COMPUTER

Definitions

1. Data:
Raw facts and figures collected from the surroundings, which can be processed to get useful information.

2. Qualitative Data:
Data that describes qualities or characteristics and is non-numeric. Examples: colors, names, opinions.

3. Quantitative Data:
Data that is numerical and measurable. Examples: height, weight, test scores.

4. Nominal Data:
Qualitative data used for naming or labeling without any order. Example: types of fruits.

5. Ordinal Data:
Qualitative data with a meaningful order but unequal gaps. Example: shirt sizes (S, M, L).

6. Discrete Data:
Quantitative data with countable values (whole numbers). Example: number of books.

7. Continuous Data:
Quantitative data that can take any value in a range, including fractions or decimals. Example: height, weight.

8. Data Organization:
Arranging data neatly using tables, charts, and graphs for clear analysis.

9. Data Collection:
The process of gathering information to answer questions or make decisions.

10. Survey:
A method of collecting data by asking people questions.

11. Questionnaire:
A written set of questions to collect specific data from people.

12. Interview:
A method to collect data by talking to people one-on-one.

13. Observation:
A method to gather data by watching and recording behaviors or events.

14. Online Data Sources:
Websites and databases used to find digital information.

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15. What is data?

Answer:
Data is a collection of raw facts, such as numbers, words, images, or sounds, that can be processed to create useful information.

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16. Give two examples of data.

Answer:

1. Sales data showing product prices and quantities.
2. Social media data like likes and comments on a post.

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17. Why is understanding data important?

Answer:
It helps in understanding situations, solving problems, making better decisions, and supporting innovation.

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18. What are the main types of data?

Answer:
Data is mainly divided into:

1. Qualitative Data
2. Quantitative Data

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19. What is qualitative data? Give an example.

Answer:
Qualitative data describes characteristics or qualities and is non-numeric.
Example: Eye colors like brown, green, blue.

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20. What is quantitative data? Give an example.

Answer:
Quantitative data is numerical and measurable.
Example: A student's score of 85 in math.

---

21. What is nominal data?

Answer:
It is qualitative data used for labeling or naming without any order.
Example: Types of vehicles (car, bus, bike).

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22. What is ordinal data?

Answer:
Ordinal data is qualitative data arranged in meaningful order.
Example: Satisfaction level (high, medium, low).

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23. Define discrete data with example.

Answer:
Discrete data has separate, countable values.
Example: Number of students in a class.

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24. Define continuous data with example.

Answer:
Continuous data can have any value in a range, including fractions.
Example: Temperature readings like 22.5°C, 23.7°C.

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25. What operations can be performed on nominal data?

Answer:
You can group, count, and find the most frequent category (mode).

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26. What operations can be performed on ordinal data?

Answer:
You can group, rank, compare, and find median or frequency.

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27. What operations can be performed on discrete data?

Answer:
You can group, count, and do arithmetic operations like addition, subtraction, and find average and range.

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28. What operations can be performed on continuous data?

Answer:
You can do all operations on discrete data plus division, like calculating averages with fractions.

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29. Why is organizing data important?

Answer:
Organizing data reduces errors, saves time, and makes information easier to understand.

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30. What tools are used to organize data?

Answer:
Tables, charts (bar, pie, line), and graphs (scatter plots, histograms).

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31. What is data collection?

Answer:
Data collection is gathering information to answer questions or make decisions.

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32. Name any four data collection methods.

Answer:

1. Surveys
2. Questionnaires
3. Interviews
4. Observations

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33. What are surveys and how are they used?

Answer:
Surveys collect information by asking people questions.
Example: Asking students their favorite fruit using a form.

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34. What is a questionnaire?

Answer:
A questionnaire is a written form of a survey with multiple questions to collect specific data.

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35. What is the difference between an interview and an observation?

Answer:

- Interview: Collecting data by talking to people directly.
- Observation: Collecting data by watching events or behaviors.

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36. What are online data sources?

Answer:
They are websites or digital tools that provide useful information and statistics, like Google or Wikipedia.

Definitions (Continued)

37. Gathering Data from Online Sources:
The process of finding, collecting, and combining useful information from websites and digital platforms to answer questions or complete tasks.

38. Extracting Data:
Taking out important or needed information from a large source (like a website or article).

39. Integrating Data:
Combining data from different sources into one clear and useful format or report.

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40. What is meant by gathering data from online sources?

Answer:
It means searching websites and online platforms to collect useful information for school projects, research, or decision-making.

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41. What are some examples of online data sources?

Answer:
Examples include:

- News websites
- Educational databases
- Government portals
- Google, Wikipedia
- Social media platforms

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42. How can we use online data in school projects?

Answer:
We can search for statistics, articles, and facts from reliable websites, extract useful parts, and combine them into our project or report to support our answers or ideas.

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43. What steps are involved in using online sources effectively?

Answer:

1. **Search** – Look for trusted websites.
2. **Gather** – Save or copy useful information.
3. **Extract** – Pick out only the relevant data.
4. **Integrate** – Combine it in a report or presentation.

