UNIQUE NOTES

COMPUTER — CLASS 10

UNIT 02

SYSTEM RECOVERY AND ADVANCED MAINTENANCE

Topics Covered

1. Introduction to post-troubleshooting
2. Built-in Diagnostic Tools
3. System Recovery Options
4. BIOS/UEFI & Boot Process
5. Data Recovery Techniques
6. Preventive Maintenance

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Unit 02 — System Recovery and Advanced Maintenance

Introduction

This unit explains how to maintain and recover a computer system after troubleshooting. It covers monitoring system health using tools such as Task Manager, Resource Monitor, and Event Viewer, along with recovery options like Safe Mode, System Restore, and bootable drives. The unit also introduces the role of BIOS and UEFI in system startup, basic data recovery methods, and preventive maintenance tasks including disk cleanup, updates, and virus scans.

Q.1 What is post-troubleshooting? Also write down the importance of Continuous maintenance. *[10502001]*

★ **Key Points:** *Post-Troubleshooting | Continuous Maintenance*

Troubleshooting steps, including restarting the system, checking physical connections, and addressing simple issues related to software or hardware and to fix common computer problems. The next step is to learn what actions to take once the issue is resolved. This process is called post-troubleshooting maintenance. It includes additional steps that help the computer continue to work properly and avoid the same problems in the future.

Importance of Continuous Maintenance

Solving a computer problem is only the first step. The system still needs regular care to continue working properly. Without maintenance, the same issue can happen again, or new problems may appear. Regular maintenance keeps the system stable and prevents future problems. It ensures better performance, longer life, and fewer disruptions in computer usage.

Example: *If the computer becomes slow due to full storage, deleting a few files may improve its speed for a short time. However, if unnecessary files are not removed regularly or the system is not updated, the same issue may occur again.*

Q.2 Explain, what problems can occur if a computer is not maintained regularly? *[10502002]*

OR

How computer system performance affected without regular maintenance?

★ **Key Points:** *Impact of Poor Maintenance*

If a computer is not maintained regularly, it may face several problems that affect its performance and reliability. The following issues commonly occur due to a lack of proper maintenance:

1. Slow Performance: Temporary files, unused programs, and background processes can build up over time. If these are not managed, the computer may become slow and unresponsive.
2. System Failures: If important system updates are not installed, the computer may stop working properly. It can freeze, crash, or fail to start.
3. Security Risks: When the system or apps are not updated, harmful software like viruses can enter the computer more easily.
4. Data Loss: Without backups, important files can be lost during crashes or hardware failure.
5. Hardware Damage: Dust and overheating can damage the hardware components if the system is not cleaned or properly ventilated.

Q.3 Why is system health monitoring important for the smooth running of a computer system? *[10502003]*

★ **Key Points:** *Health Monitoring*

System Health Monitoring

For the smooth running of a system, it is important to check its performance regularly. This process is known as system health monitoring. Modern operating systems, such as Microsoft Windows, include built-in tools that help monitor system activity. These tools allow you to:

- Check how much memory and processing power are being used.
- Monitor background applications and services.
- View system warnings and error messages.
- Identify programs that may slow down the computer.

Regular monitoring helps detect small issues before they become serious. By using these tools, users can take timely actions to improve performance and avoid future problems.

Q.4 How do built-in diagnostic tools in modern operating systems help users monitor system performance beyond basic troubleshooting? *[10502004]*

OR

Explain the roles of Task Manager, resource monitor and Event Viewer in system maintenance. Give one example for each tool where it can help to solve a problem.

★ **Key Points:** *Built in Diagnostic Tools | Task Manager | Resource Monitor | Event Viewer*

In addition to basic troubleshooting steps, modern operating systems provide built-in tools to help users monitor system performance in more detail. These tools give useful information about the computer's current state and help identify problems related to memory, storage, processing power, and system errors.

These are three important diagnostic tools available in Microsoft Windows:

6. Task Manager
7. Resource Monitor
8. Event Viewer

Each of these tools plays a different role in resolving system health and performance-related issues.

1. Task Manager

Task Manager is a built-in tool in Microsoft Windows that helps users to monitor the performance of their computers. It shows real-time information about how the system's processor (CPU), memory (RAM), and storage (disk) are being used. The Processes tab of the task manager shows all active programs and how much system resources they are using, while the Performance tab displays detailed graphs for CPU, memory, disk, and network usage.

Example: *If your computer is running slowly, you can open Task Manager to see which application is using too much CPU or RAM (e.g., a browser with many tabs). Ending that task can immediately improve performance.*

There are two simple ways to open Task Manager:

9. Press the Ctrl + Shift + Esc shortcut key from the keyboard
10. Right-click on the taskbar and select Task Manager from the menu

b. What You Can Do with Task Manager?

