2-Mark Answers

1. Types of Hard Disk
Hard disks come in several types: **HDD (Hard Disk Drive)**, **SSD (Solid State Drive)**, and **Hybrid drives**. HDDs use spinning disks and are cheaper, while SSDs offer faster speed with no moving parts. Hybrid drives combine both for a balance of performance and storage capacity.

2. CMOS
CMOS (Complementary Metal Oxide Semiconductor) is a small memory chip on the motherboard that stores BIOS settings like system time, date, and hardware configurations. It uses a small battery to retain data even when the system is turned off.

3. Command Line Operating
Command Line Operating System allows users to interact with the computer by typing text commands. It provides powerful control, faster execution, and low resource usage, but it requires users to remember commands, making it less user-friendly than graphical interfaces.

4. Boot Process
The boot process is the sequence of steps a computer takes when powered on. It includes POST, loading the BIOS, identifying the bootable device, and loading the operating system into memory to make the system ready for use.

5. Memory
Memory refers to components that store data temporarily or permanently. **Primary memory** (RAM) stores data temporarily for quick access, while **secondary memory** (like hard drives) stores data long-term. Memory is essential for system performance and multitasking capabilities.

6. POST
POST (Power-On Self-Test) is the diagnostic testing sequence run by a computer’s BIOS to check hardware like RAM, keyboard, and disk drives before loading the OS. If an error is found, it typically produces a beep code or displays an error message.

7. TGT
TGT (Ticket Granting Ticket) is used in **Kerberos authentication**. It is issued after a user logs in and proves their identity. The TGT allows the user to request service tickets for accessing other resources within the network without re-entering credentials.

8. Creation of GPO
Group Policy Objects (GPOs) are created in Windows environments to enforce settings and configurations across users and computers. Administrators use tools like Group Policy Management Console to define rules for security, desktop configuration, and software installation on domain-joined systems.

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9. LDAP
LDAP (Lightweight Directory Access Protocol) is a protocol used to access and manage directory services. It helps in locating individuals, resources, or services across a network. It's commonly used in Microsoft Active Directory for authenticating and authorizing users.

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10. Types of Cloud
Cloud types include **Public Cloud**, **Private Cloud**, and **Hybrid Cloud**. Public clouds are managed by third-party providers, private clouds are used within organizations, and hybrid clouds combine both for flexibility, cost-effectiveness, and better resource management.

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11. Cloud Security
Cloud security involves protecting data, applications, and services in the cloud through encryption, access controls, firewalls, and compliance practices. It ensures data confidentiality, integrity, and availability while preventing unauthorized access or cyberattacks.

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12. Encryption
Encryption is the process of converting readable data into an unreadable format to protect it from unauthorized access. It uses algorithms and keys to secure data during storage or transmission, ensuring privacy and security in digital communication.

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13. RAM
RAM (Random Access Memory) is a type of volatile memory used to temporarily store data that the CPU accesses during operations. It enhances system speed and multitasking ability. More RAM allows a system to run more programs simultaneously without slowing down.

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14. Additional Display Card
An additional display card (graphics card) enhances video rendering and visual performance. It is especially useful for gaming, video editing, and graphic design. It contains its own GPU and memory, reducing the load on the CPU for graphics-related tasks.

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16. Directories in Operating System
Directories (or folders) are structures used to organize and store files systematically in an operating system. They help in file management by grouping related files, enabling easy access, and maintaining a hierarchical structure for better navigation.

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17. Device Drivers
Device drivers are small programs that allow the operating system to communicate with hardware devices like printers, keyboards, and graphics cards. Without drivers, hardware would not function correctly. Drivers translate OS commands into hardware actions.

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18. Basic Electrical Safety in PCs
Basic electrical safety includes unplugging the PC before repairs, avoiding static discharge by grounding oneself, using insulated tools, and keeping liquids away. It helps prevent electrical shock, hardware damage, and data loss during maintenance or installation.

