

### 1) How is data transmitted over a network?

Data is transmitted over a network using packet switching.

The message is broken into small packets.

Each packet carries address + data.

Packets travel independently across the network.

At the destination, they are reassembled into the original message.

### 2) What is echo check?

Echo check is an error-detection method.

Sender transmits data.

Receiver immediately echoes it back.

Sender compares echoed data with the original.

If they match → data is correct.

If not → an error occurred. Sender resends the data packet.

### 3) What is a firewall?

**Firewall:** A security barrier that controls incoming and outgoing network traffic based on rules.

**Function:** Blocks unauthorized access, allows safe communication, and protects against threats.

#### Types of Firewalls:

**Hardware Firewall:** A physical device placed between the network and the Internet; often used in organizations for strong, centralized protection.

**Software Firewall:** A program installed on individual computers; monitors and filters traffic on that device.

### 4) What is a computer virus?

A computer virus is a malicious program that can copy itself and spread to other files or systems.

It disrupts normal functions of a computer, and damages data.

Like a biological virus, it needs a “host” (software or file) to multiply.

### **5) What is an antivirus software?**

Antivirus software is a program that protects computers from malicious software (like viruses, worms, and trojans).

Function: It scans files and programs, detects harmful code, removes or quarantines threats, and prevents infections.

It works continuously in the background to keep the system safe.

### **6) What is a spyware?**

Spyware is malicious software that secretly monitors a user's activities.

It collects information like keystrokes, browsing habits, or personal data. Its often installed without the user's knowledge.

### **7) What is an antispware?**

Antispyware is software designed to detect, block, and remove spyware.

It scans the system for hidden spyware programs.

Prevents unauthorized monitoring of user activity.

Protects sensitive data like passwords and personal information.