Total No. of Questions : 8]

SEAT No. :

PA-1623

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T.E. (Computer Engineering) (Honors/Minors)
DATA SCIENCE
DATA SCIENCE AND VISUALIZATION
(2019 Pattern) (Semester - I) (310501)

Time : 2½ 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) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data, if necessary.***

Q1) a) What is Linear regression? List the applications where linear regression can be applied? **[6]**

b) State and explain how Naïve Bays classifier can be used to solve the classification problems? **[6]**

c) Write a note on association rules. **[6]**

OR

Q2) a) What is clustering? Explain K-means clustering algorithm. **[6]**

b) Explain Apriori Algorithm used in machine learning with valid example. **[6]**

c) Illustrate how will you evaluate association rules. **[6]**

Q3) a) State and explain the different constituents of the decision tree. **[9]**

b) Write a note on the perceptron model. **[8]**

OR

Q4) a) When do you use Backpropagation in Neural Networks? Explain by taking a suitable example. **[9]**

b) What is entropy? How entropy is calculated explain with a suitable example. **[8]**

P.T.O.

Q5) a) Define the term Dashboard along with its evolution and steps to design the dashboard. **[9]**

b) Write a note on: **[9]**

i) Pie charts

ii) Bar graphs

iii) Scatterplots

OR

Q6) a) Explain the terms Network hierarchies and reports associated with data visualization. **[6]**

b) Write a note on advanced visualization techniques and explain anyone of them. **[6]**

c) Write a note on 'display media for Dashboard. **[6]**

Q7) a) What are different types of data model explain in brief. **[6]**

b) List the advantages of multi-dimensional data model? **[6]**

c) Discuss the challenges of clustering High-dimensional data. **[5]**

OR

Q8) a) Explain the need of data modelling. **[6]**

b) Explain multidimensional data model with one example. **[6]**

c) What do you mean by Principal Component Analysis? **[5]**

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