1. What is Information Technology, and how is it different from Computer Science?

Information Technology (IT) refers to the **use of computers, software, networks, and digital systems to store, process, transmit, and manage information**. IT focuses on **using and managing technology** to support business operations and user needs.

Computer Science, on the other hand, focuses on the **study of computation, algorithms, and software design**. It is more theoretical and development-oriented.

Difference:

- IT → Use and management of systems, networks, and software
- Computer Science → Design, algorithms, and programming fundamentals

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2. Why is IT important for modern organizations?

IT is important because it supports **almost every function of a modern organization**. IT enables:

- **Automation of tasks and operations**
- **Efficient communication** (email, messaging, video calls)
- **Data storage and analysis** for decision-making
- **Global connectivity** through the internet
- **Innovation** in healthcare, finance, education, and entertainment

Without IT, organizations cannot compete or operate efficiently in today's digital world.

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3. How does IT contribute to business efficiency?

IT improves business efficiency by:

- **Automating repetitive tasks**, reducing manual work and errors
- Enabling **real-time communication and collaboration**
- Providing **data-driven insights** through analytics and reporting
- Improving **process integration** using systems like ERP and CRM
- Supporting **faster decision-making** with accurate and timely data

This leads to **higher productivity, consistency, and cost savings**.

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4. Can a business survive today without IT? Why or why not?

In today's digital environment, **it is extremely difficult for a business to survive without IT**.

- Businesses rely on IT for **operations, communication, customer management, and decision-making**
- IT supports **remote work, digital marketing, online sales, and automation**
- Without IT, businesses lose **efficiency, competitiveness, and scalability**

Therefore, IT is **no longer optional**; it is essential for survival and growth.

5. Give real-world examples where IT has transformed an industry.

- **Healthcare:**
  Use of digital records, data analysis, and advanced systems for better diagnosis and patient care.
- **Finance:**
  Online banking, digital payments, data security, and fraud detection systems.
- **Education:**
  E-learning platforms, virtual classrooms, and digital libraries.
- **Business & Retail:**
  E-commerce platforms, ERP systems, CRM tools, and digital marketing.
- **Communication:**
  Email, messaging apps, video conferencing, and global collaboration tools.

These examples show how IT has **completely transformed industries by improving efficiency, accessibility, and innovation**.

6. What are the core components of IT?

The core components of Information Technology are **Hardware, Software, Networking, Data, and People & Processes**.

- **Hardware** includes physical devices like computers, servers, and routers.
- **Software** includes operating systems and applications that run on hardware.
- **Networking** connects systems for data sharing through LAN, WAN, and the Internet.
- **Data** is the raw information that is processed into meaningful insights.
- **People and Processes** include users, IT professionals, and workflows that manage and operate IT systems.

All these components work together to store, process, and manage information effectively.

7. How do people and processes fit into IT systems?

People and processes are critical because technology alone cannot function without them.

- **People** include end users and IT professionals who operate, manage, secure, and maintain IT systems.
- **Processes** define how tasks are performed, such as data handling, security policies, backups, and system workflows.

People and processes ensure that IT systems are **used correctly, securely, and efficiently** to achieve organizational goals.

8. Why is data considered a core component of IT?

Data is considered a core component because it is the **main resource that IT systems handle**. Data consists of raw facts that are processed into meaningful information. Organizations use data for **analysis, reporting, decision-making, and strategic planning**. Without data, IT systems would have no real business value.

9. How do hardware and software depend on each other?

Hardware and software are **interdependent**.

- Hardware provides the physical platform such as CPU, memory, and storage.
- Software provides the instructions that tell hardware what to do.

Hardware cannot perform any task without software, and software cannot run without hardware. Both must work together for a computer system to function properly.

10. What happens if one IT component fails?

If one IT component fails, it can **affect the entire IT system**.
For example:

- Network failure can stop communication and data sharing.
- Hardware failure can halt system operations.
- Data loss can impact decision-making and business continuity.

This is why organizations focus on **maintenance, security measures, backups, and monitoring**.

11. What is the role of the CPU?

The **CPU (Central Processing Unit)** is known as the **brain of the computer**. It performs all major processing tasks and controls the operations of the computer system.
It consists of two main parts:

- **Control Unit (CU)** – directs and coordinates all activities of the computer.
- **Arithmetic Logic Unit (ALU)** – performs calculations and logical operations.

