

Code No: R1642053

R16

Set No. 1

IV B.Tech II Semester Advanced Supplementary Examinations, October – 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

PART-A (14 Marks)

1. a) When should you not use machine learning? [2]
- b) Write about Binary classification and Multi-class classification with examples. [3]
- c) What is meant by Predictive rule learning? [2]
- d) How are linear classifiers different from non-linear classifiers? [2]
- e) Why do we need ensemble methods in machine learning? [2]
- f) How does back propagation algorithm work? [3]

PART-B (4x14 = 56 Marks)

2. a) Explain about the real world problems that can be solved using Machine Learning. [7]
- b) Explain about the four main types of Machine Learning models. [7]
3. a) What do you mean by unsupervised learning? Explain about various types of unsupervised learning. [7]
- b) Describe about hypothesis space in concept learning. [7]
4. a) Explain about Probability estimation trees. [10]
- b) Can rule sets be unordered? Give proper explanation to your answer. [4]
5. a) What is a Support vector machine? How does a support vector machine work? [7]
- b) Mention some significant real time applications of clustering. [3]
- c) Explain about Hierarchical clustering technique. [4]
6. How does the random forest model work? How is it different from bagging and boosting in ensemble models? [14]
7. a) What is Principal Component Analysis? Explain. [7]
- b) How can a multi-layer perceptron address limitations of a single-layer perceptron? [7]