Active Directory

1. **Explain the concept of Active Directory.**
   Active Directory (AD) is a Windows OS directory service that facilitates working with interconnected, complex and different network resources in a unified manner
2. **What is the purpose of deploying Active Directory?**
3. **Differentiate between a local server and a domain controller.**
   A local server is a server that is running in a local or a mounted folder and whose document root is NOT the parent of the project root. To configure access to the server in this set-up, you need to specify the following: The server configuration root folder and the URL address to access it.
   On Microsoft Servers, a domain controller (DC) is a server computer that responds to security authentication requests (logging in, checking permissions, etc.) within a Windows domain.
4. **Explain the difference between a tree and a forest in Active Directory.**
   The forest-and-tree model is a logical structure for interconnecting multiple network domains in Windows 2000 and later operating systems. A tree is a set of domains sharing a common network configuration, schema and global catalog. A forest consists of one or more trees that do not form a contiguous namespace.

Server Installation

5. **Study the step-by-step procedure for installing a network server.**
6. **Name the latest version of the windows 2012 server operating system and the different editions of the server operating system.** Windows Server 2003, Windows Server 2003 R2, Windows Server 2008, Windows Server 2008 R2, Windows Server 2012, Windows Server 2012 R2, Windows Server 2016
7. **Name the Windows 2012 Server edition used in the lab.** R2
8. **Explain the use of dual-boot for booting different operating systems and the significance of the booting order.** A dual boot system is a computer that can boot into two different operating systems. While most computers automatically load a specific operating system (OS) at startup, a dual boot system allows you to choose what OS you would like to load**.**
9. **How can one change the booting order?** Enter the BIOS and change booting sequence
10. **Explain the primary difference between the FAT32 and NTFS 5.0 file systems.** A FAT stand for File Allocation Table and FAT32 is an extension which means that data is stored in chunks of 32 bits. These are an older type of file system that isn't commonly used these days. NTFS stands for New Technology File System and this took over from FAT as the primary file system being used in Windows.
    FAT32 can be converted to NTFS but it is not so easy to convert NTFS back to FAT. NTFS has great security, file by file compression, quotas and file encryption. If there is more than one operating system on a single computer, it is better to format some volumes as FAT32.
    Using multiple operating systems in same computer would make FAT32 a better choice if you want both OSs to read the drive. If there is only Windows OS, NTFS is perfectly fine. Thus in a Windows computer system NTFS is a better option.
11. **Describe the purpose of partitioning a disk? Can a partition be used entirely for data?** Disk partitioning or disk slicing. is the creation of one or more regions on a hard disk or other secondary storage, so that an operating system can manage information in each region separately. Partitioning is typically the first step of preparing a newly manufactured disk, before any files or directories have been created.
12. **Name the different types of disk partitions? Examples include the primary and extended partitions. Where the operating system is normally installed?** Primary partition and extended partition, maybe logical partition
13. **Describe the procedure for creating a user account the Windows 2012 Server?** Click Start, click Administrative Tools, and then click Active Directory Users and Computers. The Active Directory Users and Computers MMC opens. If it is not already selected, click the node for your domain. In the details pane, right-click the folder in which you want to add a user account. Where? Active Directory Users and Computers/domain node/folder, Point to New, and then click User. In First name, type the user's first name. In Initials, type the user's initials. In Last name, type the user's last name. Modify Full name to add initials or reverse the order of first and last names. In User logon name, type the user logon name. Click Next. In New

Object - User, in Password and Confirm password, type the user's password, and then select the appropriate password options. Click Next, review the new user account settings, and then click Finish.

What are the different types of pre-built user groups in Windows 2012? Examples include Administrator, Backup Operator, and Account Manager Privileges. Account Operators, Administrators, Backup Operators, Guests, Power Users, Print Operators, Replicator, Server Operators, Users

Groups: Cert Publishers, DHCP Administrators, DHCP Users, DnsAdmins, DnsUpdateProxy, Domain Admins, Domain Computers, Domain Controllers, Domain Guests, Domain Users, Enterprise Admins, Group Policy Creator Owner, RAS and IAS Servers, Schema Admins, WINS Users.

Explain the actions a person can perform as an Administrator, a Backup Operator and an Account Manager. Administrator is a predefined account that provides complete access to files, directories, services, and other facilities. You can't delete or disable this account. In Active Directory, the Administrator account has domain-wide access and privileges. Otherwise, the Administrator account generally has access only to the local system. Although files and directories can be protected from the Administrator account temporarily, the Administrator account can take control of these resources at any time by changing the access permissions. Access this computer from the network Allow logon locally Back up files and directories Bypass traverse checking Log on as a batch job Restore files and directories Shut down the system**.**

Server administrative tools

Study the different components of a server management console. The management console is abbreviated as MMC to mean Microsoft Management Console. Microsoft® Management Console (MMC) is an extensible common presentation service for management applications. MMC is included in the Windows® 2000 operating system. This paper introduces MMC, and provides an overview of the MMC user interface, and the MMC architecture. It also explains the concept of management snap-ins, and how they relate to the console.