The CPU processes instructions from software and ensures that all hardware components work together.

12. Difference between RAM and ROM?

RAM (Random Access Memory) is a **temporary and volatile** memory used to store data and programs currently in use.
ROM (Read Only Memory) is a **permanent and non-volatile** memory that stores essential instructions needed to start the computer.

In simple terms, RAM helps in **fast processing**, while ROM helps in **booting the system**.

13. Why is RAM called volatile memory?

RAM is called **volatile memory** because it **loses all stored data when the power is turned off**.

This makes RAM suitable for temporary storage during program execution but not for permanent data storage.

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14. How is secondary storage different from primary memory?

Primary memory (RAM):

- Temporary
- Faster
- Stores data currently being processed

Secondary storage (Hard disk, SSD, optical drives):

- Permanent
- Slower than RAM
- Stores operating systems, applications, and user data

Secondary storage is used for **long-term data storage**, while primary memory is used for **active processing**.

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15. Can a computer work without storage devices?

No, a computer cannot work properly without storage devices.
Storage is required to **store the operating system, software, and user data**. Without storage, the computer would not be able to save programs or files, making it impractical for real use.

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16. What is system software? Give examples.

System software is the software that **controls and manages computer hardware** and provides a platform for running application software.
System software includes **operating systems** that handle memory, processes, files, and devices.

Examples:

- Windows
- Linux
- macOS

Without system software, a computer cannot function.

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17. Difference between system software and application software?

The main difference is their **purpose**:

- **System software** manages hardware and system resources and runs in the background.
- **Application software** is designed for end users to perform specific tasks.

Examples:

- System software: Windows, Linux
- Application software: MS Office, web browsers, databases

System software is essential for running application software.

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18. Why are operating systems important?

Operating systems are important because they act as an **interface between the user and the hardware**.
The operating system:

- Manages memory and CPU usage
- Controls input and output devices
- Handles file management and security

Without an operating system, users cannot interact with the computer effectively.

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19. What role does utility software play?

Utility software helps in **maintaining, protecting, and optimizing** computer systems.
Utility software includes:

- File management tools
- Antivirus software
- Backup tools

These utilities ensure that the system runs smoothly, securely, and efficiently.

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20. Can application software run without an operating system?

No, application software **cannot run without an operating system**.
The operating system provides the necessary environment and system resources that application software needs to function. Without it, application programs cannot access hardware or perform tasks.

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21. What is a computer network?

A computer network is a group of connected devices that communicate with each other to **share data, resources, and services**. Networks allow computers, servers, and other devices to exchange information, access shared files, printers, and use internet services efficiently.

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22. Difference between LAN, MAN, and WAN?

- **LAN (Local Area Network):** Covers a small area such as a home, office, or school. It is fast and used for local communication.
- **MAN (Metropolitan Area Network):** Covers a city or large campus and connects multiple LANs.

- **WAN (Wide Area Network):** Covers a very large area such as countries or continents. The internet is the best example of a WAN.

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23. What is the role of a router?

A router connects **different networks** and directs data packets to their correct destination. It decides the best path for data to travel and enables communication between local networks and the internet.

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24. Difference between a switch and a hub?

- A **hub** sends data to all connected devices, which can cause unnecessary traffic.
- A **switch** sends data only to the intended device, making communication faster and more efficient.

Because of this, switches are commonly used in modern networks.

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25. How does the internet work at a high level?

The internet works by connecting millions of networks and servers worldwide. When a user sends a request, data travels through multiple networks using standard communication rules until it reaches the destination server, which then sends the required information back to the user.

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26. What happens when you type a URL in a browser?

When a URL is typed, the browser sends a request to the server where the website is hosted. The server processes the request and sends the webpage data back to the browser, which then displays the content on the screen.

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27. What is a DBMS and why is it needed?

A **DBMS (Database Management System)** is software that is used to **store, organize, manage, and retrieve data efficiently**. It is needed because organizations handle large amounts of data, and managing it manually or through simple files is inefficient and error-prone. A DBMS allows multiple users to access data safely, ensures consistency, and supports easy data retrieval and updates.

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28. Difference between a database and DBMS?

A **database** is the collection of data that is stored in an organized form.
A **DBMS** is the software that allows users to create, access, modify, and manage that data.