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19. Active Directory
Active Directory is Microsoft’s directory service that manages users, computers, and network resources in a Windows domain. It supports authentication, access control, and centralized management. It’s essential for enterprise environments using domain-based networking.

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20. Non-Windows Work Station
A non-Windows workstation operates on operating systems like Linux or macOS. These systems offer alternative features, interfaces, and security models compared to Windows. They’re often used in development, design, or research environments due to their flexibility and performance.

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21. Enterprise with Computers
An enterprise with computers automates its operations, enhances communication, manages data efficiently, and improves productivity. Computers support tasks such as inventory management, payroll processing, and enterprise resource planning (ERP), enabling faster and more accurate business decisions

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22. **Security Mapping**
Security mapping is the process of linking user identities to permissions and access rights within a system. It ensures that users can only access authorized resources, helping to enforce security policies and protect sensitive data from unauthorized access.

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23. Characteristics of Cloud Computing

Key characteristics include on-demand self-service, broad network access, resource pooling, rapid elasticity, and measured service. These features make cloud computing scalable, flexible, and cost-effective, allowing users to access resources anytime, anywhere, with usage-based billing.

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24. Data Security

Data security involves protecting data from unauthorized access, corruption, or theft. It includes encryption, backup, access control, and secure authentication. Data security ensures confidentiality, integrity, and availability, especially in digital storage and transmission systems.

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25. Types of Disk

Common disk types include **Hard Disk Drives (HDDs)**, **Solid State Drives (SSDs)**, and **Optical Discs (CD/DVD)**. HDDs store data magnetically, SSDs use flash memory for faster access, and optical disks use lasers to read/write data. Each has different speed, capacity, and cost.

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26. AGP

AGP (Accelerated Graphics Port) is a high-speed point-to-point channel used for attaching a graphics card to a motherboard. It was developed to enhance the rendering of 3D graphics and offer faster data transfer than traditional PCI slots, but has been replaced by PCIe.

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27. NTFS

NTFS (New Technology File System) is a Windows file system offering features like file-level security, compression, encryption, and large volume support. It is more robust and efficient than FAT systems and supports access control lists for better security.

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29. Server

A server is a powerful computer that provides services, resources, or data to other computers (clients) over a network. Common server types include file servers, web servers, and database servers. They manage shared tasks and centralize data access.

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30. Memory Devices

Memory devices are components used to store data temporarily or permanently. Examples include **RAM** (volatile), **ROM** (non-volatile), **USB drives**, and **hard disks**. They vary in speed, capacity, and use cases, from fast processing to long-term storage.

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32. Motherboards
A motherboard is the main circuit board in a computer. It connects and allows communication between components like CPU, RAM, storage, and peripheral devices. It contains slots, ports, and chipsets essential for system operation.

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34. Domain
A domain is a logical grouping of computers and resources under a common name within a network. It allows centralized management, security policies, and user authentication, typically managed via domain controllers in Windows Server environments.

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35. Smart Card
A smart card is a physical card embedded with a microchip that stores data securely. It is used for authentication, secure transactions, and access control. Common in banking and enterprise login systems, it enhances digital security.

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37. Types of Processors
Processors are classified into types like **Single-Core**, **Dual-Core**, **Quad-Core**, and **Multi-Core**. They may also differ by architecture, such as **CISC** or **RISC**. Intel and AMD are common manufacturers. More cores enable better multitasking and parallel processing in computers.

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38. BIOS
BIOS (Basic Input/Output System) is firmware that initializes hardware during the boot process. It performs POST, loads the OS, and provides a basic interface between the operating system and hardware components like keyboard, display, and storage.

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39. Printers
Printers are output devices that produce text and graphics on paper. Types include **Inkjet**, **Laser**, **Dot Matrix**, and **Thermal**. Each varies in speed, quality, and cost. Laser printers are fast and suitable for bulk printing; inkjets are cost-effective for color prints.

