

Machine Learning Technique - 5 AD 02

P. Pages : 2

Time : Three Hours



AC - 3127

Max. Marks : 80

- Notes : 1. Assume suitable data wherever necessary.
2. Use of pen Blue/Black ink/refill only for writing the answer book.

1. a) Define Machine Learning and explain its need. 6
b) What do you mean by Validation? Explain the K fold cross validation technique. 7

OR

2. a) What are the two basic machine learning techniques? Explain any one of them. 6
b) Explain with an example Reinforcement learning. 7
3. a) Explain the singular value Decomposition algorithm for matrix factorization. 6
b) What do you mean by low rank approximation? Explain with an example. 8

OR

4. a) What is the need of feature selection? Explain any feature selection technique. 8
b) Explain the PCA technique. 6
5. a) Explain the single variable unconstrained optimization technique. 6
b) What is the need of optimization. Explain Newtons method for optimization. 7

OR

6. a) Explain the penalty function method for constrained optimization. 6
b) Explain the steepest descent method for optimization. 7
7. a) Explain the different types of Regression. 8
b) List the different evaluation metric for Regression and explain any one of them. 6

OR

8. a) Explain the multiple regression on technique. 8
b) What is the need of non linear regression? Explain. 6

9. a) What do you mean by classification? List the different to classification algorithms. 6
b) Explain the KNN algorithm for classification. 7

OR

10. a) What is a confusion matrix? Explain with an example. 7
b) Explain the SVM algorithm for classification. 6
11. a) What do you mean by clustering? Explain the different clustering techniques. 7
b) Explain the k means clustering algorithm. 6

OR

12. a) Explain Hierarchical clustering with an example. 7
b) Differentiate between Agglomerative and Divisive clustering. 6
