PCI1D 2-Mark Questions - Short Answers

UNIT 1: Computer Hardware Basics

1. RAM (Dec 2019)

Random Access Memory - Volatile memory that stores data temporarily while computer is running. Provides fast access to CPU for active programs and data.

2. Additional display Card (Dec 2019)

External graphics card that enhances video performance beyond integrated graphics. Provides dedicated GPU processing for gaming, video editing, and graphics-intensive applications.

3. Types of disk (Dec 2020)

- **Hard Disk Drive (HDD)**: Mechanical storage with spinning platters
- **Solid State Drive (SSD)**: Flash-based storage, faster and more reliable
- **Hybrid Drive**: Combines HDD and SSD technologies

4. AGP (Dec 2020)

Accelerated Graphics Port - Dedicated expansion slot for graphics cards, providing faster data transfer than PCI slots. Replaced by PCIe in modern systems.

5. Memory devices (Dec 2020)

Storage components that retain data:

- **Primary**: RAM, ROM, Cache
- **Secondary**: HDD, SSD, USB drives, CD/DVD

6. Motherboards (Dec 2020, Dec 2021)

Main circuit board connecting all computer components. Contains CPU socket, RAM slots, expansion slots, connectors, and chipset for component communication.

7. Types of processors (Dec 2021)

- **Intel**: Core i3, i5, i7, i9 series
- **AMD**: Ryzen, Athlon series
- **Architecture**: x86, x64, ARM processors

8. BIOS (Dec 2021)

Basic Input/Output System - Firmware that initializes hardware during boot process and provides runtime services for OS and programs.

9. Printers (Dec 2021)

Output devices producing hard copies:

- **Impact**: Dot matrix
- **Non-impact**: Inkjet, Laser, Thermal

10. Removable Memory devices (Dec 2021)

Portable storage devices:

- USB flash drives, SD cards, External HDDs, DVDs, Blu-ray discs

11. Data buses (Dec 2021)

Communication pathways carrying data between components:

- **Width**: 8-bit, 16-bit, 32-bit, 64-bit
- **Types**: System bus, expansion bus

12. Expand RAM and give its importance (at least 2) (Dec 2022)

Random Access Memory Importance:

1. Provides temporary storage for active programs
2. Enables multitasking and faster program execution

13. Memory (Dec 2022)

Computer component storing data and instructions:

- **Volatile**: RAM (temporary storage)
- **Non-volatile**: ROM, storage devices (permanent)

14. Expand FAT and give its uses (May 2022)

File Allocation Table Uses:

1. File system for organizing data on storage devices
2. Compatible across different operating systems

15. Optical Drives (May 2022)

Storage devices using laser light to read/write data:

- CD, DVD, Blu-ray drives for multimedia and data storage

16. Expand RAID and give its importance (at least 2) (May 2023)

Redundant Array of Independent Disks Importance:

1. Improves data reliability through redundancy
2. Enhances performance through data striping

17. Tap Drivers (May 2023)

Note: Likely "Tape Drivers" Software enabling OS to communicate with tape backup systems for data archival and recovery operations.

18. Processor (May 2023)

Central Processing Unit (CPU) - Brain of computer executing instructions, performing calculations, and controlling system operations.

19. Data Bus (May 2023)

Communication pathway carrying data between CPU, memory, and other components. Width determines amount of data transferred simultaneously.

20. Types of Hard disk (July 2019)

- **Interface**: SATA, IDE, SCSI
- **Technology**: HDD (mechanical), SSD (solid-state)
- **Form factor**: 2.5", 3.5", M.2

21. CMOS (July 2019)

Complementary Metal-Oxide Semiconductor - Battery-powered memory storing BIOS settings and system configuration data.

22. Memory (July 2019)

Computer storage for data and programs:

- **Primary**: RAM, ROM, Cache memory
- **Secondary**: Hard drives, optical drives

23. POST (July 2019, Dec 2019, Dec 2020)

Power-On Self-Test - Diagnostic testing sequence performed by BIOS during startup to verify hardware components functionality.

24. Expand RAM and gives its importance (at least 2) (May 2021)

Random Access Memory Importance:

1. Stores running programs and active data
2. Determines system multitasking capability

25. RAID (May 2021)

Redundant Array of Independent Disks - Technology combining multiple drives for improved performance, reliability, or both.

