C

Reg. No. :

Question Paper Code: 59227

B.E./B.Tech. DEGREE EXAMINATION, NOV 2019

Elective

Computer Science and Engineering

15UCS927- MACHINE LEARNING ALGORITHMS

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Number of categories in Machine learning   CO1-U

    (a) 1   (b) 2   (c) 3   (d) 4

2. In statistics term, which represents the weighted average score   CO2- U

    (a) Variance   (b) Mean   (c) Median   (d) Mode

3. Which of the following is an example of ensemble learning algorithm?   CO3- U

    (a) Decision Tree   (b) SVM   (c) Random forest   (d) k-NN

4. In Competitive networks, output neurons are connected with_____   CO4- U

    (a) Each other   (b) Input Neurons   (c) Synapse   (d) None of the above

5. A Voronoi diagram is used in which type of clustering?   CO5- U

    (a) Hierarchical   (b) Partitioning   (c) Density based   (d) Intuition based

PART – B (5 x 3= 15 Marks)

6. Compare Lazy vs Eager learner.   CO1- U
7. Define Sampling with its variations.   CO2- U
8. Define hyper plane and support vector.   CO3- U
9. How learning rate value affects the weight updates in Back propagation. CO4- U
10. List out some applications of unsupervised learning.   CO5- U

PART – C (5 x 16= 80 Marks)

11. (a) Explain in detail the different types of Machine learning process in detail.   CO1- U   (16)

Or

    (b) Explain the performance measures used for evaluating the Machine learning Model.   CO1- U   (16)

12. (a) How Bayes theorem supports the concept learning principle?   CO2- U   (16)

Or

    (b) Explain Naïve Bayes classifier with an example   CO2- U   (16)

13. (a) Explain how k-NN algorithm is used for classification with example.   CO3-U   (16)

Or

    (b) Explain the concepts in support vector Machine.   CO3-U   (16)

14. (a) Design ANN for implementing logical OR, AND, NOT, NOR, NAND and XOR.   CO4-App   (16)

Or

    (b) (i) Use a simple perceptron with weights w0,w1 and w2 as -1,2,1 respectively, to classify data points (3,4);(5,2);(1,-3);(-8,-3),(-3,0).   CO4-App   (8)

    (ii) Explain in detail , how the set of data be classified using simple perceptron.   CO4-U   (8)

15. (a) Apply hierarchical clustering to the following 8 examples to convert into them into 3 clusters: A1=(2,10), A2=(2,5), A3=(8,4), A4=(5,8), A5=(7,5), A6=(6,4), A7=(1,2), A8=(4,9). Assume the initial seeds are A1,A4,A7.   CO5-App   (16)

Or

    (b) Explain hierarchical clustering in detail.   CO5-U   (16)

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