

Total No. of Questions : 12]

SEAT No. :

P6578

[Total No. of Pages : 2

[5872]-411

**M.E. (Computer Engineering)**  
**BASICS OF DATA SCIENCE**  
**(2017 Pattern) (Semester - I) (510302)**

*Time : 3 Hours]*

*[Max. Marks : 50*

*Instructions to the candidates:*

- 1) Solve Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10, Q11 or Q12.*
- 2) Neat diagrams must be drawn whenever necessary.*
- 3) Figures to right indicate full marks.*
- 4) Assume suitable data, if necessary.*

**Q1)** a) What is the role of a Data Scientist in the industry? [5]

b) Explain the following data types with examples [4]

i) Structured and Unstructured Data

ii) Quantitative and Categorical Data

OR

**Q2)** What is data science? Explain the data science process. [9]

**Q3)** What is Spearman's rank correlation? Calculate the Spearman's rank correlation for the following data and discuss the relationship between sub1 and sub2.

[8]

Roll no	Sub 1	Sub 2
1	35	24
2	20	35
3	49	39
4	44	48
5	30	45

OR

**Q4)** Define exploratory data analysis. Explain with an example. [8]

*P.T.O.*

**Q5)** What is simple linear regression? Explain with example. [8]

OR

**Q6)** Write K-nearest Neighbours algorithm. Explain with an example. [8]

**Q7)** a) What is visual encoding in data? Why is it important? [4]

b) Explain types of Data Visualisation. [5]

OR

**Q8)** Explain following bivariate data visualization techniques. [9]

a) Line plot

b) Bar plot

c) Scatter plot

**Q9)** What is recommender system? Explain any one type of recommender system with example. [8]

OR

**Q10)** Explain following similarity with example. [8]

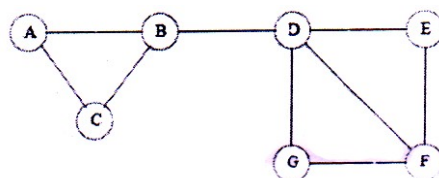
a) Jaccard similarity

b) Pearson similarity

**Q11)** Explain Girvan-Newman Algorithm with example. [8]

OR

**Q12)** Calculate the credit of each edge in Girvan-Newman Algorithm for following graph. Start with vertex E. [8]



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