

Code No: R1642053

**R16**

**Set No. 1**

**IV B.Tech II Semester Regular/Supplementary Examinations, July - 2021**

**MACHINE LEARNING**

**(Computer Science and Engineering)**

**Time: 3 hours**

**Max. Marks: 70**

*Question paper consists of Part-A and Part-B*

*Answer ALL sub questions from Part-A*

*Answer any FOUR questions from Part-B*

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**PART-A (14 Marks)**

1. a) What kind of problems can Machine Learning solve? [2]
- b) Differentiate between Supervised and Unsupervised learning. [2]
- c) Write about descriptive rule learning. [2]
- d) What is distance based clustering in machine learning? [3]
- e) What is meant by Ensemble learning? [2]
- f) Why XOR problem cannot be solved by a single layer Perceptron? [3]

**PART-B (4x14 = 56 Marks)**

2. a) "Machine Learning Can't Solve Every Problem". Is this statement correct? Give justification to your answer with proper explanation. [7]
- b) With an example, explain about classification and ranking. [7]
3. a) Explain about the types of Regression techniques in machine learning. [7]
- b) What exactly is concept learning? Explain in detail. [7]
4. a) Explain in detail about various categories of splitting the node in decision tree construction. [10]
- b) What are first order rules? Explain about first order rule learning. [4]
5. a) What is a Perceptron? What are the problems that can be solved with perceptrons? Explain. [7]
- b) Discuss the k-nearest neighbor learning classification and also discuss its remarks. [7]
6. a) How the presence of hidden or latent variables affect the learning of probabilistic models. [7]
- b) Explain the similarity and differences between bagging and boosting techniques. [7]
7. a) What is the main purpose of principal component analysis? Explain. [7]
- b) Explain the back propagation algorithm in training neural networks. [7]