

Very Short Answer Questions

(i) What is a computer virus?

A computer **virus** is a malicious program designed to copy itself and infect a computer without the user's knowledge or permission.

(ii) Mention a cause of virus infection in computer.

A common cause is **downloading infected files** from the internet or using **infected removable storage devices** like pen drives.

(iii) Write any two examples of computer viruses.

Two examples are Trojan Horse and Worm.

(iv) Write a symptom of computer infected with virus.

A symptom is the computer operating slowly or programs starting without permission.

(v) Suggest a preventive measure of virus infection.

Always install and keep an antivirus program updated on your computer.

(vi) List out any three antivirus programs.

Three antivirus programs are Kaspersky, Quick Heal, and Avast.

Short Answer Questions.

(i) List out the type of computer viruses.

The types of computer viruses are generally classified based on their behavior or where they hide:

- **Boot Sector Virus:** Infects the master boot record (MBR) of the hard disk.
- **Program/File Infector Virus:** Attaches itself to executable files like those with **.exe** or **.com** extensions.
- **Macro Virus:** Written in a macro language like the one used in MS Word or Excel and infects document files.
- **Polymorphic Virus:** Changes its code every time it infects a new system to avoid detection by antivirus software.
- **Trojan Horse:** A deceptive program that appears harmless but is actually designed to cause damage.
- **Computer Worm:** A self-replicating program that spreads over a network without needing to attach to a file.

(ii) List out the antivirus programs.

Antivirus programs are essential tools for computer security. Some well-known examples include:

1. Norton AntiVirus
2. McAfee Total Protection
3. Kaspersky Anti-Virus
4. Avast Antivirus
5. Quick Heal Total Security
6. Windows Defender

(iii) Distinguish between computer virus and anti-viruses.

Computer Virus	Anti-Virus Program
Malicious program designed to harm or disrupt a computer system.	A software utility designed to protect a computer system.
To replicate, damage files, steal data, or slow down the system.	To detect, prevent, and remove computer viruses and other malware.
Causes negative symptoms like data loss, system crashes, or slow performance.	Provides protection and restores system health by cleaning infections.
Spreads unintentionally through infected files, links, or drives.	Must be intentionally installed and regularly updated by the user.

(iv) How can you say a computer is virus-infected?

You can suspect a computer is virus-infected if you observe one or more of these symptoms:

- The computer runs very slowly or freezes frequently.

- Unusual error messages or graphic displays appear on the screen.
- Programs start automatically or close unexpectedly.
- The size of files increases without you adding any content.
- Your antivirus software is disabled or fails to run.
- You notice missing or corrupted files that you didn't delete.

💡 Long Answer Questions (6 Marks)

(i) Explain the computer virus with their types.

A computer virus is a type of malicious software (malware) written to interfere with computer operation. It can replicate itself and attach to legitimate programs or documents, often without the user knowing. Once it successfully attaches itself, the virus can spread to other systems. Its purpose is typically to cause harm, such as corrupting data, slowing down the system, or gaining unauthorized access.

The main types of computer viruses are:

1. Boot Sector Virus:

- **Function:** Targets the **Master Boot Record (MBR)** of the hard disk.
- **Infection:** Infects the system when the computer is started, making it difficult to remove.

2. File Infector Virus (Program Virus):

- **Function:** Attaches itself to executable files like **.exe** or **.com** files.

- **Infection:** Activates when the infected program is run, then looks for other programs to infect.
- 3. **Macro Virus:**
 - **Function:** Written using the macro programming language available in applications like MS Word or Excel.
 - **Infection:** Spreads when an infected document is opened, often targeting the document templates.
- 4. **Trojan Horse:**
 - **Function:** Disguises itself as a useful or harmless program e.g., a game or utility.
 - **Difference:** Unlike true viruses, it does not replicate itself, but it causes damage like creating backdoors for hackers.
- 5. **Computer Worm:**
 - **Function:** A standalone malicious program that **replicates itself** entirely on its own.
 - **Difference:** It spreads very quickly across a network without needing a host file or user action to execute.
- 6. **Polymorphic Virus:**
 - **Function:** Designed to **change its code** or signature every time it replicates.
 - **Effect:** This makes it extremely difficult for traditional antivirus software to detect and quarantine, as its appearance is constantly shifting.