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**Question Paper Code: 95R05**

M.E. DEGREE EXAMINATION, NOV 2019

Elective

Computer Science and Engineering

19PCS505 - MACHINE LEARNING TECHNIQUES

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART - A (10 x 2 = 20 Marks)

- |     |                                                                        |        |     |
|-----|------------------------------------------------------------------------|--------|-----|
| 1.  | What is generalization in machine learning?                            | CO1- U | (2) |
| 2.  | What are the three stages to build the hypotheses in machine learning? | CO1- U | (2) |
| 3.  | What are the two classification methods that SVM can handle?           | CO2- U | (2) |
| 4.  | What are the advantages and disadvantages of decision trees            | CO2- U | (2) |
| 5.  | Define a k-Means Algorithm.                                            | CO3- U | (2) |
| 6.  | How does Deep Learning differ from Machine Learning?                   | CO3- U | (2) |
| 7.  | What is batch statistical learning?                                    | CO4- U | (2) |
| 8.  | Why ensemble learning is used? When to use ensemble learning?          | CO4- U | (2) |
| 9.  | What is meant by passive and active reinforcement learning method ?    | CO5- U | (2) |
| 10. | Define active learning ?                                               | CO5- U | (2) |

PART - B (5 x 16 = 80 Marks)

11. (a) What is the difference between supervised and unsupervised machine learning with an example. CO1-U (16)

Or

- (b) Describe about training and testing data more clearly with an example? CO1-U (16)

12. (a) Explain Support Vector Classification in detail. CO2-U (16)

Or

- (b) Explain and apply Support vector machine classifier for the following data points and labels:  
 $X = \{ (1,2), (-1,2), (-1,-2) \}$   $Y = \{-1, -1, 1\}$ . CO2-U (16)

13. (a) How does the K- Nearest-Neighbors algorithm work? CO3- U (16)
- Or
- (b) Explain Feature Learning concept briefly. CO3- U (16)
14. (a) Explain in detail how to evaluate machine learning algorithm. CO4-U (16)
- Or
- (b) Explain Ensemble learning technique in Machine Learning. CO4-U (16)
15. (a) Explain active learning in unknown environment. CO5- U (16)
- Or
- (b) Explain passive learning in known environment. CO5- U (16)