26. FAT (May 2021)

File Allocation Table - File system keeping track of file locations on storage devices, ensuring data organization and retrieval.

27. VGA (May 2021)

Video Graphics Array - Display standard providing 640x480 resolution, commonly used for monitor connections.

28. Drivers (May 2021)

Software programs enabling operating system to communicate with and control hardware devices.

29. Basic Electrical Safety of CPU (May 2021)

Safety measures:

1. Use anti-static wrist strap to prevent ESD damage
2. Ensure proper grounding and power disconnection before handling

UNIT 2: Operating Systems

30. Directories in operating system (Dec 2019)

Organizational structures containing files and subdirectories, providing hierarchical file system organization for data management.

31. Device Drivers (Dec 2019)

Software programs that enable operating system to communicate with and control specific hardware devices.

32. NTFS (Dec 2020)

New Technology File System - Advanced Windows file system supporting large files, security features, and journaling for reliability.

33. Boot Process (Dec 2020, Dec 2021, May 2022)

Sequence of events from power-on to OS loading: POST → Boot loader → Kernel loading → System initialization.

34. Server (Dec 2020)

Computer or software providing services to other computers (clients) over a network, managing resources and requests.

35. System Files (Dec 2022)

Critical OS files required for proper system operation: kernel, device drivers, system libraries, configuration files.

36. Directories (Dec 2022)

Containers organizing files and subdirectories in hierarchical structure, enabling efficient file system navigation and management.

37. Boot Sequence (Dec 2022)

Ordered steps during computer startup: Hardware initialization → BIOS/UEFI → Boot loader → OS kernel → Services.

38. Operating System (May 2022)

System software managing computer hardware resources and providing services for application programs and users.

39. POST- Expand (May 2022)

Power-On Self-Test - Hardware diagnostic routine performed during boot to verify system component functionality.

40. Server (May 2023)

Computing device providing centralized services, resources, and data access to multiple client computers over network.

41. Directories (May 2023)

File system structures organizing files in hierarchical tree format, enabling systematic data storage and retrieval.

42. Command Line Operating (July 2019)

Text-based interface allowing users to interact with OS through typed commands rather than graphical interface.

43. Boot Process (July 2019)

Computer startup procedure: Power-on → Hardware check → OS loading → System services → User interface.

44. Who is Client? (May 2021)

Computer or software requesting services from a server, typically end-user devices accessing network resources.

45. Start boot sequence (May 2021)

Initial startup phase: Power supply → POST → BIOS/UEFI → Boot device detection → Boot loader execution.

UNIT 3: Computer Principles and Back Box Model

46. Basic Electrical Safety in PC's (Dec 2019)

Safety measures: ESD protection, proper grounding, power disconnection, avoiding liquid contact, using surge protectors.

47. Interrupts (May 2022)

Signals sent to CPU requesting immediate attention, temporarily suspending current operations to handle urgent tasks or events.

UNIT 4: Enterprise and Active Directory Infrastructure

48. Active directory (Dec 2019)

Microsoft directory service storing network information about users, computers, and resources, providing centralized authentication and authorization.

49. Non Windows Work Station (Dec 2019)

Computers running operating systems other than Windows (Linux, macOS, Unix) that can integrate with Windows networks.

50. Enterprise with computers (Dec 2019)

Large-scale business computing environment with multiple interconnected systems, centralized management, and shared resources.

51. Security Mapping (Dec 2019, May 2022)

Process of identifying and documenting security relationships between users, groups, resources, and permissions in network environment.

52. LDAP (Dec 2020, July 2019)

Lightweight Directory Access Protocol - Standard protocol for accessing and maintaining directory information services over networks.

53. Domain (Dec 2020, May 2022)

Logical grouping of network resources under centralized administration, providing single security and policy boundary.

54. Smart Card (Dec 2020)

Physical security device containing embedded microprocessor for secure authentication and access control.

55. Who is custodian? (Dec 2021)

Person or entity responsible for maintaining, protecting, and managing data or system resources according to established policies.

56. Forest (Dec 2021, Dec 2022)

Collection of Active Directory domains sharing common schema, configuration, and global catalog, representing security boundary.

