Public Library · FBISE / NBF

Computer Science Grade 9 — Chapter 4

Data and Analysis

by Public Library

Independent practice MCQs from the supplied Class 9 Computer Science notes pack. Total: 50 questions. Each item has four options, the correct letter, and a short explanation.

A. Important / Main Topics

1. What is the process of examining raw data to draw conclusions?

(A) Data Analytics
(B) Data Science
(C) Machine Learning
(D) Big Data

Correct Answer: A

Explanation: Data analytics is the process of examining raw data to draw conclusions about the information it contains.

2. Which field uses mathematics, statistics, data analysis, and machine learning to extract knowledge from data?

(A) Data Analytics
(B) Data Science
(C) Database Management
(D) Computer Networking

Correct Answer: B

Explanation: Data Science is an interdisciplinary field that uses mathematics, statistics, data analysis, and machine learning to analyze data and extract knowledge.

3. What is a structured or organized collection of data usually associated with a unique body of work?

(A) Database
(B) Data Warehouse
(C) Dataset
(D) Data Mining

Correct Answer: C

Explanation: A dataset is a structured or processed collection of data usually associated with a unique body of work.

4. Which type of data describes an object or group of objects that can be labeled according to a category?

(A) Quantitative Data
(B) Discrete Data
(C) Continuous Data
(D) Qualitative Data

Correct Answer: D

Explanation: Qualitative or Categorical data describes an object or a group of objects that can be labeled according to some group or category.

5. What is the characteristic of ordinal data?

(A) Has a specific order or ranking
(B) No order or ranking
(C) Can only take certain values
(D) Can take any value within a range

Correct Answer: A

Explanation: Ordinal data sees a specific order or ranking. It uses a certain scale or measure to group data into categories.

6. Which data type deals with numeric values that can be computed mathematically?

(A) Qualitative Data
(B) Quantitative Data
(C) Categorical Data
(D) Nominal Data

Correct Answer: B

Explanation: Quantitative or Numerical data deals with numeric values that can be computed mathematically to draw conclusions.

7. What is the term for data that can only take certain values and cannot be subdivided?

(A) Continuous Data
(B) Ordinal Data
(C) Discrete Data
(D) Nominal Data

Correct Answer: C

Explanation: Discrete data includes data which can only take certain values and cannot be further subdivided into smaller units.

8. Which of the following is an example of continuous data?

(A) Number of students in a class
(B) Number of cars in a parking lot
(C) Number of employees in a company
(D) Weight of newborn babies

Correct Answer: D

Explanation: Continuous data refers to the unspecified number of possible measurements between two realistic points. Weight is an example.

9. What is the primary characteristic of Big Data?

(A) Large volume, high velocity, wide variety
(B) Small volume, slow velocity, limited variety
(C) Medium volume, medium velocity, limited variety
(D) Small volume, high velocity, wide variety

Correct Answer: A

Explanation: Big Data is characterized by the three Vs: Volume, Velocity, and Variety.

10. Which of the following is a source of primary data?

(A) Government records
(B) Surveys and interviews
(C) Research papers
(D) Books

Correct Answer: B

Explanation: Primary data is collected directly by questionnaires, surveys, and interviews.

11. What does the "V" in the three Vs of Big Data stand for?

(A) Value, Velocity, Variety
(B) Volume, Verification, Variety
(C) Volume, Velocity, Variety
(D) Volume, Velocity, Validation

Correct Answer: C

Explanation: The three Vs of Big Data are Volume, Velocity, and Variety.

12. Which of the following is a non-relational database?

(A) Oracle
(B) MS-Access
(C) IBM Db2

(D) MongoDB

Correct Answer: D

Explanation: Non-relational databases store data in forms such as key-value pairs, column families, or graphs. MongoDB is an example.

13. What is the name of the database management system that manages relational databases?

(A) DBMS
(B) NoSQL
(C) RDBMS
(D) SQL

Correct Answer: A

Explanation: DBMS is the interface between the database and the end user, providing a platform to create, modify, and retrieve data.

14. What is the purpose of summary statistics?

(A) To store data permanently
(B) To provide a quick overview of characteristics of data
(C) To create visualizations
(D) To delete data

Correct Answer: B

Explanation: To provide a quick overview of characteristics of data — this correctly answers the question.

15. Which of the following is a data source mentioned in the chapter?

(A) Websites
(B) Surveys
(C) All of the above
(D) Sensors

Correct Answer: C

Explanation: Websites, surveys, and sensors are all sources of data mentioned in the chapter.

16. What is the difference between interval and ratio scaled data?

(A) Interval data has no order; ratio data has order
(B) Interval data is qualitative; ratio data is quantitative
(C) Ratio data cannot be added or subtracted
(D) Ratio data has a true zero point; interval data does not

Correct Answer: D

Explanation: Ratio scaled data has a true zero point (e.g., 0 Kg means absence of weight), while interval scaled data does not (e.g., 0°C does not mean absence of temperature).

