

7. Write notes on the following : 15

- (a) Ensemble methods
- (b) Adaptive dynamic programming
- (c) Curse of dimensionality.



Roll No.

Total Pages : 04

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B. Sc. (Maths and Comp.) (Sixth Semester)

Machine Learning-II (BCA-DS-23-308)

Time : 3 Hours]

[Maximum Marks : 75

Note : It is compulsory to answer all the questions (1.5 marks each) of Part A in short. Answer any *four* questions from Part B in detail. Different sub-parts of a question are to be attempted adjacent to each other.

Part A

1. (a) Differentiate between training and testing data. 1.5
- (b) Define Bias. 1.5
- (c) What is overfitting in Machine Learning ? 1.5

- (d) Explain the role of robotics in reinforcement learning. 1.5
- (e) State any *two* applications of PCA. 1.5
- (f) What is ICA ? 1.5
- (g) Define Delta rule. 1.5
- (h) What is Backpropagation ? 1.5
- (i) Define RNN. 1.5
- (j) What is Policy search ? 1.5

Part B

2. (a) What are different measures used for evaluating the machine learning algorithms ? Explain them. 10
- (b) Explain statistical learning theory and its significance in machine learning. 5

3. (a) Explain Linear Discriminant Analysis. 5
- (b) Explain Deep Learning and its applications. 10

4. What is the purpose of PCA ? Find the covariance matrix and Eigen values for the following data : 15

X1	4	8	13	7
X2	11	4	5	14

5. What is ANN ? Discuss its different types of architectures in detail. 15
6. (a) Discuss the elements of reinforcement learning with suitable examples. 10
- (b) Discuss generalization techniques in reinforcement learning. 5