In simple terms, the database is **what stores the data**, and the DBMS is **what manages and controls it**.

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29. What is SQL used for?

SQL (Structured Query Language) is used to **create, read, update, and delete data** in a database. It allows users to retrieve specific information, insert new records, modify existing data, and manage database structures efficiently.

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30. Why is data integrity important?

Data integrity is important because it ensures that data is **accurate, consistent, and reliable**. When data integrity is maintained, organizations can trust their reports and analysis. Poor data integrity can lead to incorrect decisions, errors in operations, and loss of confidence in systems.

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31. How does DBMS help in data security?

A DBMS helps in data security by:

- Controlling **who can access the data**
- Using **authentication and authorization**
- Providing **data backup and recovery**
- Protecting data from unauthorized changes

These features ensure that sensitive data is kept safe and only accessible to authorized users.

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32. What is cybersecurity?

Cybersecurity is the practice of **protecting computer systems, networks, and data** from unauthorized access, attacks, or damage. It focuses on ensuring that information remains **secure, accurate, and available** by preventing cyber threats and minimizing risks.

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33. Difference between virus, malware, and ransomware?

- A **virus** is a type of harmful program that spreads by attaching itself to files or programs and can damage systems.
- **Malware** is a general term for any software designed to harm or disrupt systems, including viruses, spyware, and worms.
- **Ransomware** is a specific type of malware that **locks or encrypts data** and demands payment to restore access.

All three pose security risks, but ransomware directly targets data availability.

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34. What is phishing and how can it be prevented?

Phishing is a cyberattack where attackers use **fake emails, messages, or websites** to trick users into sharing sensitive information like passwords or bank details.
It can be prevented through:

- User awareness and training
- Verifying email sources and links

- Using security tools such as spam filters and authentication mechanisms

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35. Why is encryption important?

Encryption is important because it **converts data into an unreadable format** for unauthorized users. Even if data is intercepted or accessed illegally, encryption ensures that the information remains protected and confidential.

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36. What is a firewall?

A firewall is a **security system that monitors and controls network traffic**. It acts as a barrier between trusted internal networks and untrusted external networks, blocking unauthorized access while allowing legitimate communication.

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37. How do organizations protect sensitive data?

Organizations protect sensitive data by implementing:

- Firewalls and encryption
- Strong authentication and access controls
- Regular data backups
- Security policies, monitoring, and employee training

These measures help reduce risks and ensure data security.

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38. What is cloud computing?

Cloud computing is the delivery of **computing services such as servers, storage, databases, and software over the internet**. Instead of owning physical infrastructure, organizations access these services online, allowing them to store data, run applications, and scale resources as needed.

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39. Difference between IaaS, PaaS, and SaaS?

- **IaaS (Infrastructure as a Service):** Provides basic infrastructure like servers, storage, and networks. Users manage operating systems and applications.
- **PaaS (Platform as a Service):** Provides a platform with tools and environments for developing and deploying applications without managing underlying infrastructure.
- **SaaS (Software as a Service):** Provides ready-to-use software applications accessed through the internet.

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40. Why are companies moving to the cloud?

Companies move to the cloud because it offers:

- **Scalability**, allowing resources to grow as the business grows
- **Cost efficiency**, reducing the need for heavy hardware investment

- **Accessibility**, enabling access to systems from anywhere
- **Flexibility**, supporting remote work and faster deployment

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41. What are the risks of cloud computing?

Some risks of cloud computing include:

- Data security and privacy concerns
- Dependence on internet connectivity
- Limited control over infrastructure
- Potential compliance and regulatory issues

These risks can be managed through proper security measures and provider selection.

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42. Difference between cloud ERP and on-premise ERP?

- **Cloud ERP** is hosted online and accessed through the internet. It offers scalability, lower upfront cost, and easier access from multiple locations.
- **On-premise ERP** is installed on local servers within the organization. It provides more control over systems but requires higher investment, maintenance, and IT resources.

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43. How is AI used in business today?

AI is used in business to **automate tasks, analyze data, and support decision-making**. It helps organizations predict trends, improve customer service through chatbots, automate repetitive processes, and enhance efficiency. AI also supports areas like machine learning, data analysis, and intelligent automation.

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44. What is IoT? Give real-life examples.

