

# System Troubleshooting

## General Troubleshooting Principles

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### Q.1 What is System Troubleshooting?

System Troubleshooting is a vital skill for keeping computers, machines, and other equipment running smoothly.

## Q.2 Why is System Troubleshooting Essential?

Troubleshooting is essential for maintaining the smooth operation of systems, whether they are computers, machines, or other types of equipment.

## Q.3 Which are the steps that help you systematically identify and fix problems?

A systematic approach to troubleshooting involves the following steps:

- ✓ Identify the Problem
- ✓ Establish a Theory of Probable Cause
- ✓ Test the Theory to Determine the Cause
- ✓ Establish a Plan of Action to Resolve the Problem

- ✓ Implement the Solution
- ✓ Verify Full System Functionality
- ✓ Document findings, Actions, and Outcomes

#### **Q.4 Why is System Troubleshooting Important?**

Troubleshooting is very important in computing systems because it helps keep our computer, software, and networks running smoothly.

#### **Q.5 Using a case study where a printer is not printing, explain how you would identify the problem and establish a theory of probable cause.**

If a printer is not working properly, troubleshooting might reveal a simple paper jam that can be fixed easily, rather than needing to replace the entire printer.

## Q.6 What are the basic hardware related issues?

Following are the basic hardware related issues:

- ✓ Cable Disconnection
- ✓ Overheating
- ✓ Peripheral Devices

# Storage Devices Failure & Solutions

## **Q.7 Describe some basic symptoms and diagnostic techniques of RAM failures.**

### **Issue: RAM Failures**

Common signs of RAM issues include frequent system crashes, Blue Screens of Death (BSOD), and poor performance. The computer may also fail to boot or restart randomly.

### **Solution: RAM Diagnostic tools**

Use built-in tools like Window Memory Diagnostic or third-party applications like MemTest86 to check for RAM issues.

## **Q.8 Describe some basic symptoms and diagnostic techniques of Hard Drive failures.**

### **Issue: Hard Drive Failures**

Symptoms of hard drive failures include strange noises (like-clicking), slow performance, frequent crashes, and corrupted files. The computer may also fail to boot or display error messages about the disk.

### **Solution: Hard Drive Diagnostic tools**

Use tools like SMART (Self-Monitoring, Analysis, and Reporting Technology) status checks, or software like CrystalDiskInfo, to monitor hard drive health.

## **Q.9 How can RAM be upgraded? Give Example.**

To upgrade RAM, first determine the type and maximum capacity your motherboard supports. Purchase compatible RAM sticks, power off your computer, open the case, and insert the new RAM into the empty slots.

**Example:** If your computer is slow while multitasking (running multiple applications at

a time), adding more RAM can help improve its performance.

## **Q.10 How to replace a Hard Drive?**

### **Give Example.**

To replace a hard drive, back up your data, purchase a compatible drive, power off your computer, open the case, disconnect the old drive, and connect the new one. After installing the new drive, you will need to reinstall the operating system and restore your data from the backup.

**Example:** If your hard drive is failing, replacing it with a new one can prevent data loss and restore your computer's functionality.

# System & Software Maintenance

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## Q.11 What do you know about space saver?

Keeping your computer's storage clean by deleting unnecessary files is like making space in your room. The more organized your files are, the faster your computer will run, just like a tidy room is easier to navigate.

## Q.12 How would you maintain software?

Software maintenance is an important procedure for ensuring a system's long-term performance, security, and usability after it is released. It includes four types of maintenance:

corrective, adaptive, perfective, and preventative. Keeping software up to date and resolving conflicts is essential for security and performance.

### **Q.13 How to create and manage a strong password?**

Use a combination of upper (A-Z) and lower-case (a-z) letters, numbers (0-9), and special characters (\_ , \$ , % , & , \* , @ , etc.) to create strong passwords. Change passwords regularly and use a password manager to keep track of them.

### **Q.14 How important is managing the storage space?**

Management of storage space is one of the key requirements for data management. It is

important to keep your computer running smoothly and efficiently.

### **Q.15 Describe the impact of cooling and overheating on CPU.**

Computers can overheat if their cooling systems fail. High temperatures can reduce a CPU's lifespan by up to 50%. Proper cooling and regular cleaning can significantly extend a computer's life.