Task Manager is helpful when your computer is slow, or an application stops responding. It allows you to:

11. See how much processing power and memory are being used by each program.

12. Select a program from the processes tab of task manager and click End Task to close it if it is not working properly.
13. View programs running silently in the background.
14. The performance tab of the task manager shows real-time graphs and data showing how your computer is performing.

(Figure reference: Task Manager Showing Active Processes and System Performance in Windows — Processes tab lists apps with CPU/Memory/Disk/Network usage; Performance tab shows real-time CPU graph.)

2. Resource Monitor

Resource Monitor is an advanced system tool in Microsoft Windows that gives a deeper view of how your computer's resources (memory, CPU, and disk) are being used. While Task Manager gives a quick overview, Resource Monitor provides more detailed information about which programs and background services are using system resources. It is especially helpful when the system is running slowly, overheating, or using a lot of memory without any clear reason.

Example: *If your computer is slow but Task Manager doesn't show a clear reason, open Resource Monitor, check the Disk tab, find a background program heavily using the disk, then stop or investigate it.*

There are two common ways to open Resource Monitor:

15. Open Task Manager, go to the Performance tab, and click on Open Resource Monitor at the bottom.
16. Or press the shortcut key Windows + R, type the command resmon in the dialog box that appears, and press Enter key.

(Figure reference: Resource Monitor to Monitor the Usage of System Resources — shows CPU/Disk/Network/Memory tabs and the Windows+R → resmon step.)

b. Key Features of Resource Monitor

Some key features of the resource monitor are listed below:

17. CPU Tab: Shows which processes and services are using the processor.
18. Memory Tab: Displays how much memory is used, free, or reserved.
19. Disk Tab: Monitors which programs are reading from or writing to the hard drive.
20. Network Tab: Shows which applications are sending or receiving data over the internet or network.

3. Event Viewer

Event Viewer is also a built-in Windows tool that records detailed logs of system activities. It helps users check for errors, warnings, and important events related to software, hardware, and security.

Example: *If Windows crashes or an application keeps failing to start, Event Viewer can show error messages (like "Application X failed to start due to missing DLL"), helping you identify the cause and troubleshoot it.*

DID YOU KNOW?

Q. What do you know about DLL? [10502004a]

Ans. DLL stands for Dynamic Link Library. It is a file that contains code and data that can be used by programs at the same time.

21. Press the shortcut key Windows + R, type the command eventvwr in the dialog box that appears, and press Enter key.

(Figure reference: The Event Viewer to View Upcoming Events Related to System Maintenance — shows Overview and Summary pane with Custom Views, Windows Logs, and Actions panel.)

Q.5 What are the system recovery options? Also write a note on safe mode. *[10502005]*

★ **Key Points:** *System Recovery Options | Safe Mode*

In some cases, basic troubleshooting is not enough to fix a problem. The computer may crash, become unresponsive, or fail to start. To handle such situations, operating systems like Microsoft Windows provide special tools known as system recovery options. These recovery options help restore the computer to a working state without losing important data in most cases.

1. Safe Mode

Safe Mode starts Windows with only the most fundamental drivers and services. It disables unnecessary background programs and startup software, making it easier to fix problems caused by faulty apps or settings.

2. When and How to Use?

Safe Mode is useful when:

- The system keeps crashing or restarting
- A program or driver is causing the computer to freeze
- You need to scan for malware or uninstall a recent app

3. How to open Safe Mode?

Go to Settings > Update & Security > Recovery > Advanced Startup > Restart Now. Then choose Troubleshoot > Advanced Options > Startup Settings > Restart > Press F4 key.

b. On some older systems:
Restart and press F8 key repeatedly before the Windows logo appears. Select safe mode, press Enter key.

4. Safe Mode with Networking

This version of Safe Mode includes network drivers, so you can access the internet. It is helpful when:

- You need to download updates or drivers
- You want to use online help tools
- You want to run a cloud-based antivirus scan

To enter it, follow the same steps as above and press F5 key instead of F4 key.

SMART TIPS
While using safe Mode, follow these precautions:
• Do not change setting unless you understand their purpose.
• Avoid deleting system files; they may be important for Windows to work properly.
• Use only built in or trusted tools to fix issues.
• Restart your computer normally after finishing the task.
• Ask for help from your teacher or IT expert if unsure.
• Safe Mode is powerful, but it should be used carefully.

Q.6 Explain the concept of System Restore. What are restore points? Also, describe the steps to create a restore point and the steps to use a restore point in case of system problems. *[10502006]*

★ **Key Points:** *System Restore | Bootable Recovery Media*

1. System Restore

System Restore allows you to take your computer back to an earlier state without deleting personal files. It works by using restore points, which are saved versions of your system created before major changes.