What is the purpose of an event viewer? Event Viewer allows you to monitor events in your system. It maintains logs about program, security, and system events on your computer. You can use Event Viewer to view and manage the event logs, gather information about hardware and software problems, and monitor Windows 2000 security events.

What are the different color codes that can be attributed to an event? What do color codes such as blue or red mean? Blue = info, yellow= warning. Red= error

How is a critical error marked in the Event Viewer? Red

What are some of the usages of the Device Manager? Device Manager is an extension of the Microsoft Management Console that provides a central and organized view of all the Microsoft Windows recognized hardware installed in a computer. Device Manager is used to manage the hardware devices installed in a computer like hard disk drives, keyboards, sound cards, USB devices, and more.

Can a device manager be used for troubleshooting the different component of server? Yes

Server Configuration and Management

What is meant by a file sever role? In computing, a file server (or fileserver) is a computer attached to a network that has the primary purpose of providing a location for shared disk access, i.e. shared storage of computer files (such as documents, sound files, photographs, movies, images, databases, etc.)

Differentiate between roles, features and services. Roles: A server role is a set of software programs that, when they are installed and properly configured, lets a computer perform a specific function for multiple users or other computers within a network. Generally, roles share the following characteristics.

Role services: Role services are software programs that provide the functionality of a role. When you install a role, you can choose which role services the role provides for other users and computers in your enterprise. Some roles, such as DNS Server, have only a single function, and therefore do not have available role services. Other roles, such as Remote Desktop Services, have several role services that can be installed, depending on the remote computing needs of your enterprise.

Features: Features are software programs that, although they are not directly parts of roles, can support or augment the functionality of one or more roles, or improve the functionality of the server, regardless of which roles are installed. For example, the Failover Clustering feature augments the functionality of other roles, such

as File Services and DHCP Server, by allowing them to join server clusters for increased redundancy and improved performance. Another feature, Telnet Client, lets you communicate remotely with a telnet server over a network connection, a functionality that enhances the communication options of the server.

Give some examples of commercially available media servers and web servers. Examples of commercial web servers include the IIS server or service and the Apache server.

Name a web server that can be installed on a Windows server. What are some of the advantages of using an Apache server? The main benefits / advantages:- A very long history of reliability and performance. - Mass adoption means here is a LOT of documentation out there and it is very easy to get help with any trouble you might run in to. - It is free and commercial friendly - no licensing fees or costs. - It will run on pretty much any OS (Linux, Windows and MacOS) - It is actively maintained. The last release is 2.4.10 - released at the end of July. - It is one of the most feature rich web servers available. There isn't much it can't do.

Can a server be managed remotely? If so, what is the procedure to enable the server to be managed remotely? These are the steps for enabling remote administration of your IIS server. 1 Install the Web Management Service (WMSVC). 2. Enable remote connections. 3. Optionally set other configuration, e.g.: a. HTTPS binding (port, IP address, and/or SSL certificate) b. IP and domain restrictions. 4. Start WMSVC, and optionally change the service Startup Type from Manual to Automatic

Managing services and applications

What are the different startup options that are available for a service? The following options govern startup behavior for SQL Anywhere services. You can set them on the General tab of the Service Properties window.
Automatic If you choose the Automatic setting, the service starts whenever the Windows operating system starts. This setting is appropriate for database servers and other applications running all the time.
Manual If you choose the Manual setting, the service starts only when a user with Administrator permissions starts it. For information about Administrator permissions, see your Windows documentation.
Disabled If you choose the Disabled setting, the service does not start.

Explain how a telnet server and a telnet client can be activated on a computer. in the Windows Features window, check the Telnet Client option, press OK and wait for it to be installed. When done, press Close. There is no need to restart your computer.

Server Storage Management

Names some of the server storage management features that are available in the Windows 2012 OS. An example is the disk defragmentation process.

What are some of the file systems that can be used while formatting a disk partition on a server? FAT NTFS

Describe the purpose of a primary, a secondary and an extended partition.

A disk drive can contain a maximum of four primary partitions or three primary partitions and a single extended partition.

Only a single extended partition can be contained in a hard disk. But the extended partition could be subdivided in to several partitions called logical partitions. Extended partition acts as a container for logical partitions.

