



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – DATA SCIENCE

FIRST SEMESTER – NOVEMBER 2019

PDS 1505 – MACHINE LEARNING

Date: 07-11-2019
Time: 01:00-04:00

Dept. No.

Max. : 100 Marks

PART-A

Answer all Questions: -

(10 x 2 = 20)

1. Define Data Science.
2. State four advantages of supervised learning over unsupervised learning.
3. Define Sum of squared errors.
4. Differentiate between Decision Tree and Random Forest algorithm.
5. Define the following terms:
 - a. Tikhonov Regularization
 - b. Information Gain
6. What is the significance of SVM?
7. With an example of your own, define Logistic Regression.
8. What is binary classification?
9. How does Q-Learning work?
10. Identify the type of learning:
 - a. Analyzing the sentiment of users and predicting the sales of a brand.
 - b. Snap Chat recognizes the faces of you and your friend in a picture for filters.

PART-B

(5 x 8 = 40)

Answer all Questions:-

11. (a) Explain the steps followed to design the learning system.
(OR)
(b) Place your view on how and why machine learning plays a prominent role in today's real world.
12. (a) What is Clustering? Explain any two clustering algorithm in brief with an example.
(OR)
(b) Write a short note on Bagging. Why is it necessary to ensemble different methods of n learning?
13. (a) Illustrate SVM algorithm with an example in detail.
(OR)
(b) Explain how logistic regression is different from linear regression algorithm.
14. (a) What is Collaborative filtering? Explain in detail with an example of your own.
(OR)
(b) Describe Dimensionality Reduction.
15. (a) What is Reinforcement learning? Explain Q-Learning in detail.
(OR)
(b) Write a short note on following with a suitable example for each:
 - (i) Apriori
 - (ii) Upper Confidence Bound.

PART-C

Answer any TWO Questions:-

(2 x 20 = 40)

16. (a) What are the three types of learning? Explain in detail.
(b) Explain the system design for OLA application in detail.

17. (a) What is a Supervised learning? Explain with a real-time example.
(b) Discuss the working, advantages and disadvantages of supervised learning.

18. (a) Explain Simple linear with a suitable example of your own.
(b) What is Classification? Explain any one of the classification algorithms with an example.