2. What are the Restore Points?

A restore point is like a saved snapshot of your system's settings and files. It helps you return your computer to an earlier, working condition if something goes wrong, such as after installing a faulty program or driver. Restore points are made automatically before system updates or driver installations, or manually by the user when it is needed.

3. Steps to Create a Restore Point

Follow these steps to create a restore point manually:

- Click the Start button and open the Control Panel.
- Go to System and Security, then click System.
- On the left, click System Protection.
- In the new window, under the System Protection tab, click the Create button.
- Type a name for your restore point (e.g., "Before installing printer driver") and click Create.
- Wait a few seconds for confirmation. Your restore point is now saved.

4. Steps to Use a Restore Point

If your computer is not working properly, follow these steps to go back to a previous state:

- Open the Control Panel.
- Go to Recovery and click Open System Restore.
- A window will appear showing available restore points.
- Select the most recent restore point when your system was working fine.
- Click Next, then Finish.
- Your system will restart and restore the selected settings.

Q.7 Describe the complete step-by-step procedure to create a bootable USB recovery media using Rufus and a Windows ISO. *[10502007]*

★ **Key Points:** *Bootable Recovery Media*

1. Bootable Recovery Media

A computer may stop working completely and fail to start. In such cases, normal recovery options like Safe Mode and Restore Points may not work. So, in this case, we use bootable recovery media to recover the system.

2. Understanding Bootable Media and Its Uses

Bootable recovery media is a USB (Universal Serial Bus) flash drive or DVD (Digital Versatile Disk) that contains important system files. It helps start the computer from an external device instead of the built-in storage. After starting the system, you can use built-in recovery tools such as:

- Startup Repair to fix problems that prevent Windows from loading.
- System Restore to go back to a working state using a restore point.
- Command Prompt for advanced troubleshooting.

- System Reset or Reinstallation to reinstall the operating system if needed.

3. When We Use Bootable Media

We use this media in such cases where the system:

- Safe Mode is not accessible.
- You need to repair or reinstall the operating system.

4. How to Create a bootable USB?

- Download the system image or installer from the official website of your operating system provider (e.g., Windows ISO (International Organization for Standardization), Linux ISO, or macOS installer).
- Download Rufus (a free USB tool) from its official site (https://rufus.ie/en/), for Windows only. For macOS, you can use its built-in tools like Terminal or Disk Utility.
- Plug in a USB drive (16 GB or more).
- Open Rufus, select the USB and the ISO file.

For Windows or Linux systems, choose GUID Partition Table (GPT) for modern PCs and Master Boot Record (MBR) for older systems. Then click Start to create the bootable USB.

DID YOU KNOW?

Q. What are GPT and MBR, how do they differ in organizing data on a storage drive, and why is GPT preferred over MBR in modern computer systems? [10502007a]

Ans. GPT and MBR are two different methods used to organize data on a storage drive such as hard drives and SSDs. MBR is the older system and supports a maximum disk size of 2 TB with up to four primary partitions. GPT is the modern standard that supports disks larger than 2 TB, allows over 100 partitions, and is required for UEFI-based systems. Due to these advantages, new computers and operating systems now prefer GPT over MBR.

5. How to Check the Partition Style (MBR or GPT)?

To check the Partition Style, you need to:

- Press Win + X and select Disk Management.
- Find the drive where Windows is installed (usually Disk 0).
- Right-click on the disk label (e.g., Disk 0), then choose Properties.
- Go to the Volumes tab.

6. Look at Partition Style

It will show either:

- a. GUID Partition Table (GPT)
- b. Master Boot Record (MBR)

SMART TIPS

If your computer uses GPT, but you create the USB in MBR format, it might not boot at all. The same happens if your system uses MBR and you use a GPT USB.

Q.8 Describe firmware, also write the role of BIOS/UEFI in Computer Startup. *[10502008]*

★ **Key Points:** *BIOS | UEFI | POST Test*

1. Firmware

Firmware is special software stored in hardware memory (usually non-volatile memory like ROM or flash memory). It controls basic computer functions before OS starts. The BIOS/UEFI is an example of firmware. When you press the power button on your computer, several hidden steps take place before the operating system (like Windows) appears on the screen. These early steps are controlled by special built-in software called firmware.

2. Common Types of Firmware

All computers have special software built into the motherboard called firmware. It is not stored on the hard drive and does not get deleted when the computer is turned off. Firmware gives the computer basic instructions on how to start.

Two common types of firmware are:

- a. BIOS — older firmware software shows a basic, text-only menu and works with the keyboard only.
- b. UEFI — newer type of firmware software, supports a graphical menu that uses both mouse and keyboard, and larger hard drives.

3. Role of BIOS/UEFI in Starting the Computer

- Checks if the hardware is working correctly (like RAM, keyboard, and hard drive).
- Finds the boot device (USB, hard disk, etc.) and starts the operating system.
- Allows users to change system settings like date, time, and boot order.