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44. Give an example of using online data in a real-life scenario.

Answer:
If you want to study the effect of social media on teenagers, you can search online for surveys, expert opinions, and statistics, extract useful points, and create a report using that data.

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45. Why is it important to choose reliable online sources?

Answer:
Reliable sources provide correct, accurate, and up-to-date information. Using trusted sources ensures your research is based on facts, not opinions or false data.

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46. Name three tools for collecting data online.

Answer:

1. **Google Forms** – For making surveys and collecting responses.
2. **Microsoft Forms** – For surveys and quizzes.
3. **SurveyMonkey** – For creating professional online surveys.

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47. What are some best practices while using online sources for data collection?

Answer:

- Use trustworthy websites
- Avoid copying everything; extract only what's useful
- Give credit to original sources
- Do not use outdated or fake data

◆ 9.4 Data Visualization

Definitions

48. Data Visualization:
The process of presenting data in visual formats like charts, graphs, and diagrams to make complex data easier to understand.

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49. What is data visualization?

Answer:
Data visualization is the use of visuals such as charts and graphs to represent data clearly and help people understand trends, comparisons, or patterns in the data.

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50. Why is data visualization important?

Answer:
It makes data easier to understand, helps to spot trends, compare results, and make decisions based on what the visuals show.

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51. Name some common types of charts used in data visualization.

Answer:

1. Bar Charts
2. Line Charts
3. Pie Charts
4. Histograms
5. Scatter Plots

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52. Give an example of using data visualization.

Answer:
A pie chart showing the percentage of students who prefer different school subjects: 40% like science, 30% like math, 20% like English, and 10% like others.

◆ 9.5 Collaborative Tools and Cloud Computing

Definitions

53. Collaborative Tools:
Software and platforms that help people work together online, such as sharing documents, having meetings, or managing projects.

54. Cloud Computing:
Using internet-based services to store, manage, and process data instead of relying on a personal computer.

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55. What are collaborative tools?

Answer:
Collaborative tools are digital platforms like Google Docs, Microsoft Teams, and Zoom that help people work together from different locations by sharing files, chatting, or holding meetings.

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56. What is cloud computing?

Answer:
Cloud computing is using internet services to store and process data instead of using your own computer's hard drive. Examples include Google Drive, Dropbox, and OneDrive.

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57. What are the benefits of cloud computing?

Answer:

- Access files from anywhere
- Work with others easily
- Save storage space
- Backup data securely

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58. Give an example of using collaborative tools in a school project.

Answer:
A group of students can work on a shared Google Docs file at the same time to prepare a class presentation.

◆ 9.6 Ethical Issues in Data Handling

Definitions

59. Ethics in Data Handling:
Following rules and principles to make sure data is collected, stored, and used in a fair, honest, and legal way.

60. Data Privacy:
Keeping personal and sensitive information safe from misuse.

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61. What are ethical issues in data handling?

Answer:
Ethical issues include privacy, security, and honesty in collecting and using data. It is wrong to misuse or share someone's personal data without permission.

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62. What is data privacy?

Answer:
Data privacy means keeping people's personal information secure and not sharing it without their consent.

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63. Give an example of unethical use of data.

Answer:
Selling user email addresses to advertisers without their permission is unethical.

◆ 9.7 Introduction to Data Science

Definitions

64. Data Science:
A field that combines computer science, statistics, and knowledge to analyze large amounts of data and discover useful insights.

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65. What is data science?

Answer:
Data science is the study and practice of analyzing large sets of data using tools and techniques to find patterns and make decisions.

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66. Why is data science important?

Answer:
It helps businesses, governments, and scientists make better decisions by understanding trends, predicting outcomes, and improving services.

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67. Give an example of how data science is used.

Answer:
Online shopping websites use data science to recommend products based on your previous purchases and search history.

◆ 9.8 Big Data and Future Trends

Definitions

68. Big Data:
Very large and complex sets of data that cannot be handled by normal tools and require special methods to store and analyze.

69. Future Trends in Data:
Developments in how we collect, store, and use data using new technologies like Artificial Intelligence (AI), Machine Learning, and the Internet of Things (IoT).

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70. What is big data?

Answer:
Big data refers to massive amounts of data generated every second from sources like social media, sensors, and online platforms. It needs advanced tools to process.

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71. Why is big data important?

Answer:
It helps organizations understand customer behavior, improve products, and make better business decisions using large-scale information.

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72. What are future trends in data handling?

Answer:
Future trends include:

- Using AI and Machine Learning to analyze data automatically
- Real-time data analysis
- Using smart devices (IoT) to collect data from our surroundings

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73. Give an example of big data use in daily life.

Answer:
Streaming platforms like Netflix analyze big data to recommend shows based on your viewing history.

✓ Summary Table: Types of Data & Their Uses

Data Type	Example	Use
Nominal	Gender (Male/Female)	Categorizing without order
Ordinal	Shirt Sizes (S, M, L)	Ranking in meaningful order
Discrete	No. of students (30)	Counting specific items
Continuous	Height (160.5 cm)	Measuring things like height or time

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