The **Internet of Things (IoT)** refers to a network of **physical devices connected to the internet** that collect and share data.
Real-life examples include:

- Smart home devices like smart lights and thermostats
- Wearable devices such as fitness trackers
- Smart meters and industrial sensors

IoT enables real-time monitoring and automation.

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45. What problem does blockchain solve?

Blockchain solves the problem of **trust and data security** in digital transactions. It provides a **secure, decentralized, and tamper-proof record** of data, reducing the need for intermediaries and preventing unauthorized changes.

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46. What is Big Data?

Big Data refers to **very large and complex datasets** that are generated from multiple sources such as business systems, social media, and connected devices. These datasets are analyzed to gain insights, identify patterns, and support better decision-making.

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47. Why can't traditional databases handle Big Data effectively?

Traditional databases are designed for **structured and limited data volumes**. Big Data involves huge volumes, high speed, and different data types, which traditional systems cannot process efficiently. Big Data requires specialized tools and technologies for storage and analysis.

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48. How does IT support decision-making?

IT supports decision-making by **collecting, storing, and analyzing data**. Through reporting tools, dashboards, and analytics systems, managers can view real-time information about performance, costs, and trends. This helps organizations make **accurate, timely, and data-driven decisions** instead of relying only on intuition.

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49. What is the role of IT in supply chain management?

IT plays a key role in supply chain management by **tracking inventory, managing logistics, and improving coordination** between suppliers, warehouses, and customers. IT systems help monitor stock levels, forecast demand, reduce delays, and optimize costs, ensuring smooth and efficient supply chain operations.

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50. How does IT improve customer experience?

IT improves customer experience by enabling **better communication, personalization, and faster service**. Systems such as CRM, online platforms, and chatbots allow businesses to understand customer needs, respond quickly to queries, and provide consistent service across multiple channels.

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51. What is the impact of IT on remote work?

IT has made remote work possible by providing **digital communication and collaboration tools** such as email, video conferencing, and cloud platforms. Employees can access data and systems from anywhere, improving flexibility, productivity, and work-life balance while allowing organizations to operate without location constraints.

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52. How does IT provide competitive advantage?

IT provides competitive advantage by helping organizations **operate more efficiently, innovate faster, and respond quickly to market changes**. By using automation, data analytics, and digital platforms, businesses can reduce costs, improve customer satisfaction, and offer better products or services than competitors.

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53. What is ERP?

ERP (Enterprise Resource Planning) is a software system that **integrates and manages core business processes** such as finance, human resources, sales, inventory, and supply chain in a single platform. It allows different departments to work together using shared data and standardized processes.

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54. Why do organizations implement ERP?

Organizations implement ERP to **improve efficiency, reduce duplication of work, and enhance coordination** across departments. ERP helps automate routine tasks, provides real-time information, improves decision-making, and ensures smoother business operations.

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55. What are the core modules of ERP?

The core modules of ERP typically include:

- Finance and Accounting
- Human Resource Management (HRM)
- Inventory Management
- Sales and Marketing
- Customer Relationship Management (CRM)
- Supply Chain Management (SCM)
- Production or Manufacturing Management

These modules work together to support end-to-end business processes.

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56. How does ERP improve data accuracy?

ERP improves data accuracy by using a **single, centralized database** where all departments store and access information. This eliminates data duplication, reduces manual entry errors, and ensures that everyone works with the same, updated data.

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57. What challenges do companies face while implementing ERP?

Common challenges include:

- High implementation cost
- Resistance to change from employees
- Data migration issues
- Need for employee training
- Time-consuming implementation process

Proper planning and change management are required to overcome these challenges.

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58. Difference between ERP and CRM?

- **ERP** focuses on managing **internal business processes** like finance, HR, and supply chain.
- **CRM** focuses on managing **customer interactions**, sales, and customer data.

ERP improves overall operational efficiency, while CRM improves customer relationships.

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59. Why is centralized database important in ERP?

A centralized database ensures that all departments **share the same data in real time**. This improves data consistency, avoids conflicts, and supports better coordination and faster decision-making across the organization.

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60. Cloud ERP vs On-Premise ERP?

- **Cloud ERP** is hosted online and accessed through the internet. It offers scalability, lower upfront cost, and easy access from anywhere.
- **On-Premise ERP** is installed on local servers within the organization. It provides more control but requires higher investment, maintenance, and IT support.