DID YOU KNOW?

Q. What is the difference between BIOS and UEFI, and why is UEFI now used in most modern computers? [10502008a]

Ans. BIOS was first developed in the 1980s as the basic system for starting a computer and managing hardware during startup. UEFI, the modern replacement, is now used in most computers because it is faster, more secure, and supports advanced features such as larger drives and a graphical interface, making it more suitable for today's systems.

Q.9 What is the POST test, and how can users access BIOS/UEFI settings to manage boot order or repair startup issues? *[10502009]*

★ **Key Points:** *Post Test | Accessing BIOS | Opening BIOS | Boot Order*

1. The POST Test

POST stands for Power-On Self-Test. It is the first thing the firmware does after the computer is turned ON. POST checks the most important hardware to make sure everything is working properly. If all parts are fine, the computer continues to load the operating system. If something is wrong, it may beep or show an error message on the screen.

Example: *If the RAM is missing, the computer will beep continuously.*

2. Accessing BIOS and resetting to defaults

Sometimes you need to enter BIOS/UEFI to change settings or fix problems.

3. How to Open BIOS/UEFI Settings?

To open this setting, you need to shut down your computer.

- a. Turn it ON and immediately press a key like Del, F2, F10, or Esc (the correct key depends on the brand, like HP, DELL, and MSI).
- b. The BIOS or UEFI screen will appear.

(Figure reference: BIOS/UEFI — Aptio Setup Utility screen showing Main / Advanced / IO / Boot / Save & Exit tabs, with UEFI/BIOS Boot Mode set to Legacy or UEFI.)

4. Resetting to Default Settings

If the wrong settings are saved, you can restore the system to its original state by selecting "Load Setup Defaults" or "Reset to Default" inside BIOS/UEFI settings.

5. Boot order and boot repair

Boot order means the sequence in which the computer looks for a device to load the operating system. For example, it may try the USB drive first, then the hard drive.

6. How to Change Boot Order?

- Enter BIOS/UEFI settings.
- Go to the Boot tab or menu.
- Move your desired device (e.g., USB) to the top of the list.
- Save changes and exit.

Sometimes the computer cannot start due to missing files or errors. This can be fixed by using Startup Repair from Windows recovery USB or DVD.

Q.10 What are the main data recovery techniques, and how do built-in tools and third-party software help recover lost or inaccessible files? *[10502010]*

OR

Explain how deleted files can be recovered using a third-party software. Also, discuss why recovery may not always be successful.

★ **Key Points:** *Built-in Tools | Third-Party Tools | Tenorshare*

Data Recovery Techniques

Sometimes, we delete files by mistake or lose them due to system problems. In many cases, it is possible to recover lost files using built-in tools or with the help of special third-party software. There are two main ways to recover deleted files:

22. Using built-in tools (i.e Recycle Bin)
23. Using third-party software (i.e Tenorshare)

1. Built-in Tools

These tools are already part of the operating system, which is why we call them built-in tools. We will discuss some built-in tools that are available to recover deleted files.

When a file is deleted in Windows, it usually goes to the Recycle Bin. It stays there until the bin is empty. You can open the Recycle Bin, right-click the file, and select Restore to bring it back to its original location.

b. File History

File History is a backup feature in Windows. If it is turned on, the system keeps copies of your files at regular intervals. You can recover files from earlier versions, even if they have been deleted or changed. To turn it on, go to Settings > Update & Security > Backup, connect an external USB or Hard drive, and select "Add a drive". Once enabled, Windows will regularly back up your files like Documents, Pictures, and Desktop on that drive.

c. Previous Versions

This feature allows you to recover an earlier version of a file or folder. Right click the file or folder, choose Properties, then go to the Previous Versions tab. If available, you can select and restore an older copy.

2. Third-party tools

Sometimes, deleted files are not found in the Recycle Bin or Previous Versions. In such cases, you can try using third-party recovery software. Tenorshare is a free and easy-to-use file recovery program. It can scan your hard drive, USB, or memory card to find files that were recently deleted. You can then choose which files to recover.

Steps to Use Tenorshare:

- Open Tenorshare, select the location from which you want to recover a file, such as a specific drive or folder.
- Choose the type of file to recover (e.g., pictures, documents).
- Click "Scan" to start searching for lost files.
- Select the files you want to recover and click "Recover" to restore them.

Recovery success depends on how recently the file was deleted and whether new data has overwritten it.

(Figure reference: Tenorshare Data Recovery Tool — shows drive selection screen with Local Disk, System, Big Data drives, and common locations like Recycle Bin, Select Folder, Windows Backup, Desktop.)

b. How deleted files can be recovered using third-party software?

