

Total No. of Questions : 12]

SEAT No. :

P9480

[6182]-799

[Total No. of Pages : 2

**M.E. (Computer Engineering)/(Artificial Intelligence and Data
Science)/(Master of Data Science)**

**BASICS OF DATA SCIENCE
(2017 Pattern) (Semester - I) (510302)**

Time : 3 Hours]

[Max. Marks : 50

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, Q.9 or Q.10, Q.11 or Q.12.*
- 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 data science? Explain following steps involved in data science. **[5]**

- i) Data Exploration
- ii) Data Modelling

b) What is the role of a Data Scientist in the industry? **[4]**

OR

Q2) a) Explain the various types of data. **[4]**

b) What is big data? Explain characteristics of big data. **[5]**

Q3) While analyzing data, it is important to prepare the data in a format appropriate for analysis of the samples. State and explain steps involved in data preparation with example. **[8]**

OR

Q4) Explain following continuous distribution function in detail. **[8]**

- i) Gaussian distribution
- ii) Exponential distribution

Q5) What is naïve bayes classifier? Why is it called as naïve? Write how naïve bayes classifier works and explain with example. **[9]**

OR

Q6) Write kNN algorithm and explain with example. Also, state the cons of the kNN algorithm. **[9]**

P.T.O.

Q7) What is data visualization? Explain where it is used for? [8]

OR

Q8) What are the different types of data visualization? Explain any four of them. [8]

Q9) What is a recommender system? Explain long tail phenomenon in recommendation system. Also, state the applications of recommendation system. [8]

OR

Q10) How does content based recommendation system work? State pros and cons of content based recommendation system. [8]

Q11) Explain Social Networks as Graphs and following varieties of social networks. [8]

- i) Collaboration Networks
- ii) Email Networks

OR

Q12) Write Girvan-Newman algorithm and explain with example. [8]