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61. What is business strategy?

Business strategy defines an organization's **goals, direction, and long-term plans**. It explains what the business wants to achieve, such as expanding into new markets, reducing costs, improving product quality, or enhancing customer experience, and outlines how these goals will be achieved.

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62. What is IT strategy?

IT strategy explains **how technology will be used to support business goals**. It includes decisions related to IT infrastructure, software applications, data management, cybersecurity, and technology investments. The main aim is to ensure that IT systems enable and strengthen business objectives.

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63. Why is alignment between business and IT important?

Alignment is important because IT must directly **support business priorities**. When business and IT strategies are aligned, technology investments deliver real value, operations become more efficient, and decision-making improves. Alignment ensures that IT initiatives are focused on achieving business goals rather than working in isolation.

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64. What happens when IT and business strategies are not aligned?

When there is no alignment, organizations may invest in technology that **does not support business needs**. This can lead to wasted resources, inefficient processes, system failures, and missed opportunities. Even with good technology and strong business plans, lack of alignment can reduce overall performance.

65. How does alignment capability impact performance?

Alignment capability refers to an organization's ability to **continuously coordinate business and IT strategies**. Strong alignment capability improves communication between teams, enables faster adaptation to change, and ensures that technology consistently supports business performance. This leads to better efficiency, innovation, and competitive advantage.

66. What is structured data?

Structured data is data that is **highly organized** and stored in a **fixed format**, usually in rows and columns. It follows a predefined structure, which makes it easy to store, search, and analyze using tools like databases and SQL. Examples include employee records, transaction data, and spreadsheets.

67. Difference between structured and unstructured data?

- **Structured data** has a clear format with predefined fields, making it easy to store and analyze.
- **Unstructured data** does not follow a fixed structure and is mostly free-form.

Structured data is easy to query, while unstructured data requires advanced techniques for analysis.

68. What is semi-structured data?

Semi-structured data is data that **does not follow a strict table format** but still has some level of organization through tags, key–value pairs, or hierarchical structure. It lies between structured and unstructured data.

69. Where is semi-structured data commonly used?

Semi-structured data is commonly used in:

- Web applications
- APIs and data exchange formats
- Emails and log files
- NoSQL databases

It is popular because it offers flexibility while still maintaining some structure.

70. Why is unstructured data difficult to analyze?

Unstructured data is difficult to analyze because it **lacks a predefined format**. It cannot be easily stored in traditional databases and often requires advanced tools like text analysis, natural language processing, or image processing to extract useful information.

71. What is internal data?

Internal data is the data that is **generated within an organization** during its daily operations. This includes sales records, customer information, employee data, inventory details, and financial transactions. Internal data is usually stored in systems like ERP, CRM, or internal databases and is considered reliable and confidential.

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72. What is external data?

External data is data that comes from **outside the organization**. It includes information about market trends, competitors, customer demographics, and industry statistics. Businesses use external data to understand the business environment and make strategic decisions.

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73. What is third-party analytics data?

Third-party analytics data is data and insights provided by **external analytics platforms or service providers**. Examples include website traffic reports, social media analytics, and marketing performance data. This type of data helps organizations understand user behavior and evaluate the effectiveness of their digital activities.

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74. What is open data?

Open data is data that is **freely available to the public** for use and reuse. It is usually published by governments, public organizations, or international bodies. Examples include census data, weather data, and transportation statistics. Open data supports research, transparency, and innovation.

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75. Why should businesses combine multiple data sources?

Businesses should combine multiple data sources to gain a **complete and accurate view** of their operations and market environment. Internal data shows what is happening inside the organization, while external and third-party data provide context about customers and competitors. Combining data sources improves forecasting, analysis, and decision-making.

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76. Difference between qualitative and quantitative data?

- **Qualitative data** describes qualities or characteristics and is usually non-numerical, such as opinions, feedback, or experiences.
- **Quantitative data** is numerical and can be measured or counted, such as sales numbers, percentages, or ratings.

Qualitative data explains **why** something happens, while quantitative data explains **what** and **how much**.

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77. What is primary data collection?

Primary data collection is the process of **collecting data directly from the original source** for a specific purpose. Methods include surveys, interviews, observations, and experiments. This data is fresh, specific, and directly relevant to the research or business problem.