24. Deletion doesn't erase data immediately: When you delete a file, Windows marks the space it occupies as "available" but doesn't remove the actual data.
25. Scanning for recoverable data: Third-party software (like Tenorshare, Recuva, or EaseUS) scans the disk for data that is still physically present but marked as deleted.
26. Restoring the file: Once the software detects the file, it can copy it to a safe location (preferably on a different drive) so the data is recovered without overwriting other files.

c. Why recovery may not always be successful?

27. Overwriting: If new data has already been saved to the space where the deleted file was stored, part or all of the file may be overwritten and unrecoverable.
28. File system damage: Corruption in the disk's file system can make the deleted data unreadable.
29. Time factor: The longer you wait after deleting a file, the higher the chance that new files will overwrite the deleted data, reducing recovery success.

Q.11 What are the limitations of data recovery, and what best practices should users follow to minimize data loss and improve the chances of successful recovery? *[10502011]*

★ **Key Points:** *Limitations of Recovery & Best Practices*

Limitations/Drawbacks of Recovery and Best Practices

While data recovery tools can be helpful, they have the following limitations:

- If a file is deleted a long time ago, it may no longer be recoverable.
- Recovery is not always possible if the hard drive is damaged or formatted.
- Files may be permanently lost if the Recycle Bin is emptied, and no backups were made.

SMART TIPS
1. Never install recovery software on the same drive where your lost file was stored. This may reduce the change of successful recovery.
2. Always check the recycle bin first before trying advanced recovery tools. It is the easiest and safest way to restore deleted files.

Q.12 What are the best practices for preventive maintenance to keep a computer system stable, secure, and efficient? *[10502012]*

OR

Briefly explain any two preventive maintenance techniques that help to keep a computer running smoothly.

★ **Key Points:** *Preventive Maintenance | Disk Cleanup | Patch Management | Windows Defenders | Maintenance Calendar*

1. Best Practices for Preventive Maintenance

Just like we take care of our health or maintain our vehicles, computers also need regular attention to keep working properly. Preventive maintenance means doing simple tasks that help avoid bigger problems in the future. These tasks can improve your computer's speed, keep it secure, and help it last longer.

After some time, the computer collects unnecessary files such as temporary internet files, system cache, Windows update files, and items in the Recycle Bin. These files take up space and may slow down system performance. Disk Cleanup is a built-in Windows tool that helps remove such files safely.

Steps to Perform Disk Cleanup:

- Type Disk Cleanup in the Windows search bar and open the tool from the list. This opens a small window asking you to choose a drive to clean.
- Select the drive you want to clean (usually C:) and click OK.
- Check the boxes from the dialog box that appears after OK, for the types of files you want to delete.
- Click OK to remove the selected files.

(Figure reference: Disk Cleanup Menu — lists Downloaded Program Files, Temporary Internet Files, Windows error reports, DirectX Shader Cache, Delivery Optimization Files, with total disk space to gain shown, e.g. 234 MB.)

2. Patch Management / System Updating

Software updates, also known as patches, are released regularly by developers to fix bugs, add features, and improve security. Keeping your system updated helps to protect it from viruses and security threats. There are two types of updates:

30. Operating system updates (for Windows, macOS, etc.)
31. Application updates (for programs like browsers, media players, etc.)

To check for updates in Windows:

- Open Settings > Update & Security.
- Click Check for updates.
- Install the updates if available.

3. Staying Protected with Windows Defender

Windows Defender is the built-in security tool in Windows that protects your computer from viruses, malware, and other threats. It offers two types of scans.

- a. Quick Scan to check common problem areas.
- b. Full Scan to check the entire system thoroughly.

Windows defender also provides real-time protection, which means it keeps watching your system in the background and alerts you if anything suspicious happens.

4. Keeping a maintenance calendar

It's a good idea to set a regular schedule for basic maintenance tasks. A maintenance calendar helps you remember when to clean your system, scan for viruses, or check for updates. You can write it down or set reminders on your phone or computer.

Q.13 What is the purpose of system documentation and logs, and how do they help in maintaining and troubleshooting a computer system? *[10502013]*

★ **Key Points:** *System Documentation | Troubleshooting | Compliance and Auditing*

System documentation and logs are records that keep track of how a computer system is set up, what changes have been made, what maintenance has been done, and how it is performing. They help in several ways:

32. Tracking Changes: These records show what hardware has been added or changed, what software has been installed, and what settings have been adjusted. This helps people understand what has been done to the system over time.
33. Monitoring Performance: Logs record things like system errors, warning messages, and what applications are doing. This helps find out if there are any repeating problems or possible issues that might come up.
34. Troubleshooting: When something goes wrong, logs give detailed information that can help find the main cause of the problem quickly.
35. Planning Maintenance: By looking at the documentation, people can plan when to update the system, back up data, and do regular checks to prevent problems before they happen.
36. Compliance and Auditing: In work environments, logs and records help make sure the system follows security rules and legal standards.

