CBCS SCHEME

USN | | | | | | | | | | |

18MT742

Seventh Semester B.E. Degree Examination, Feb./Mar. 2022
Machine Learning

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Explain the Find-S algorithm with example. **(06 Marks)**

b. Explain the various stages involved in designing a learning system in brief. **(10 Marks)**

c. Explain List-then-Eliminate algorithm. **(04 Marks)**

OR

2 a. What do you mean by well posed learning problem? Explain with any two examples. **(06 Marks)**

b. Describe the candidate elimination algorithm explain its working taking the instances given below:

Ex	Sky	Air temp	Humidity	Wind	Water	Fore cost	Enjoy sport
1	Sunny	Warm	High	Strong	Cold	Change	+ve
2	Rainy	Cold	High	Strong	Warm	Change	-ve
3	Sunny	Warm	High	Strong	Warm	Same	+ve
4	Sunny	Warm	Normal	Strong	Warm	Same	+ve

(10 Marks)

c. List the issues in Machine Learning. **(04 Marks)**

Module-2

3 a. Explain Irwin model in brief. **(10 Marks)**

b. Explain Dugdale's approach in brief. **(10 Marks)**

OR

4 a. Explain stress intensity factor in brief. **(10 Marks)**

b. Explain the concept of plain strain fracture toughness in brief. **(10 Marks)**

Module-3

5 a. Draw the perceptron network with the notations. Derive an equation of gradient descent rule to minimize the error. **(10 Marks)**

b. List the appropriate problems for Neural network learning. **(04 Marks)**

c. Explain the representation of neural network. **(06 Marks)**

OR

6 a. Define Artificial Neural Networks. Explain biological learning system. **(06 Marks)**

b. Explain back propagation algorithm in detail. **(10 Marks)**

c. Differentiate between single layer and Multilayer Neural Network. **(04 Marks)**

Module-4

7 a. Define Baye's theorem. Prove it with an example. **(10 Marks)**

b. Explain Brute-force Map learning algorithm in brief. **(10 Marks)**

OR

8	a.	Explain maximum likelihood and leas-squared error hypothesis in detail.	**(10 Marks)**
	b.	Explain Naïve Baye's classifier with example.	**(10 Marks)**

Module-5

9	a.	Write a short note on the following: i) Estimating hypothesis accuracy ii) Sample error iii) True error.	**(10 Marks)**
	b.	Discuss the method of comparing two algorithms.	**(10 Marks)**

OR

10	a.	Explain the basics of sampling theory.	**(10 Marks)**
	b.	Explain the difference in error of two hypotheses.	**(10 Marks)**

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