PC-2369

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B.E. (Computer Engineering)
MACHINE LEARNING
(2019 Pattern) (Semester - VII) (410242)

Time : 2 ½Hours]   *[Max. Marks : 70*
Instructions to the candidates:

    1)   *Answer Q.1 OR Q.2, Q.3 OR Q.4, Q.5 OR Q.6, Q.7 OR Q.8.*

    2)   *Figures to the right side indicate full marks.*

    3)   *Draw neat diagram wherever necessary.*

    4)   *Assume suitable data, if necessary.*

Q1) a)   Explain Lasso Regression. Explain how Lasso Regression is used for feature selection. **[6]**

    b)   Define different regression models. **[6]**

    c)   Describe the bias-variance trade-off and its relationship to under fitting and overfitting. **[6]**

OR

Q2) a)   Explain the advantages of RMSE over MSE as an evaluation metric. **[6]**

    b)   What do you mean by least square method? Explain least square method in the context of linear regression. **[6]**

    c)   Write a short note on Stochastic gradient descendent algorithms. **[6]**

Q3) a)   Explain kernel methods which are suitable for SVM. **[6]**

    b)   What are advantages and disadvantages of K-NN? **[6]**

    c)   What are different distance metrics are used in K-NN? **[5]**

Q4) a) What is Multi Class Classification? Explain the variants of Multi Class Classification. **[5]**

b) What are different techniques used for outlier handing? **[6]**

c) With suitable diagram, Explain Random forest Algorithm with example.**[6]**

Q5) a) Why K-medoid is used? Explain K-medoid algorithm. **[5]**

b) Why density based clustering is used? Explain any one. **[6]**

c) Cluster the following eight points (with (x, y) representing locations) into three clusters: **[6]**

P1(1, 3), P2(2, 2), P3(5, 8), P4(8, 5), P5(3, 9), P6(10, 7), P7(3, 3), P8(9, 4), P9(3, 7)

Use K-Means Algorithm to find the three cluster

OR

Q6) a) What is isolation factor model? **[5]**

b) Explain Hierarchical Clustering with an example. **[6]**

c) Micro-Average Precision and Recall, Micro-Average F-score, **[6]**

Q7) a) Explain Recurrent Neural Networks with an example. **[6]**

b) What are different activation function used in NN? **[6]**

c) What is multilayer perceptron? Describe with diagram. **[6]**

OR

Q8) a) Explain building blocks of RBF networks. **[6]**

b) What is personalized recommendation? What is content based recommendation? **[6]**

c) Explain the Convolution Neural Network (CNN) with suitable example.**[6]**

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