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78. What is secondary data collection?

Secondary data collection involves using **existing data that has already been collected** by others. Examples include reports, company records, government publications, and online databases. It saves time and cost compared to primary data collection.

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79. Advantages and disadvantages of primary data?

Advantages:

- Data is accurate and specific to the requirement
- High level of control over data quality
- Up-to-date information

Disadvantages:

- Time-consuming to collect
- Expensive compared to secondary data
- Requires planning and resources

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80. When would you prefer secondary data?

Secondary data is preferred when **time and budget are limited**, or when the required information already exists in a reliable form. It is also useful for background research, trend analysis, and gaining initial insights before collecting primary data.

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81. What is Data Life Cycle Management?

Data Life Cycle Management (DLM) is the process of **managing data from creation to deletion**. It covers how data is collected, stored, used, maintained, shared, archived, and finally disposed of. The goal is to ensure that data is handled properly at every stage of its life.

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82. Why is DLM important?

DLM is important because it helps organizations **maintain data quality, reduce storage costs, and improve security**. Proper management ensures that data remains accurate, accessible when needed, and protected from misuse. It also helps organizations avoid risks related to outdated or unnecessary data.

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83. What happens if data is not properly disposed of?

If data is not properly disposed of, it can lead to **data breaches, legal issues, and misuse of sensitive information**. Old or unused data may still contain confidential details, which can be accessed by unauthorized users, increasing security and compliance risks.

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84. How does DLM support compliance?

DLM supports compliance by ensuring that data is **stored, retained, and deleted according to legal and regulatory requirements**. It helps organizations follow data protection laws, maintain audit trails, and demonstrate responsible data handling during inspections or audits.

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85. What does a Business Analyst do?

A Business Analyst (BA) identifies **business needs and problems** and helps find suitable solutions using processes, systems, or technology. The BA gathers requirements from stakeholders, analyzes business processes, documents requirements, and ensures that the final solution meets business objectives.

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86. How does a BA act as a bridge between business and IT?

A BA acts as a bridge by **translating business requirements into technical requirements**. They communicate with business stakeholders to understand their needs and then work with IT teams to ensure those needs are correctly implemented. This helps avoid misunderstandings and ensures successful project delivery.

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87. What tools are commonly used by Business Analysts?

Business Analysts commonly use tools such as:

- Documentation tools like Word and Excel
- Modeling tools for process flows and diagrams
- Requirement management tools
- Data analysis and reporting tools
- Collaboration tools for communication with stakeholders

These tools help BAs analyze, document, and communicate effectively.

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88. What skills are required to be a good Business Analyst?

A good Business Analyst needs:

- Strong communication and interpersonal skills
- Analytical and problem-solving skills
- Understanding of business processes
- Basic technical knowledge
- Stakeholder management and documentation skills

These skills help the BA understand requirements and deliver value-driven solutions.

89. Difference between BA and Data Analyst?

- A **Business Analyst** focuses on understanding business problems and defining solutions by analyzing processes and requirements.
- A **Data Analyst** focuses on analyzing data to generate insights, trends, and reports.

The BA works more with stakeholders and processes, while the Data Analyst works mainly with data and analytics tools.

90. What is the Waterfall model?

The Waterfall model is a **linear and sequential approach** to software development. Each phase—such as requirement analysis, design, development, testing, and deployment—is completed one after another. Once a phase is finished, it is difficult to go back and make changes.

91. What are the limitations of Waterfall?

The main limitations of Waterfall include:

- Difficult to accommodate changes once development starts
- Late testing, which increases risk of errors
- Not suitable for projects with changing requirements
- Limited customer involvement during development

92. What is Agile methodology?

Agile methodology is an **iterative and flexible approach** to project development. Work is divided into small cycles called sprints, where features are developed, tested, and reviewed continuously. Agile encourages frequent feedback, collaboration, and quick adaptation to change.

93. Difference between Agile and Waterfall?

- **Waterfall** follows a fixed sequence with detailed planning at the start.
- **Agile** follows an iterative approach with continuous improvement.

Waterfall is rigid and change-resistant, while Agile is flexible and customer-focused.

94. Role of BA in Agile projects?

In Agile projects, the Business Analyst helps **define and prioritize requirements**, supports the product owner, clarifies user stories, and ensures business needs are understood by the development team. The BA also works closely with stakeholders to manage changes and expectations.