Keeping accurate records of system documentation and logs ensures that the computer operates efficiently, handles problem quickly and system downtime is minimized.

Topic Wise Short Questions (Additional)

Introduction to Post-Troubleshooting

Q.1 What are the basic troubleshooting steps for a computer system?
Ans. Restarting the system, checking physical connections, and addressing simple issues related to software or hardware to fix common computer problems.

Q.2 What is the next step after a computer problem is resolved? (Define Post Troubleshooting.)
Ans. The next step is to learn what actions to take once the issue is resolved. This process is called post-troubleshooting maintenance. It includes additional steps that help the computer continue to work properly and avoid the same problems in the future.

Q.3 Why is continuous maintenance important after solving a computer problem?
Ans. Solving a computer problem is only the first step. The system still needs regular care to continue working properly. Without maintenance, the same issue can happen again, or new problems may appear. Regular maintenance keeps the system stable and prevents future problems. It ensures better performance, longer life, and fewer disruptions in computer usage.

Q.4 Why regular maintenance is needed?
Ans. If the computer becomes slow due to full storage, deleting a few files may improve its speed for a short time. However, if unnecessary files are not removed regularly or the system is not updated, the same issue may occur again.

Q.5 What are the common problems caused by poor maintenance?
Ans. If a computer is not maintained regularly, it may face several problems that affect its performance and reliability. Poor maintenance can cause frequent crashes, slow performance, overheating, security threats and data loss.

Q.6 What happens to system performance if temporary files, unused programs, and

Q.8 What are the security risks of poor maintenance?
Ans. When the system or apps are not updated, harmful software like viruses can enter the computer more easily.

Q.9 What happens if backups are not maintained?
Ans. Without backups, important files can be lost during crashes or hardware failure.

Q.10 How can poor maintenance affect hardware?
Ans. Dust and overheating can damage the hardware components if the system is not cleaned or properly ventilated.

Q.11 What is system health monitoring?
Ans. For a system to run smoothly, it is important to monitor its performance regularly. This process is known as system health monitoring.

Q.12 How do built-in monitoring tools help you?
Ans. These tools allow you to: check how much memory and processing power are being used, monitor background applications and services, view system warnings and error messages, and identify programs that may slow down the computer.

Q.13 Why is regular system monitoring important?

background processes are not managed?
Ans. Temporary files, unused programs, and background processes can build up over time. If these are not managed, the computer may become slow and unresponsive.

Q.7 What can occur if important system updates are not installed?
Ans. If important system updates are not installed, the computer may stop working properly. It can freeze, crash, or fail to start.

Using Built-in Diagnostic Tools

Q.14 Which operating systems include built-in tools for monitoring system activity?
Ans. Modern operating systems, such as Microsoft Windows, include built-in tools that help monitor system activity.

Q.15 What is the purpose of built-in diagnostic tools in modern operating systems?
Ans. In addition to basic troubleshooting steps, modern operating systems provide built-in tools to help users monitor system performance in more detail. These tools give useful information about the computer's current state and help identify problems related to memory, storage, processing power, and system errors.

Q.16 List the name of three important diagnostic tools available in Microsoft Windows.
Ans. 1. Task Manager 2. Resource Monitor 3. Event Viewer

Q.17 What does Task Manager show?
Ans. It shows real-time information about how the system's processor (CPU), memory (RAM), and storage (disk) are being used. The Processes tab of the task manager shows all active programs and how much system resources they are using,

Ans. Regular monitoring helps detect small issues before they become serious. By using these tools, users can take timely actions to improve performance and avoid future problems.

Q.19 What is Resource Monitor and how does it differ from Task Manager?
Ans. Resource Monitor is an advanced system tool in Microsoft Windows that gives a deeper view of how your computer's resources (memory, CPU, and disk) are being used. While Task Manager gives a quick overview, Resource Monitor provides more detailed information about which programs and background services are using system resources.

Q.20 What are the key features of Resource Monitor?
Ans. 1. CPU Tab: Shows which processes and services are using the processor. 2. Memory Tab: Displays how much memory is used, free, or reserved. 3. Disk Tab: Monitors which programs are reading from or writing to the hard drive. 4. Network Tab: Shows which applications are sending or receiving data over the internet or network.

Q.21 What is the use of Event Viewer?
Ans. Event Viewer is a built-in Windows tool that records detailed logs of system activities. It helps users check for errors, warnings, and important events related to software, hardware, and security.

Q.22 How can Event Viewer be opened?
Ans. To open the event viewer follow the steps: press the shortcut key Windows + R, in the dialog box that appears, type the command eventvwr, press the Enter key.

while the Performance tab displays detailed graphs for CPU, memory, disk, and network usage.

