

Oct.-16/BE/Insem.- 160
B.E. (I.T)
MACHINE LEARNING (Semester - I)
(2012 Pattern)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

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

- Q1)** a) Write a note on training dataset and test dataset. [5]
 b) Explain feature construction and transformation techniques. [5]

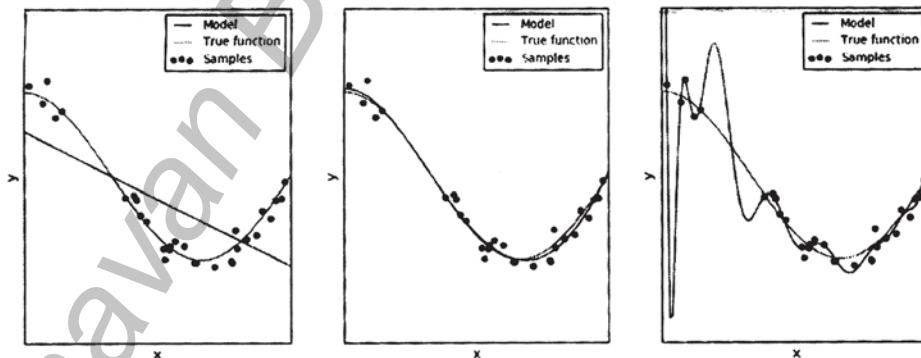
OR

- Q2)** a) What is supervised, unsupervised and semi-supervised learning? [5]
 b) Enlist ingredients of ML. Explain each ingredient in two or three sentences. [5]

- Q3)** a) What is VC dimension? Show that VC dimension of a line is 3. [5]
 b) Explain any 5 binary classification performance evaluation parameters (excluding accuracy and error rate). [5]

OR

- Q4)** a) [5]



(a) Degree 1

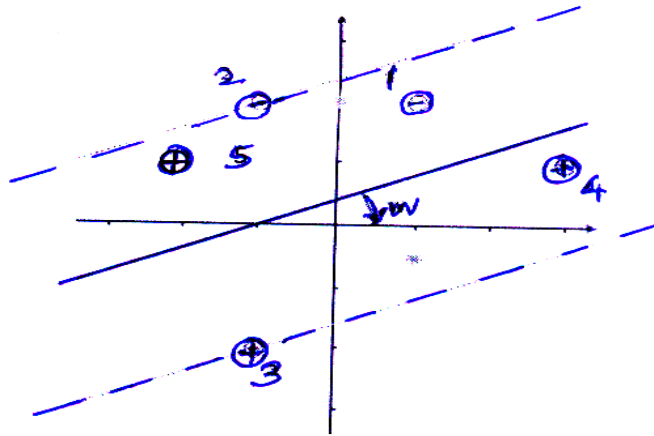
(b) Degree 4

(c) Degree 15

Which one of these is underfit and overfit? Why? Comment with respect to bias and variance.

- b) Explain class probability estimation. [5]

- Q5) a)** What is multivariate regression? [5]
- b)** From the following diagram, identify which data points (1,2,3,4,5) are support vectors (if any), slack variables on correct side of classifier (if any) and slack variables on wrong side of classifier (if any). Mention which point will have maximum penalty and why? [5]



OR

- Q6) a)** Explain the difference between ridge regression and lasso. [5]
- b)** What do you mean by zero-centering? [5]

