



R20 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

Subject code: 3P5GD

B.Tech V Semester Regular Examinations, January 2023

INTRODUCTION TO MACHINE LEARNING

(CSE (AI & ML))

Maximum Marks: 70

Date: 18.01.2023 Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 Define Machine learning.
- 2 State issues in Machine learning.
- 3 Define Entropy and Gain.
- 4 Mention the issues related to over fitting.
- 5 Define Bayes theorem.
- 6 State EM algorithm.
- 7 Define Analytical learning.
- 8 Define sequential covering algorithm.
- 9 State Inductive learning.
- 10 Define Reinforcement learning strategy.

Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 A. Explain steps involved in designing a learner system.
B. Explain General-to-specific ordering of hypotheses. [5+5]
OR
- 12 A. Write Find-S algorithm.
B. Write about Inductive bias based learning mechanism. [5+5]
- 13 A. Construct Decision tree for the specific dataset using ID3 algorithm.
B. Give neural network representation with all the details included. [5+5]
OR
- 14 A. Write Back propagation algorithm for multi layered networks.
B. Explain estimating hypothesis accuracy using sample error and true error. [5+5]
- 15 A. State and Explain Naive Bays classifier.
B. Write about Maximum likelihood and least squared error hypothesis. [5+5]
OR
- 16 A. Write about k-Nearest neighbor learning.
B. Write about PAC learnability. [5+5]

- 17 A. Write about FOIL.
B. Discuss Inductive and Analytical learning problems. [5+5]
OR
- 18 A. Write First order Horn Rules.
B. Explain General to Specific Beam Search with neat diagram. [5+5]
- 19 A. Write about Inductive-Analytical approaches to learning.
B. Write about the ways to use prior knowledge in Hypothesis space search. [5+5]
OR
- 20 A. Write KBANN algorithm with an example dataset.
B. What is meant by learning task? Explain. [5+5]