Can disk quote be allocated on a server for each user? Yes

Section 2: Web Server IIS

What is meant by a role of a server? Windows Server 2008 is designed around certain roles and features. A role is a primary duty that a server performs. For example, you typically would point at a server and say "that's my domain controller (DC) and DNS server." A feature is something that helps a server perform its primary duty (Windows Backup, network load balancing). Certain roles are comprised of sub-elements called Role Services, which are distinct units of functionality. For example, within the role of Terminal Services, is the TS Gateway and TS Licensing Role Services (among others)

Name some of the role services that are related to IIS. Common HTTP Features, Application Development Features, health and Diagnostics features, Security Features, Performance Features, Management Tools, File Transfer Protocol (FTP) Server Features.

Describe the purpose of installing the Windows authentication feature in the case of the web server. The

<windowsAuthentication> element defines configuration settings for the Internet Information Services (IIS) 7 Windows authentication module. You can use Windows authentication when your IIS 7 server runs on a corporate network that is using Microsoft Active Directory service domain identities or other Windows accounts to identify users. Because of this, you can use Windows authentication whether or not your server is a member of an Active Directory domain.

What is the default port number for web services? 80

Study the different ways in which a web site can be hosted on a web server. Examples include binding the site to different port numbers etc.

Explain the term Uniform Naming Convention (UNC). Provide a sample use of UNC. he Universal Naming Convention (UNC) is a way to identify a shared file in a computer without having to specify (or know) the storage device it is on. In Windows operating systems, Novell NetWare, and possibly other operating systems, the UNC can be used instead of the local naming system (such as the DOS naming system in Windows).

What are the different types of accesses that can be given to a web site? In this case, differentiate between read access, write access, directory redirect access etc.

Name some file formats for a home page. Examples include default.html, index.html etc.

What is meant by a Host header? a host header is a third piece of information that you can use in addition to the IP address and port number to uniquely identify a Web domain or, as Microsoft calls it, an application server. For example, the host header name for the URL http://www.ideva.com is www.ideva.com.

47. **Is it Possible to run multiple websites using different host headers?** yes
48. **What is the role played by a DNS server when host headers are used in accessing a website?** DNS Server Role. Domain Name System (DNS) is a system for naming computers and network services that is organized into a hierarchy of domains. TCP/IP networks, such as the Internet, use DNS to locate computers and services through user-friendly names.
49. **What is the purpose of an FTP server?** The File Transfer Protocol (FTP) is a standard network protocol used to transfer computer files between a client and server on a computer network. FTP is built on a client-server model architecture and uses separate control and data connections between the client and the server.
50. **What are the different ways in which access to a FTP site be provided?** An example in this case would be to redirect the access to another FTP site on another FTP server.
51. **What is meant by a virtual web directory?** A virtual directory is a directory name (also referred to as path) that you specify in Internet Information Services (IIS) 7 and map to a physical directory on a local or remote server. ... However, an application can have more than one virtual directory.
52. **How is a virtual web directory created?** In IIS Manager, expand the local computer and the Sites folder, and then find the Web site that you want to add a virtual directory for. Use the following steps:
    For , right-click the site or folder where you want to create the virtual directory, and then click Add Virtual Directory
    For Windows Server 2008, right-click the site or folder where you want to create the virtual directory, click Manage Web Site, and then click Add Virtual Directory.
    In the Add Virtual Directory dialog box, specify the following information:
    Alias. Type a name for the virtual directory. Choose a short name that is easy to type, because the user types this name to access the Web site.
    Physical Path. Type or browse to the physical directory that contains the virtual directory. You can select an existing folder or create a new one to contain the content for the virtual directory.
    To provide credentials to connect to a UNC path, click the Connect as button. click OK.
53. **What is meant by directory browsing?** Enable directory browsing when you want client browsers to display a Web page that lists the contents of a directory when a request does not specify a document name and IIS cannot return a default document. A default document cannot be returned when IIS does not find a file in the directory that matches a file name specified in the IIS default document list, or when the Default Document feature is disabled in IIS.

54. **Describe the information that is usually stored in a log file.** a logfile is a file that records either events that occur in an operating system or other software runs, or messages between different users of a communication software.[citation needed] Logging is the act of keeping a log. In the simplest case, messages are written to a single logfile.
55. **Name some protocols/procedures/processes that relate to providing access to a web server.** An example in this case would be the https access or the SSL access that can be given to a web server.

Section 3: FTP server

What are the different types of accesses that can be given to a FTP site? The File Transfer Protocol (FTP) is a standard network protocol used to transfer computer files between a client and server on a computer network.

