Total No. of Questions : 8]

SEAT No. :

PB-4024

[Total No. of Pages : 2

[6262]-377
T.E. (Computer Engineering) (Honors)
DATA SCIENCE
Statistics and Machine Learning
(2019 Pattern) (Semester - II) (310503)

Time : 2½ Hours] ***[Max. Marks : 70***

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.***
2) ***Neat diagrams must he drawn whenever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data if necessary.***
5) ***Use of Scientific Calculator is permitted.***

Q1) a) Explain the concept of Partial Derivatives with example. **[9]**

b) What is the significance of chain rule in calculus? Explain chain rule with suitable example. **[9]**

OR

Q2) a) What is Linear Algebra? How to represent the systems of linear equations using matrices. **[9]**

b) Explain eigen values and eigenvectors with suitable example. **[9]**

Q3) a) Explain with examples : **[8]**

i) Unsupervised learning

ii) Supervised learning.

b) How Reinforcement learning can be applicable in games. Explain with suitable example. **[9]**

OR

Q4) a) What is Machine Learning? Describe Well posed learning problems. **[8]**

b) Explain different perspectives and issues in machine learning. **[9]**

P.T.O.

Q5) a) Explain gradient descent terms with respect to linear regression algorithm. **[9]**

b) What is multivariable regression explain with suitable example? **[9]**

OR

Q6) a) What is Regression? What are the different types of Regression mode explain in details. **[9]**

b) What are the limitations of multivariable Logistic Regression? Explain Growing complexity of Multivariable regression. **[9]**

Q7) a) Explain Classification and Regression Trees with example. **[8]**

b) Explain working of Naive Bayes Classifier? What are types of Naive Bayes classifier. Explain in brief. **[9]**

OR

Q8) a) What are advantages and disadvantages of Naive Bayes model. Describe applications of Naive Bayes model. **[8]**

b) Explain hypothesis space search in decision tree learning. Give suitable example. **[9]**