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41. Who is Custodian?
In IT security, a **custodian** is responsible for implementing and maintaining security controls on data as defined by the owner. They manage access, backup, and protect data but do not decide how data is used.

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42. Removable Memory Devices
These are portable storage devices that can be removed and connected as needed. Examples include **USB flash drives**, **external hard drives**, **SD cards**, and **CD/DVDs**. They are useful for data transfer, backup, and mobility.

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43. Data Buses
A data bus is a subsystem that transfers data between components in a computer. It connects the CPU to memory, I/O devices, and other peripherals. Bus width (e.g., 32-bit, 64-bit) determines how much data it can transfer at once.

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45. Forest
In Active Directory, a **forest** is the highest level of the logical structure. It contains multiple domain trees that share a common schema and global catalog. Forests allow centralized administration and trust relationships between domains.

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46. Screen Saver Settings
Screen saver settings control when and how a screen saver activates. They can be customized for time delay, style, and security. Enabling password protection on screen savers helps secure unattended systems.

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47. Finger Prints
Fingerprints are biometric identifiers used for authentication. Fingerprint scanners capture the unique ridges of a user's finger to verify identity. They enhance security in devices, applications, and access control systems.

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48. Multi-Tenancy Model
Multi-tenancy allows multiple users (tenants) to share the same application and infrastructure while keeping their data isolated. Common in cloud computing, it optimizes resource usage, reduces cost, and simplifies maintenance for providers.

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50. RAID
RAID (Redundant Array of Independent Disks) is a data storage method that uses multiple disks for redundancy or performance. Common RAID types are RAID 0 (speed), RAID 1 (mirroring), and RAID 5 (parity). It improves reliability and fault tolerance.

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51. FAT
FAT (File Allocation Table) is a file system used in older versions of Windows and removable drives. It keeps track of file locations on a disk. Versions include FAT12, FAT16, and FAT32. FAT is simple and widely compatible but lacks advanced security features.

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52. VGA
VGA (Video Graphics Array) is a standard for display hardware introduced by IBM. It provides a 640x480 resolution and 16 or 256 colors. VGA connectors are still used for video output, although newer interfaces like HDMI and DisplayPort have become more common.

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53. Who is Client?
A client is a computer or application that requests services or resources from a server. In client-server architecture, the client sends requests (e.g., for data or processing), and the server responds. Examples include web browsers and email clients.

54. Drivers
Drivers are software programs that allow the operating system to communicate with hardware components. For example, a printer driver translates OS instructions into commands the printer understands. Without correct drivers, hardware may not function properly.

55. Basic Electrical Safety of CPU
Basic safety includes turning off power before opening the CPU case, avoiding static discharge by grounding oneself, using proper tools, and ensuring dry conditions. These practices prevent electrical shocks, hardware damage, and accidents during installation or repair.

56. Start Boot Sequence
The boot sequence begins when a computer is powered on. The BIOS performs POST, then locates the bootable device, and loads the operating system into RAM. This process initializes hardware and prepares the system for use.

57. Enterprise
An enterprise is a large organization that uses computer systems for business operations. It may involve multiple departments, users, and locations. Enterprises require centralized control, scalability, and secure IT infrastructure for managing data and processes.

59. RSA
RSA (Rivest-Shamir-Adleman) is an asymmetric encryption algorithm used in secure data transmission. It uses a public key to encrypt data and a private key to decrypt it. RSA ensures confidentiality and is widely used in secure communications.

60. Cloud Computing
Cloud computing delivers computing services—like servers, storage, databases, and software—over the internet. It offers scalability, cost-efficiency, and flexibility. Users can access resources on demand without maintaining physical infrastructure.

62. Optical Drives
Optical drives read and write data using laser light on optical discs like CDs, DVDs, and Blu-rays. They are used for media playback, software installation, and backups. Though less common today, they’re still useful for legacy systems.

63. Operating System
An operating system (OS) is system software that manages computer hardware and software resources. It provides an interface between users and the computer, handling tasks like memory management, file systems, input/output operations, and process scheduling.