Q.18 What can users do with Task Manager when a program stops responding?

Ans. Task Manager is helpful when your computer is slow, or an application stops responding. It allows you to: see how much processing power and memory are being used by each program, select a program from the Processes tab and click End Task to close it if it is not working properly, view programs running silently in the background, and the Performance tab shows real-time graphs and data showing how your computer is performing.

Q.23 Did ending the task improve system performance? Why do you think that happened?

Ans. This will vary depending on the activity, but based on the text, ending unnecessary background programs can improve system performance because it frees up processing power and memory for other tasks, reducing system slowdowns.

System Recovery Options

Q.24 What are system recovery options used for?

Ans. In some cases, basic troubleshooting is not enough to fix a problem. The computer may crash, become unresponsive, or fail to start. To handle such situations, operating systems like Microsoft Windows provide special tools known as system recovery options. These recovery options help to restore the computer to a working state without losing important data in most cases.

Q.25 What is Safe Mode?

Ans. Safe Mode starts Windows with only the most fundamental drivers and services. It disables unnecessary background programs and startup software, making it easier to fix problems caused by faulty apps or settings.

Q.26 When is Safe Mode useful?

Ans. Safe Mode is useful when: the system keeps crashing or restarting, a program or driver is causing the computer to freeze, or you need to

Q.31 How do you create a restore point manually?

Ans. To create a restore point manually follow the steps: Click the Start button and open the Control Panel, go to System and Security, then click System, on the left click System Protection, in the new window under the System Protection tab click the Create button, type a name for your restore point (e.g., "Before installing printer driver") and click Create, wait a few seconds for confirmation.

Q.32 What is bootable recovery media and why is it used?

Ans. Bootable recovery media is a USB flash drive or DVD that contains important system files. It helps start the computer from an external device instead of the built-in storage. After starting the system, you can use built-in recovery tools such as: Startup Repair to fix problems that prevent Windows from loading, System Restore to go back to a working state using a restore point, Command Prompt for advanced troubleshooting, System Reset or Reinstallation to reinstall the operating system if needed.

Q.33 When should bootable recovery media be used?

Ans. We use this media in such cases where the system includes: Safe Mode is not accessible, or

scan for malware or uninstall a recent app.

Q.27 What is Safe Mode with Networking and when is it used?

Ans. This version of Safe Mode includes network drivers, so you can access the internet. It is helpful when you need to download updates or drivers, you want to use online help tools, or you want to run a cloud-based antivirus scan.

Q.28 What precautions should be taken while using Safe Mode?

Ans. Do not change settings unless you understand their purpose, avoid deleting system files as they may be important for Windows to work properly, use only built-in or trusted tools to fix issues, restart your computer normally after finishing the task, and ask for help from your teacher or IT expert if unsure.

Q.29 What is System Restore?

Ans. System Restore allows you to take your computer back to an earlier state without deleting personal files. It works by using restore points, which are saved versions of your system created before major changes.

Q.30 What is a restore point?

Ans. A restore point is like a saved snapshot of your system's settings and files. It helps you return your computer to an earlier, working condition if something goes wrong, such as after installing a faulty program or driver. Restore points are made automatically before system updates or driver installations, or manually by the user when it is needed.

you need to repair or reinstall the operating system.

Q.34 What is the difference between MBR and GPT?

Ans. MBR is the older system. It supports up to 2 TB of disk size and a maximum of 4 primary partitions. GPT is the modern standard. It supports disks larger than 2 TB, allows over 100 partitions, and is required for UEFI-based systems.

Q.35 How do you check the partition style of a drive?

Ans. Press Win + X and select Disk Management, find the drive where Windows is installed (usually Disk C), right-click on the disk label (e.g., Disk C), then choose Properties, go to the Volumes tab. Look at Partition Style: it will show either GUID Partition Table (GPT) or Master Boot Record (MBR).

Q.36 List the steps to create a bootable recovery drive in Windows.

Ans. Insert the USB into the computer, press the Windows key, type Recovery Drive, and open it, check "Backup system files to the recovery drive" and click Next, select your USB drive and click Next (do not click "Create" in class unless permitted).

Q.37 What does Windows say a recovery drive will help you with?

Ans. The recovery drive will help to restore your computer to a working state and repair problems that prevent Windows from starting.

BIOS/UEFI and Boot Process Awareness

Q.38 What controls the hidden steps when a computer starts before the OS appears?

Ans. These early steps are controlled by special built-in software called firmware.

Q.45 What are the roles of BIOS/UEFI in starting the computer?

Ans. Check if the hardware is working correctly (like RAM, keyboard, and hard drive), finds the boot device (USB, hard disk, etc.) and starts the operating system, and allows users to change

system settings like date, time, and boot order.