57. Screen saver settings (Dec 2021)

Security configuration activating screen protection after idle time, often requiring password for reactivation.

58. Finger prints (Dec 2021)

Biometric authentication method using unique finger ridge patterns for secure user identification and access control.

59. Expand LDAP and give its importance (at least 2) (Dec 2022)

Lightweight Directory Access Protocol Importance:

1. Provides standardized directory access across platforms
2. Enables centralized user authentication and authorization

60. Active Directory (Dec 2022)

Microsoft's directory service providing centralized authentication, authorization, and resource management for Windows networks.

61. Encryption (Dec 2022)

Process of converting data into coded format to prevent unauthorized access, ensuring data confidentiality and security.

62. Kerberos (May 2022)

Network authentication protocol using tickets to provide secure authentication between clients and servers.

63. Expand GPO and give its uses (May 2022)

Group Policy Object Uses:

1. Centralized configuration management for users and computers
2. Security settings enforcement across network

64. Organization Unit of a data (May 2023)

Container within Active Directory domain organizing users, groups, and computers for administrative delegation and policy application.

65. Structure of GPO (May 2023)

Hierarchical organization: Local → Site → Domain → Organizational Unit policies, with inheritance and precedence rules.

66. Trust Relationships (May 2023)

Security relationships between domains or forests allowing users to access resources across domain boundaries.

67. Identity protocol standards (May 2023)

Standardized protocols for authentication and authorization: Kerberos, LDAP, SAML, OAuth providing secure identity management.

68. Security Boundary (May 2023)

Logical perimeter defining scope of security policies and access controls, typically at forest level in Active Directory.

69. TGT (July 2019)

Ticket Granting Ticket - Kerberos authentication ticket allowing user to request service tickets without re-authentication.

70. Creation of GPO (July 2019)

Process of creating Group Policy Objects using Group Policy Management Console for centralized configuration management.

71. LDAP (July 2019)

Lightweight Directory Access Protocol - Standard for accessing directory information services over TCP/IP networks.

72. Encryption (July 2019)

Security technique converting plaintext data into ciphertext using algorithms and keys to protect information confidentiality.

73. Enterprise (May 2021)

Large-scale business organization with complex IT infrastructure requiring centralized management and security policies.

74. Kerberos (May 2021)

Secure network authentication protocol using symmetric key cryptography and trusted third-party authentication server.

75. RSA (May 2021)

Public-key cryptographic algorithm used for secure data transmission and digital signatures in enterprise security systems.

UNIT 5: Cloud Computing

76. Characteristics of Cloud Computing (Dec 2019)

Key features: On-demand self-service, broad network access, resource pooling, rapid elasticity, measured service.

77. Data Security (Dec 2019)

Protection of digital information from unauthorized access, corruption, or theft through encryption, access controls, and security policies.

78. Types of Clouds (Dec 2020)

- **Public**: Shared infrastructure, cost-effective
- **Private**: Dedicated infrastructure, enhanced security
- **Hybrid**: Combination of public and private clouds

79. Multi tenancy Model (Dec 2021)

Cloud architecture where single software instance serves multiple customers (tenants) while maintaining data isolation.

80. Auditing and compliance (Dec 2022)

Systematic evaluation of cloud services against regulatory requirements and security standards to ensure adherence.

81. Securing the Cloud (Dec 2022)

Comprehensive security measures protecting cloud infrastructure, applications, and data from threats and vulnerabilities.

82. Cloud Computing (May 2022, May 2021)

On-demand delivery of computing services over internet, providing scalable resources without direct management.

83. Securing Data (May 2022)

Protecting information in cloud through encryption, access controls, backup, and security monitoring.

84. Tenancy (May 2023)

Cloud service model defining how resources are shared among customers: single-tenant or multi-tenant architectures.

85. Types of cloud (July 2019)

Deployment models: Public (shared), Private (dedicated), Hybrid (combined), Community (shared by group).

86. Cloud Security (July 2019)

Comprehensive protection of cloud computing environments through security controls, policies, and monitoring systems.

87. Encryption (July 2019)

Data protection technique converting information into unreadable format using cryptographic algorithms and keys.