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65. Interrupts
Interrupts are signals that alert the processor to pause current tasks and execute a high-priority task. Hardware and software interrupts allow devices like keyboards and network cards to interact with the CPU for responsive operations.

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67. Domain
A domain is a collection of computers and resources managed under a central directory service like Active Directory. It enables centralized administration, user authentication, and resource sharing in enterprise networks.

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69. Expand GPO and give its uses
GPO (Group Policy Object) is a feature in Windows that allows administrators to control settings and configurations across a domain. It’s used for enforcing security policies, configuring desktops, and automating software deployments.

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72. Securing Data
Securing data involves protecting it from unauthorized access, alteration, or loss. Techniques include encryption, authentication, firewalls, access control, and backups. Proper data security safeguards privacy and maintains data integrity.

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75. System Files
System files are essential files used by the operating system to function correctly. They include kernel files, drivers, and configuration files. Examples include `ntoskrnl.exe` (Windows) and `systemd` (Linux). Deleting or corrupting them may prevent the system from booting.

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77. Boot Sequence
The boot sequence is the order in which a computer loads operating system components after startup. It begins with POST, then loads BIOS, selects a bootable device, and finally loads the OS into memory for user interaction.

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79. Forest
In Active Directory, a forest is the top-level container that holds multiple domain trees. It shares a common schema and global catalog, allowing centralized user management, trust relationships, and resource access across the domains.

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83. Auditing and Compliance
Auditing tracks user activities, system changes, and access logs, while compliance ensures systems follow regulations like GDPR or HIPAA. Both are crucial for detecting security breaches, maintaining accountability, and fulfilling legal or organizational standards.

84. Securing the Cloud
Cloud security involves protecting cloud-based data, applications, and infrastructure. It uses encryption, firewalls, identity access management (IAM), and security policies to prevent unauthorized access and cyber threats, ensuring data integrity and availability.

86. Tap Drivers
Tape drivers are software components that enable the operating system to communicate with tape backup devices. These drivers facilitate data reading and writing on magnetic tapes used for archival storage and backup in enterprise environments.

89. Processor
The processor (CPU) is the brain of a computer. It performs calculations and executes instructions from programs. Its speed and architecture directly affect system performance. Modern CPUs may have multiple cores for parallel processing.

90. Data Bus
A data bus is a communication pathway used to transfer data between components like CPU, memory, and peripherals. The width of the bus (e.g., 32-bit or 64-bit) determines how much data can move at a time, affecting performance.

91. Organization Unit of a Data
An Organizational Unit (OU) is a subdivision within Active Directory used to group users, computers, or resources. It allows delegation of administrative control and application of specific group policies, aiding in structured network management.

92. Structure of GPO
A Group Policy Object (GPO) has two main components: the **Group Policy Container (GPC)** stored in Active Directory, and the **Group Policy Template (GPT)** stored in the SYSVOL folder. These structures define user/computer settings applied across domains.

93. Trust Relationships
Trust relationships in Active Directory allow domains to share resources securely. They can be **one-way** or **two-way** and **transitive** or **non-transitive**. Trusts enable user authentication and resource access across different domains or forests.

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94. Identity Protocol Standards
Identity protocol standards like **SAML**, **OAuth**, and **OpenID Connect** facilitate secure user authentication and authorization across platforms. These protocols support single sign-on (SSO), federated identity, and access delegation in cloud and enterprise systems.

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95. Security Boundary
A security boundary defines a separation between systems or networks to control access and enforce policies. It helps contain threats, limit data flow, and protect sensitive resources by applying firewalls, encryption, and authentication at the boundary.

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96. Tenancy
Tenancy in cloud computing refers to how resources are allocated to users. **Single-tenancy** provides dedicated resources per user, while **multi-tenancy** allows multiple users to share infrastructure. Multi-tenancy increases efficiency, while single-tenancy offers isolation and control.
