Class 8

Chapter - 10

Data Science

A. Tick (✓) the correct option.

1. Which of the following is considered data?
a. Speech b. Video c. Messages d. All of the above

Answer: d. All of the above
Explanation: Any form of information that can be stored or processed (sound, video, text messages) is data.

2. How is data used in the entertainment industry?
a. Predicting interests b. Targeting ads c. Both of the above d. None of these

Answer: c. Both of the above
Explanation: Platforms use data to guess what users like (predict interests) and to show suitable advertisements.

3. "What a nice day it is" is what kind of data?
a. Quantitative b. Qualitative c. Discrete d. Both (a) and (b)

Answer: b. Qualitative
Explanation: It describes quality/feeling, not numbers, so it is qualitative data.

4. Data science is the future of:
a. Research b. Machine Learning c. Artificial Intelligence d. Internet of Things

Answer: a. Research
Explanation: In your textbook context, data science is mainly presented as the future of research because modern research in every field depends heavily on data analysis.

5. You want to build a way to segregate spam emails from good emails. Which algorithm will you use?
a. Clustering b. Regression c. Anomaly detection d. Binary classification

Answer: d. Binary classification
Explanation: There are only two classes: "spam" and "not spam", so it is a binary classification problem.

Fill in the blanks

(Hints: Big Data, Data Science, Data, Raw Facts, Continuous, Figures)

1. ***Data*** are the facts or bits of information that come from observations. It can be numbers or words.
2. Data consists of **Raw Facts** and **Figures**.
3. Meters, centimetres, millimetres and etc. are examples of **Continuous** data.
4. **Data Science** is a process in which the goal is to make better choices.
5. **Big Data** is a collection of data that is huge in volume.

Write T for true and F for false.

1. Discrete data can take any value in a range. – **F**
   Explanation: Only continuous data can take any value in a range; discrete data takes fixed separate values.
2. Information stored in a PDF is not considered data. – **F**
   Explanation: Anything that carries information (even a PDF file) is data.
3. Continuous data cannot take decimal values. – **F**
   Explanation: Continuous data can take decimal and fractional values.
4. Qualitative data is descriptive in nature. – **T**
   Explanation: It describes qualities or categories (good, bad, red, blue, etc.).
5. To make better choices, data should be collected to properly analyse the situation. – **T**
   Explanation: Good decisions are based on proper collection and analysis of data.

Answer the following questions.

1. What do you mean by data? Give two examples of real-life applications of data.
Answer: Data are raw facts or pieces of information collected from different sources.
Examples:

- Schools use students' marks data to prepare report cards.
- Weather departments use temperature and rainfall data to forecast the weather.

2. What does a Data Architect do?
Answer: A Data Architect designs and organises how data will be stored and managed in an organisation—planning databases, data flow, security, and making sure the right people can get the right data.

3. How is data used by online streaming platforms?
Answer: They collect data such as what you watch, how long you watch and your likes/dislikes, then use it

to recommend movies or shows, personalise your home page, and decide which content to produce or promote.

4. What are the common career paths for data science?
Answer:

- Data Analyst
- Data Scientist
- Data Engineer
- Machine Learning Engineer
- Business/Data Consultant

(All involve working with data to solve problems and support decisions.)

5. Mention any two advantages of Data Science.
Answer:

1. Helps in better decision-making by finding patterns and trends in data.
2. Provides personalised services (for example, recommendations on shopping and streaming apps), improving user experience.

These answers are only for your reference, you can write your own answers