17. Which database management system is an example of a relational database?

(A) MySQL
(B) MongoDB
(C) Cassandra
(D) Redis

Correct Answer: A

Explanation: MySQL — this correctly answers the question.

18. Which of the following is NOT a source of secondary data?

(A) Government records
(B) Interviews
(C) Research papers
(D) Books

Correct Answer: B

Explanation: Interviews are a primary data source, collected directly from respondents.

19. What is the key characteristic of Big Data's "Velocity"?

(A) The amount of data
(B) The various formats of data
(C) The speed at which data is received
(D) The cost of data storage

Correct Answer: C

Explanation: Velocity refers to the speed at which data is received and acted on.

20. Which type of data is "gender" (Male, Female, Other)?

(A) Ordinal Data
(B) Discrete Data
(C) Continuous Data
(D) Nominal Data

Correct Answer: D

Explanation: Nominal data does not have any order. Gender is an example of nominal data.

21. What is sentiment analysis used for?

(A) To identify customer sentiments from reviews
(B) To analyze numerical data
(C) To store data in databases
(D) To visualize data

Correct Answer: A

Explanation: To identify customer sentiments from reviews — this correctly answers the question.

22. What is the main difference between a dataset and a database?

(A) A dataset is larger than a database
(B) A dataset is a collection of data; a database is an organized collection of multiple datasets
(C) A database is a single table; a dataset is multiple tables
(D) They are the same thing

Correct Answer: B

Explanation: A dataset is a structured collection of data, while a database is an organized collection of data stored in multiple datasets or.

23. Which of the following is a characteristic of unstructured data?

(A) Organized in tables
(B) Stored in relational databases
(C) Not organized in a predefined format
(D) Easy to search using SQL

Correct Answer: C

Explanation: Unstructured data (like text, images, videos) is not organized in a predefined format and requires additional preprocessing.

24. What is predictive analysis?

(A) The process of storing data
(B) The visualization of data
(C) The collection of data
(D) The use of data to predict future trends based on historical data

Correct Answer: D

Explanation: Predictive analysis is the use of data to predict future trends and events based on historical data.

25. Which of the following is a challenge of Big Data?

(A) All of the above
(B) Data quality
(C) Data security and privacy
(D) Rapid growth of data

Correct Answer: A

Explanation: All of the above — this correctly answers the question.

B. Less Important / Secondary Topics

26. What is the role of a database in data science?

(A) To store and manage large amounts of data
(B) To visualize data
(C) To write code
(D) To create networks

Correct Answer: A

Explanation: Databases provide structured storage, quick retrieval, and reliable management of large data volumes, which are essential for data science.

27. Which of the following is a primary data collection method?

(A) Websites
(B) Interviews
(C) Government records
(D) Research papers

Correct Answer: B

Explanation: Interviews involve direct interaction with respondents and are a primary data collection method.

28. What is the purpose of data cleaning?

(A) To store data
(B) To visualize data
(C) To remove errors, duplicates, and inconsistencies from data
(D) To delete all data

Correct Answer: C

Explanation: Data cleaning ensures that data is accurate, consistent, and reliable before analysis.

29. Which of the following is an example of ordinal data?

(A) Gender
(B) City
(C) Color
(D) Test grades (A, B, C)

Correct Answer: D

Explanation: Ordinal data has a specific order or ranking. Test grades have a clear order from highest to lowest.

30. What is the difference between structured and unstructured data?

(A) Structured data is organized in tables; unstructured data is not
(B) Structured data is qualitative; unstructured data is quantitative
(C) Structured data is continuous; unstructured data is discrete
(D) They are the same

Correct Answer: A

Explanation: Structured data is organized in tables (rows and columns), while unstructured data (text, images, videos) is not organized in a predefined format.

31. Which of the following is a relational database?

(A) MongoDB
(B) Oracle
(C) Cassandra
(D) Redis

Correct Answer: B

Explanation: Oracle is a relational database management system that stores data in.

32. What is the main purpose of Big Data analytics in business?

(A) To store data in databases

(B) To create websites
(C) To make better business decisions by analyzing large volumes of data
(D) To design networks

Correct Answer: C

Explanation: To make better business decisions by analyzing large volumes of data — this correctly answers the question.

33. Which of the following is a source of data mentioned in the chapter?

(A) Websites
(B) Surveys
(C) Sensors
(D) All of the above

Correct Answer: D

Explanation: Websites, surveys, and sensors are all data sources mentioned in the chapter.

34. What is the difference between a database and a dataset?

(A) A database is an organized collection of data; a dataset is a collection of related data
(B) A database is a single table; a dataset is multiple tables
(C) A database is smaller than a dataset
(D) They are the same

Correct Answer: A

Explanation: A dataset is a structured collection of data, while a database is an organized collection of data stored in multiple datasets or.

35. Which of the following is a benefit of Big Data?

(A) Increased costs
(B) Better decision-making
(C) Slower processing
(D) Reduced storage

Correct Answer: B

Explanation: Big Data enables better decision-making by providing insights from large volumes of data.