95. When would you choose Waterfall over Agile?

Waterfall is preferred when:

- Requirements are clearly defined and stable
- The project scope is fixed
- Regulatory or documentation needs are high
- Minimal changes are expected during development

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96. Who are stakeholders?

Stakeholders are **individuals or groups who have an interest in a project or business outcome**. They can influence the project or be affected by its results. Examples include customers, managers, employees, vendors, sponsors, and IT teams.

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97. Why is stakeholder management important?

Stakeholder management is important because it ensures that **expectations, requirements, and concerns are clearly understood and addressed**. Effective management helps build trust, reduces conflicts, and increases the chances of project success by keeping everyone aligned.

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98. How do you identify key stakeholders?

Key stakeholders are identified by analyzing:

- Who is affected by the project
- Who has decision-making power
- Who provides resources or approvals

Techniques such as stakeholder analysis and mapping are used to prioritize stakeholders based on their influence and interest.

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99. What are the risks of poor stakeholder communication?

Poor communication can lead to:

- Misunderstood requirements
- Delays and rework
- Loss of stakeholder support
- Increased conflicts and dissatisfaction

These risks can negatively impact project timelines and outcomes.

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100. How does stakeholder engagement improve project success?

Stakeholder engagement improves project success by encouraging **active involvement and regular feedback**. Engaged stakeholders help clarify requirements, support decision-making, and quickly resolve issues, resulting in better quality outcomes and smoother project execution.

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101. What is scenario analysis?

Scenario analysis is a technique used to **evaluate different possible future situations** by considering various assumptions and conditions. It helps organizations understand how different scenarios—such as best-case, worst-case, and most-likely situations—could impact business outcomes.

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102. Why is scenario analysis important?

Scenario analysis is important because it helps organizations **prepare for uncertainty**. By exploring multiple possible outcomes, businesses can plan strategies in advance, reduce surprises, and make more informed decisions even when the future is unpredictable.

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103. Difference between scenario analysis and forecasting?

- **Scenario analysis** explores multiple possible futures based on different assumptions.
- **Forecasting** predicts a single expected outcome based on historical data and trends.

Scenario analysis focuses on possibilities, while forecasting focuses on predictions.

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104. How does scenario analysis help in risk management?

Scenario analysis helps in risk management by **identifying potential risks and their impact** before they occur. It allows organizations to test strategies under different conditions and develop contingency plans, reducing the impact of unexpected events.

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105. Give a business use case for scenario analysis.

A common business use case is **financial planning**. For example, a company may analyze scenarios such as revenue growth, economic slowdown, or increased costs to understand how each situation would affect profits and cash flow, helping management make better strategic decisions.

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106. What is data governance?

Data governance is the framework of **policies, rules, and responsibilities** that ensures data is managed properly across an organization. It defines how data is created, stored, accessed, and used to maintain quality, security, and consistency.

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107. Why is data governance important?

Data governance is important because it helps organizations **maintain accurate, secure, and reliable data**. It supports better decision-making, ensures compliance with laws, reduces risks, and builds trust in data across the organization.

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108. What are data ownership and data stewardship?

- **Data ownership** refers to individuals or teams responsible for defining how data is used and who can access it.
- **Data stewardship** involves managing data on a day-to-day basis to ensure quality, accuracy, and compliance with policies.

Both roles work together to ensure proper data management.

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109. What is ethical use of data?

Ethical use of data means **collecting, using, and sharing data responsibly**. It involves respecting user privacy, obtaining consent, avoiding misuse of data, and ensuring transparency in how data is handled.

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110. Why is data privacy critical for organizations?

Data privacy is critical because organizations handle **sensitive personal and business information**. Protecting privacy helps prevent data breaches, maintains customer trust, avoids legal penalties, and protects the organization's reputation.

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111. How do GDPR and CCPA differ at a high level?

- **GDPR** focuses on protecting personal data of individuals and applies broadly across regions.
- **CCPA** focuses on consumer data rights and applies mainly to certain businesses.

Both laws aim to give individuals more control over their personal data but differ in scope and requirements.

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112. What happens if a company violates data protection laws?

If a company violates data protection laws, it may face **heavy fines, legal action, and reputational damage**. It can also lose customer trust and be required to change its data handling practices to meet compliance standards.