FTP is built on a client-server model architecture and uses separate control and data connections between the client and the server.[1] FTP users may authenticate themselves with a clear-text sign-in protocol, normally in the form of a username and password, but can connect anonymously if the server is configured to allow it. For secure transmission that protects the username and password, and encrypts the content, FTP is often secured with SSL/TLS (FTPS). SSH File Transfer Protocol (SFTP) is sometimes also used instead, but is technologically different.

81. **Name a few client software available for facilitating and managing access to a FTP site.** Note that access to a FTP site can be initiated using command line commands as well. SSH, SFTP
82. **Is it possible to interact with a FTP site using commands?** In this case, what are the different types of commands that can be used for accessing a FTP site? SSH, SFTP
83. **There are two different groups of commands that can be used for accessing a FTP site**. One is known as the UNIX commands and the other is known as the MS-DOS commands. What is the difference between the two set of commands?
84. Can a FTP site be configured to display a banner while initially connecting to a FTP site and to display a good bye message after ending a session with the FTP site?
85. **Once again, study the different types of access privileges that can be given to access a FTP site.** Examples include Read only access, Write only access etc.
86. **What are the default port numbers for the FTP Protocol?** 21
87. **What are the different ways in which a FTP site could be created**? An example would be the creation of a FTP site using the FTP wizard.
88. **How is the FTP site permission given to the home directory or what are the different types of permissions that can be given to a FTP site?** An example would be the Read permission.
89. **What are the different ways of handling a request for access to a FTP site?** For example, a request to access a FTP site can be directed to another FTP site on another computer or it can be directed to a URL.
90. **Explain the different types of access privileges that could be given to access a FTP site**. Examples include Read permission, Read and Write permission etc.

Section 4: Media Server Media Streaming

99. **Which one of the three types of streaming would require the least bandwidth?** Multi maybe
100. **How does a client access the media server to stream and play media file?**
101. **Study the different types of files that can be stored in a folder associated with a publishing point. In this case, differentiate between streaming and non-streaming file formats.** For example, jpg files can be stored in the folder, but they cannot be streamed.
102. **Name some of the different ways in which a media file can be produced. In other words, how can we create a media file for streaming**? An example would be use Adobe Flash to create streaming file.
103. **What are some of the limitations that can be placed on a media server?** Examples include the limitation on the bandwidth, the number of connections that are allowed at the same time etc.
104. **What is the language that can be used for creating a playlist?** In this case, focus on the SMIL language?

Media Server Installation and Management

110. **What are some of the protocols that can be used for accessing the media stored on a media server? In other words, what are the different protocols that can be used for accessing streamed media, media files etc. hosted on a media server?** An example in this case is the MMS (Microsoft Media Server Protocol) protocol. Incidentally MMS is the proprietary Microsoft protocol. Is it also possible to access a media server with the http protocol for steamed media?

111. What are the different types of media modules that can be stored on a media server for streaming? An example would be the mp4 media module.

112. What is meant by digital rights management? Digital rights management (DRM) is a systematic approach to copyright protection for digital media. The purpose of DRM is to prevent unauthorized redistribution of digital media and restrict the ways consumers can copy content they've purchased.

113. Describe the process known as multiple bit-rate streaming. Adaptive bitrate streaming is a technique used in streaming multimedia over computer networks. ... It works by detecting a user's bandwidth and CPU capacity in real time and adjusting the quality of a video stream accordingly. It requires the use of an encoder which can encode a single source video at multiple bit rates.

114. Name some of the different ways in which a media server can be configured. For example, a media server can be configured separately from a web server or it can be installed along with a web server on the same computer**.**

115. Explain the term constant bit rate encoding. Constant bitrate (CBR) is a term used in telecommunications, relating to the quality of service. Compare with variable bitrate. When referring to codecs, constant bit rate encoding means that the rate at which a codec's output data should be consumed is constant.

Section 5: DHCP Server

124. Explain some of the different tasks performs by a DHCP server. The Dynamic Host Configuration Protocol (DHCP) is a network protocol used to assign IP addresses and provide configuration information to devices such as servers, desktops, or mobile devices, so they can communicate on a network using the Internet Protocol (IP)

125. Can some IP address be excluded from the scope? scope is a valid range of IP addresses that are available for assignment or lease to client computers on a particular subnet. In a DHCP server, a scope is configured to determine the address pool of IPs that the server can provide to DHCP clients.

126. How are leased given to different types of clients? For example, a laptop client or a tablet client that is connected to a network for a short duration may be issued a lease for a short duration of time.

