

Total No. of Questions : 4]

SEAT No. :

**PB-614**

[Total No. of Pages : 2

**[6269]-444**

**T.E. (Computer Engineering) (Insem.) (Honors)  
STATISTICS AND MACHINE LEARNING  
(2019 Pattern) (Semester - II) (310503)**

*Time : 1 Hour]*

*[Max. Marks : 30*

*Instructions to Candidates:*

- 1) *Answer Q1 or Q2, Q3 or Q4.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data, if necessary.*

**Q1) a)** Explain the following tests. **[7]**

- i) Chi-square test
- ii) t-test

also explain Pearson's Correlation Coefficient.

- b) Explain measure of dispersion. Find the mean deviation of mean, variance and standard deviation for given sample data  $x = (15, 22, 27, 11, 9, 21, 14, 9)$ . **[8]**

OR

**Q2) a)** What is Hypothesis testing, elaborate on the steps of hypothesis testing and the types of Hypothesis testing? **[7]**

- b) What is statistical inference, give a brief on importance of statistical inference in Machine Learning, also differentiate between Inferential and Descriptive Statistics. **[8]**

**Q3) a)** With the help of example explain different types of probabilistic Models and give their applications, what are hidden variables in a probabilistic model. **[7]**

- b) What is Z-score, find the Z-score if  $x = \{3, 13, 8, 21, 17, 11\}$  **[8]**

OR

**Q4) a)** What is Naive bayes classifier explain with the help of an example and give its application. [7]

**b)** What is linear Regression, Find the line of regression for the following data: [8]

X	2	4	6	8
Y	3	5	7	10

