

Question Bank

Subject: Honors – Data Science and Visualization (DSV)
Class: TE Computer Engineering

Academic Year: 2025-26
Semester-V

Unit – I : Introduction to Data Science

- Q1] What is data science? What are the main components of data science?
- Q2] What is big data? How does big data relate to data science?
- Q3] Differentiate between following types of data in data science?
- a) Quantitative & Qualitative Data (04 Points)
 - b) Nominal & Ordinal Data (04 Points)
- Q4] Illustrate the main steps in the data science process with suitable example ?
- Q5] Define Machine Learning and explain its role in the process of data science.
- Q6] What is Exploratory Data Analysis (EDA)? What role does data visualization play in data science?
- Q7] What is the difference between supervised and unsupervised machine learning?
- Q8] What is big data in the context of data types in Machine Learning?
- Q9] Compare the Time Series data and Spatial data types with examples.
- Q10] What are the set of skills which are essential for a data scientist.?

Unit - II : Statistics and Probability basics for Data Analysis

- Q1] Why is statistics important in data science? Compare Descriptive & Inferential statistics?
- Q2] Write Short Note On;
- a) Discrete Random Variable
 - b) Continuous Random Variable
- Q3] What is the difference between population and sample?
- Q4] What is probability, what is its role in data science?
- Q5] What is the difference between variance and standard deviation? Give examples.
- Q6] What is the concept of Bayes' Theorem? Give its applications in real-world.
- Q7] Give difference of causation vs. correlation? Explain with suitable example.
- Q8] What is correlation? Give examples of Positive and Negative Correlation.
- Q9] What is the Central Limit Theorem (CLT)? Explain with suitable example.
- Q10] Explain following types of distributions used in data science?
- a) Normal distribution
 - b) Binomial distribution