127. What are the different ways in which a DHCP server can be implemented? An example in this case is the implementation of a DHCP server in a hardware such as an Access Point or in software such as the Windows 2012 Server operating system? Note that once a DHCP server is installed in a Windows 2012 Server, it needs to be activated to issue the IP addresses.

128. What are the different types of TCP/IP parameters that a DHCP server can issue to a client? Dynamic allocation, Automatic allocation, Manual allocation (commonly called static allocation)

129. What is a lease duration? When a network device requests an IP address and a DHCP server responds with one, it's called an address lease. Like a lease on a car or apartment, a DHCP IP address lease has a fixed duration, and before it expires the lease must be renewed**.**

How is security enforced when issuing an IP address to a computer? In the case, explain the use of MAC addresses to restrict access to a network.

130. Give an example of a hardware that is also a DHCP server? modem

Section 6: DNS Server

Explain the term forward lookup zones in relation to a DNS server. A forward lookup zone is the most common type of zone. DNS clients can use this zone to obtain such information as IP addresses that correspond to DNS domain names or services that is stored in the zone. Another type of zone, a reverse lookup zone, provides mapping from IP addresses back to DNS domain names.

Explain the term backward lookup zone in relation to a DNS server. in which clients use a known IP address

and look up a computer name based on its address. A reverse lookup takes the form of a question, such as "Can you tell me the DNS name of the computer that uses the IP address 192.168.1.20

143. Explain the term "A record". What is the composition of an "A record"? Records are the most basic type of DNS record and are used to point a domain or subdomain to an IP address. Assigning a value to an A record is as simple as providing your DNS management panel with an IP address to where the domain or subdomain should point and a TTL.

144. Explain the term "MX Record". What is the composition of a "MX Record"? Mail Exchanger (MX) records are used to help route email according the domain owners preference. The MX record itself specifies which server(s) to attempt to use to deliver mail to when this type of request is made to the domain. They differ from A Records and CNAMEs in the way that they also require a "priority" value as a part of their entry. The priority number is used to indicate which of the servers listed as MX records it should attempt to use first.

What is meant by the term Scavenging? DNS scavenging refers to a technique used in DNS servers that allows the cleaning of outdated information used by the DNS server to find resources. This functionality is available in Windows DNS servers and helps automate the removal of obsolete records.

know some of the clients supported by windows server 2012 (all clients up to windows 10)
different ways of installing windows OS (flash drives, cds, etc.)
can you activate 1 or more protocols on server? (yes)
different licensing schemes? (per seat, per user?)
primary partition and secondary partition what's
the primary one for? (OS?)
what are diff ways a windows server can function as standalone or a domain controller?
what are some components of AD? (look at role)
what are some pw change options? (change at exit?)
what privileges do (admin, server op, backup op) have?
what are some of the things that can be associated with server mgmt (setting up features, roles, and etc.)
in disk utilities, what can you do? (right click on disk defragment,
$ is an administrative share, created when you install
they can get to your computer any time even if you don't give them access to your C drive
what are services? can you stop start? how do you do? can be manual, automatic
what is FQDN? A fully qualified domain name (FQDN) is the complete domain name for a specific computer, or host, on the Internet. The FQDN consists of two parts: the hostname and the domain name. For example, an FQDN for a hypothetical mail server might be mymail.somecollege.edu
what is an event viewer? critical events marked as red, noncritical/ warning is yellow event viewer is for many things running different security applications, maintain event logs
how do you start and stop a share? (through computer mgmt).
give examples of disk mgmt activity (backing up, partitioning)
logical drives on extended partition
what are some files that don't become fragmented? system files.
what is SMTP? default port #s for different protocols (FTP, HTTP, SMTP, etc.)
a few website access permissions (read, execute, etc)
what would you do to provide authenticated access
what is UNC? \\computername\etc.
how to stop all services? IIS RESET
when someone acceses ur website, you can send them to website or redirect
when installing a webserver, you install roles, features, role services, systems services, etc.
sometimes someone can't access your FTP... why? usually it's the firewall. you haven't opened the firewall, so
can you direct access to an FTP server based on IP address and other things? (yes)
advantage of using a desktop to access VMs? (can run on almost any client)
diff b/w fat & thin client?
A fat client (sometimes called a thick client) is a networked computer with most resources installed locally,

rather than distributed over a network as is the case with a thin client.
A thin client is a lightweight computer that is purpose-built for remote access to a server (typically cloud or desktop virtualization environments). It depends heavily on another computer (its server) to fulfill its computational roles.
hat can you program the DHCP server to issue/lease? (ip addresses and other things)
diff ways to implement DHCP server? (hardward, software, etc.)
if you have AD you must have DNS (automatically installed with AD)