Hall Ticket No | | | | | | | | | | | Question Paper Code: ACSB21

INSTITUTE OF AERONAUTICAL ENGINEERING
(Autonomous)

B.Tech V Semester End Examinations (Regular), February – 2021

Regulation: IARE–R18

MACHINE LEARNING

Time: 3 Hours **(CSE | IT)** **Max Marks: 70**

Answer any Four Questions from Part A
Answer any Five Questions from Part B

PART – A

1. Explain the candidate elimination algorithm. **[5M]**
2. List the issues in decision tree learning. **[5M]**
3. Write a note on representational power of perceptron. **[5M]**
4. Explain Naïve Bayes theorem with example. **[5M]**
5. Write short notes on reinforcement learning and its applications. **[5M]**
6. Explain task, experience and performance in checkers learning problem. **[5M]**
7. Discuss hypothesis space search in decision tree learning. **[5M]**
8. Mention the importance of stochastic gradient descent. **[5M]**

PART – B

9. Distinguish traditional and machine learning program.Describe in detail all the steps involved in designing a learning system. **[10M]**
10. What do you mean by a well posed learning problem? Explain the important features that are required to well define a learning problem. **[10M]**
11. What is the procedure of building decision tree using ID3 with information gain Illustrate with example. **[10M]**
12. Illustrate Occam's razor and relate the importance of Occam's razor with respect to ID3 algorithm. **[10M]**
13. Explain in detail about calculating confidence interval for a population proportion. **[10M]**
14. Describe the significance of artificial neural network in machine learning. Explain about the types of neural networks in artificial intelligence. **[10M]**
15. Describe the concept of MAP hypothesis, ML hypothesis with suitable example. **[10M]**
16. A man is known to speak truth 2 out of 3 times. He throws a die and reports that the number obtained is a four. Find the probability that the number obtained is actually a four by using Bayes theorem. **[10M]**
17. Describe K-nearest neighbour learning algorithm for continuous valued target function. **[10M]**
18. Explain Q learning algorithm assuming deterministic rewards and actions? **[10M]**