MODULE 1 – INTRODUCTION AND CONCEPT LEARNING

1. Define Machine Learning. Explain with examples why machine learning is important.

2. Discuss some applications of machine learning with examples.

3. Explain how some disciplines have influenced the machine learning.

4. What is well- posed learning problems.

5. Describe the following problems with respect to Tasks, Performance and Experience:

   a. A Checkers learning problem

   b. A Handwritten recognition learning problem

   c. A Robot driving learning problem

6. Explain the steps in designing a learning systems in detail.

7. Explain different perspective and issues in machine learning.

8. Define concept learning and discuss with example.

9. Explain the General-to-Specific Ordering of Hypotheses

10. Write FIND-S algorithm and explain with example given below

Example	Sky	AirTemp	Humidity	Wind	Water	Forecast	EnjoySport
1	Sunny	Warm	Normal	Strong	Warm	Same	Yes
2	Sunny	Warm	High	Strong	Warm	Same	Yes
3	Rainy	Cold	High	Strong	Warm	Change	No
4	Sunny	Warm	High	Strong	Cool	Change	Yes

11. What are the key properties and complaints of FIND-S algorithm?

12. Define Consistent Hypothesis and Version Space.

13. Write LIST-THEN-ELIMINATE algorithm.

14. Write the candidate elimination algorithm and illustrate with example

15. Write the final version space for the below mentioned training examples using candidate elimination algorithm.

Example – 1:

Origin	Manufacturer	Color	Decade	Type	Example Type
Japan	Honda	Blue	1980	Economy	Positive
Japan	Toyota	Green	1970	Sports	Negative
Japan	Toyota	Blue	1990	Economy	Positive
USA	Chrysler	Red	1980	Economy	Negative
Japan	Honda	White	1980	Economy	Positive
Japan	Toyota	Green	1980	Economy	Positive
Japan	Honda	Red	1990	Economy	Negative

Example – 2:

Size	Color	Shape	Class
Big	Red	Circle	No
Small	Red	Triangle	No
Small	Red	Circle	Yes
Big	Blue	Circle	No
Small	Blue	Circle	Yes

16. Explain in detail the Inductive Bias of Candidate Elimination algorithm.