Total No. of Questions : 8]

SEAT No. : [ ]

P6752

[Total No. of Pages : 2

[6181] - 340

B.E. (Honours in Artificial Intelligence & Machine Learning)
MACHINE LEARNING
(2019 Pattern) (Semester - VII) (410301)

Time : 2 ½ Hours] ***[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) ***Neat diagrams must be drawn wherever necessary.***
3) ***Use of logarithmic tables slide rule mollier charts electronic pocket calculator steam tables allowed.***
4) ***Assume suitable data if necessary.***

Q1) a) What is random Forest? Explain following w.r.t random forest. **[8]**

i) Bias

ii) Variance

b) State and explain different types of kernel functions in SVM? **[9]**

OR

Q2) a) Define SVM and explain SVM as a Penalization Method in detail. **[9]**

b) What is random Forest? Write an algorithm for random forest. **[8]**

Q3) a) Explain Bayesian View of Learning and Dimensionality Reduction neural network. **[9]**

b) How to train a perceptron? State the reasons while perceptron training why instances are given one by one instead of whole samples. **[9]**

OR

Q4) a) What are two paradigms for Parallel Processing of neural network. State the scenario when to use which type of paradigm. **[9]**

b) Draw and explain, Bayesian network with suitable example. **[9]**

P.T.O.

Q5) a) Using K-means clustering algorithm, cluster following data into two cluster. {2, 4, 10, 12, 3, 20, 30, 11, 15} Explain each step in detail. **[9]**

b) A database has five transactions, min sup=40% and confidence=40%. **[8]**

TID	Items Bought
T1	A,B,C
T2	A,B,C,D,E
T3	A,C,D
T4	A,C,D,E
T5	A,B,C,D

Find all frequent itemsets using Apriori algorithm.

OR

Q6) a) Write short note on: **[8]**

i) Self-Organizing Maps

ii) PCA-Spectral Clustering

b) What is hierarchical clustering? Explain two strategies for hierarchical clustering in detail. **[9]**

Q7) a) Why is naive Bayesian classification called "naive"? Explain naive Bayesian classification algorithm in detail. **[9]**

b) What is regression? Explain Linear regression with example. **[9]**

OR

Q8) a) What is regression and state its applications. Find linear regression equation for the following two sets of data: **[9]**

X	2	4	6	8
Y	3	7	5	10

b) Explain finding state sequence and model selection in HMM detail. **[9]**

❄ ❄ ❄