

Total No. of Questions : 10]

SEAT No. :

P2058

[Total No. of Pages : 2

[5059]-663

B.E. (I.T.)

MACHINE LEARNING
(2012 Pattern) (End Semester)

Time : 2.30 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Draw neat diagrams wherever necessary.*
- 2) *Assume suitable data, if necessary.*
- 3) *Figures to the right indicate full marks.*

Q1) a) Explain logical models. State examples. **[5]**

b) What is a perceptron? Explain with the help of an example. **[5]**

OR

Q2) a) With an example, explain feature as a split and feature as a predictor. **[5]**

b) Calculate accuracy, precision and recall for the following : **[5]**

	Predicted +	Predicted –
Actual +	60	15
Actual –	10	15

Q3) a) When is it suitable to use linear regression over classification? **[5]**

b) State formulae for calculating accuracy, true positive rate, true negative rate, false positive rate and false negative rate for binary classification tasks. **[5]**

OR

Q4) a) Explain training dataset, test dataset and supervised learning. **[5]**

b) Why do we need to regularize in regression? Explain. **[5]**

P.T.O.

Q5) a) Explain four distance function. Name any machine learning task which uses distance functions. [9]

b) Write a note on clustering trees. [9]

OR

Q6) a) Write a note on subgroup discovery. [9]

b) Explain single linkage, complete linkage and average linkage. [9]

Q7) a) Is Naïve Bayes algorithm supervised or unsupervised task? Explain how it achieves the task you specified. [8]

b) Write a note on normal distribution. [8]

OR

Q8) a) What is multivariate Bernoulli distribution? [8]

b) Using the following data, find 2-item-itemsets which have minimum support = 2. [8]

Transaction	Items
1	nappies
2	beer, crisps
3	apples, nappies
4	beer, crisps, nappies
5	apples
6	apples, beer, crisps, nappies
7	apples, crisps
8	crisps

Q9) a) Write a note on reinforcement learning. [8]

b) Write a note on On-line learning. [8]

OR

Q10) a) Write a note on Deep Learning. [8]

b) Write a note on ensemble learning. [8]