36. A hospital collects data on patient temperatures: 98.6°F, 99.2°F, 100.1°F. What type of data is this?

(A) Discrete Data
(B) Nominal Data
(C) Continuous Data
(D) Ordinal Data

Correct Answer: C

Explanation: Temperature is continuous data because it can take any value within a range.

37. A survey asks respondents to rate a product on a scale of 1 to 5 (1 = Poor, 5 = Excellent). What type of data is this?

(A) Nominal Data
(B) Discrete Data
(C) Continuous Data
(D) Ordinal Data

Correct Answer: D

Explanation: Ordinal Data — this correctly answers the question.

38. A company wants to analyze customer feedback from social media. Which data type is this?

(A) Unstructured Data
(B) Structured Data
(C) Discrete Data
(D) Interval Data

Correct Answer: A

Explanation: Social media feedback (tweets, comments) is unstructured data.

39. A researcher needs to find the average income of households in a city. What type of data is income?

(A) Nominal Data
(B) Continuous Data
(C) Ordinal Data
(D) Discrete Data

Correct Answer: B

Explanation: Income is continuous data because it can take any value within a range.

40. A dataset contains the number of employees in different departments: 10, 15, 8, 12. What type of data is this?

(A) Continuous Data
(B) Nominal Data
(C) Discrete Data
(D) Ordinal Data

Correct Answer: C

Explanation: The number of employees is discrete data (coun.

41. A company wants to predict which customers are likely to churn (leave). What data science technique should they use?

(A) Data Visualization
(B) Data Mining
(C) Descriptive Analysis
(D) Predictive Analysis

Correct Answer: D

Explanation: Predictive analysis is used to predict future events like customer churn.

42. A supermarket wants to determine the best placement for products on shelves. What type of data analysis would help?

(A) Predictive Analysis
(B) Descriptive Analysis
(C) Prescriptive Analysis
(D) Diagnostic Analysis

Correct Answer: A

Explanation: Predictive Analysis — this correctly answers the question.

43. A government agency collects census data every 10 years. What type of data source is this?

(A) Primary Data
(B) Secondary Data
(C) Tertiary Data
(D) Real-time Data

Correct Answer: B

Explanation: Census data is collected by the government and is a secondary data source for others.

44. A student wants to analyze the relationship between study hours and exam scores. What type of data are study hours and exam scores?

(A) Qualitative Data
(B) Nominal Data
(C) Quantitative Data
(D) Ordinal Data

Correct Answer: C

Explanation: Study hours and exam scores are quantitative (numerical) data.

45. A company uses MongoDB to store customer data in flexible document format. What type of database is this?

(A) Relational Database
(B) Hierarchical Database
(C) Network Database
(D) Non-Relational Database

Correct Answer: D

Explanation: MongoDB is a non-relational (NoSQL) database.

46. A school wants to analyze student performance. They collect data on marks, attendance, and study hours. Which of the following is qualitative data?

(A) Grades (A, B, C)
(B) Marks
(C) Attendance
(D) Study hours

Correct Answer: A

Explanation: Grades are ordinal (qualitative) data, while marks, attendance, and study hours are quantitative.

47. Explain how Big Data can help a hospital improve patient care.

(A) By storing patient records
(B) By predicting epidemic outbreaks and monitoring patients in real-time
(C) By designing hospital buildings
(D) By hiring more staff

Correct Answer: B

Explanation: "By predicting epidemic outbreaks and monitoring patients in real-time" is correct: it matches the idea asked in the question ("Explain how Big Data can help a hospital improve patient care"), while the other choices do not.

48. A company wants to analyze customer sentiment from online reviews. What data science technique should they use and why?

(A) Data Mining; it finds patterns
(B) Predictive Analysis; it predicts future trends
(C) Sentiment Analysis; it identifies positive, negative, or neutral sentiments
(D) Data Visualization; it creates charts

Correct Answer: C

Explanation: Sentiment Analysis; it identifies positive, negative, or neutral sentiments — this correctly answers the question.

49. Differentiate between structured and unstructured data with examples.

(A) Structured data is qualitative; unstructured data is quantitative
(B) Structured data is continuous; unstructured data is discrete
(C) They are the same
(D) Structured data is organized in tables (e.g., student records); unstructured data is not (e.g., tweets)

Correct Answer: D

Explanation: Structured data is organized in tables, while unstructured data (tweets, images, videos) is not organized in a predefined format.

50. Why is data cleaning important before analysis? Explain with an example.

(A) It removes errors and ensures accurate analysis; e.g., removing duplicate customer records
(B) It stores data in databases; e.g., creating tables
(C) It visualizes data; e.g., creating charts
(D) It deletes all data; e.g., clearing the database

Correct Answer: A

Explanation: Data cleaning removes errors, duplicates, and inconsistencies, ensuring accurate analysis. For example, removing duplicate customer records prevents counting the same customer twice.