Chapter 5 – Microsoft Windows Server 2008 Network Infrastructure

✅ Part I: Short Questions

Q1. How does network infrastructure means?

- **Network infrastructure** refers to all the hardware, software, and services that enable network connectivity, communication, and management.
- Example: Switches, routers, servers, cables, DNS, DHCP.

Q2. What is the major function of Network infrastructure?

- To provide **efficient, reliable, and secure communication** between devices and applications.

Q3. What are the networking features?

1. File sharing.
2. Print sharing.
3. Internet access.
4. Centralized authentication (Active Directory).
5. Remote access (VPN).

Q4. Difference between network hardware and software services?

Hardware	Software Services
Physical devices (router, switch, NIC).	Programs that manage connectivity (DNS, DHCP, AD DS).
Provides connectivity.	Provides management and services.

Q5. Shortly describe the function of computer server.

- A server provides **centralized resources and services** such as file storage, applications, user authentication, and printing.

Q6. Define IP address.

- A unique numerical label assigned to each device on a network.
- **Types:** IPv4 (32-bit), IPv6 (128-bit).
- Example: 192.168.1.1

Q7. Define Domain Name Server (DNS).

- A server that translates **domain names into IP addresses** for easier access.
- Example: www.google.com → 142.250.190.78

Q8. Define DHCP Server infrastructure.

- **Dynamic Host Configuration Protocol (DHCP)** automatically assigns IP addresses and other network settings to client computers.

Q9. How to connect a networking?

- Steps:
    1. Install NIC.
    2. Configure IP address and subnet mask.
    3. Connect via cable or Wi-Fi.
    4. Test using ping command.

Q10. Define Network monitoring.

- The process of **observing and analyzing network traffic** to detect performance issues, failures, or security threats.

Q11. What is file management?

- Managing files and folders on a network server including creation, organization, permissions, and backup.

Q12. What is Print management?

- The process of managing **printers and print jobs** in a network through a Windows print server.

✅ **Part II: Long Questions**

Q1. What is server network infrastructure and also describe its features?

- A **server network infrastructure** is the framework that connects hardware, software, and services to support server operations.
- **Features:**
    1. Centralized management.
    2. Scalability (supports more clients).
    3. Security (firewalls, encryption).
    4. Redundancy (backup servers).
    5. High availability.

Q2. What is IP address and describe how to configure IP address?

- **IP Address:** Unique identifier of a device on the network.
- **Configuration Steps in Windows:**
    1. Open **Network and Sharing Center**.
    2. Select **Change adapter settings**.

3. Right-click on network → **Properties**.
4. Select **Internet Protocol Version 4 (TCP/IPv4)**.
5. Enter IP address, subnet mask, default gateway, and DNS.

Q3. What is DNS and also describe how to install DNS server?

- **DNS:** Translates domain names to IP addresses.
- **Installation in Windows Server 2008:**
  1. Open **Server Manager → Roles → Add Roles**.
  2. Select **DNS Server**.
  3. Follow wizard and install.
  4. Configure forward and reverse lookup zones.

Q4. Explain how to connect to the network.

1. Install physical connection (Ethernet/Wi-Fi).
2. Configure IP address and DNS.
3. Join domain or workgroup.
4. Verify connection with ping or browsing shared resources.

Q5. Write down the steps to manage a printer.

1. Open **Control Panel → Devices and Printers**.
2. Right-click printer → select **Printer Properties**.
3. Configure **sharing options** for network access.
4. Assign **permissions** to users/groups.
5. Monitor and manage print jobs via **Print Management Console**.

🌟 **Extra Important Questions**

Q1. Difference between Static IP and Dynamic IP.

- **Static IP:** Manually assigned, fixed.
- **Dynamic IP:** Assigned automatically by DHCP.

Q2. What is Subnet Mask?

- A 32-bit number used to divide an IP address into **network and host portions**.

Q3. What is Default Gateway?

- The router or device that connects a local network to the Internet.

Q4. What is Network Topology?

- The physical/logical arrangement of devices. (Star, Bus, Ring, Mesh).

Q5. What is VPN (Virtual Private Network)?

- A secure encrypted connection between remote client and network over the Internet.