Control Strategies with the help of appropriate examples. [16]

# UNIT- III

Q.3 What is Artificial Neural Networks? Explain types of activation functions in detail. [16]

## OR

Q.3 Explain Single layer and multilayer perceptions along with perception learning algorithms in detail. [16]

# UNIT- IV

Q.4 (a) Explain the limitations of propagation learning, also explain how to overcome these limitations. [8]

(b) Explain the two different phases of back propagation algorithm. [8]

## OR

Q.4 Define the concept of supervised learning and unsupervised learning. Also explain Kohonen's top field network & Algorithm. [16]

# UNIT- V

Q.5 (a) Define the concept of Fuzzy logic. Also Explain the Fuzzy relation and membership functions. [8]

(b) Write short note on Defuzzification. [8]

## OR

Q.5 (a) Design a flowchart of genetic algorithm in game playing. [8]

(b) Write short note on Crossover and Mutation. [8]