Q.39 Where is firmware stored and does it get deleted when the computer is turned off?
Ans. Firmware is built into the motherboard. It is not stored on the hard drive and does not get deleted when the computer is turned off.

Q.40 What does firmware do during startup?
Ans. Firmware gives the computer basic instructions on how to start.

Q.41 Define Firmware.
Ans. Firmware is special software stored in hardware memory (usually non-volatile memory like ROM or flash memory). It controls basic computer functions before OS starts. The BIOS/UEFI is an example of firmware.

Q.42 Write the name of two common types of firmware.
Ans. Two common types of firmware are: 1. BIOS (Basic Input/Output System) 2. UEFI (Unified Extensible Firmware Interface)

Q.43 How is BIOS different from UEFI?
Ans. BIOS is older firmware software that shows a basic, text-only menu and works with the keyboard only, while UEFI is newer, supports a graphical menu that uses both mouse and keyboard, and larger hard drives.

Q.44 What is Boot Sector?
Ans. Boot sector is the first part of a hard disk that contains instructions to start the operating system. BIOS/UEFI reads the boot sector to load the Operating System (OS).

Q.46 When was BIOS first developed and why is UEFI used now?
Ans. BIOS was first developed in the 1980s, while UEFI is now used in most modern computers because it is faster and more secure.

Q.47 What is POST?
Ans. POST stands for Power-On Self-Test. It checks the most important hardware to make sure everything is working properly.

Q.48 What happens if RAM is missing during POST?
Ans. The computer will beep continuously.

Q.49 How can you reset BIOS/UEFI to default settings?
Ans. You can restore the system to its original state by selecting "Load Setup Defaults" or "Reset to Default" inside BIOS/UEFI settings.

Q.50 What does boot order mean?
Ans. Boot order means the sequence in which the computer looks for a device to load the operating system.

Q.51 How do you change the boot order in BIOS/UEFI?
Ans. Enter BIOS/UEFI settings, go to the Boot tab or menu, move your desired device (e.g., USB) to the top of the list, and save changes and exit.

Data Recovery Techniques

Q.52 What are the main ways to recover deleted files?
Ans. There are two main ways to recover deleted files: 1. Using built-in tools 2. Using third-party software.

Q.53 What happens to a file when it is deleted in Windows?

Q.58 What does recovery success depend on when using software like Tenorshare?
Ans. It depends on how recently the file was deleted and whether new data has overwritten it.

Q.59 What are the limitations of data recovery tools?

Ans. It usually goes to the Recycle Bin and stays there until the bin is empty.

Q.54 How can you restore a file from the Recycle Bin?
Ans. Open the Recycle Bin, right-click the file, and select Restore to bring it back to its original location.

Q.55 What is File History in Windows?
Ans. File History is a backup feature that keeps copies of your files at regular intervals and allows recovery of deleted or changed files.

Q.56 How do you turn ON File History?
Ans. To turn ON file history follow the steps: Go to Settings > Update & Security > Backup, connect an external USB or Hard drive, and select "Add a drive".

Q.57 How does Tenorshare recover files?
Ans. Open Tenorshare, select the location, choose file type, click Scan, then select and click Recover to restore files.

Ans. Files deleted a long time ago may not be recoverable, recovery may fail if the hard drive is damaged or formatted, and files may be permanently lost if the Recycle Bin is empty and no backups were made.

Q.60 Why should you avoid installing recovery software on the same drive as the lost file?
Ans. Installing recovery software on the same drive may reduce the chance of successful recovery.

Q.61 What is the safest first step before using advanced recovery tools?
Ans. Always check the Recycle Bin first, as it is the easiest and safest way to restore deleted files.

Q.62 Where should you save the recovered file in the Tenorshare activity?
Ans. Save it to another folder, e.g., Documents.

Q.63 What is Tenorshare?
Ans. It is a software company that develops tools for data recovery, phone repair, and system recovery.

Best Practices for Preventive Maintenance

Q.64 What is preventive maintenance for computers?
Ans. Preventive maintenance means doing simple tasks that help avoid bigger problems in the future. These tasks can improve your computer's speed, keep it secure, and help it last longer.

Q.65 Why do computers need preventive maintenance?
Ans. Just like we take care of our health or maintain our vehicles, computers also need regular attention to keep working properly.

Q.71 How can you check for updates in Windows?
Ans. Open Settings > Update & Security. Click Check for updates. Install the updates if available.

Q.72 What is Windows Defender?
Ans. Windows Defender is the built-in security tool in Windows that protects your computer from viruses, malware, and other threats.

Q.66 What kinds of files can slow down a computer over time?
Ans. Temporary internet files, system cache, Windows update files, and items in the Recycle Bin.

Q.67 Which tool removes unnecessary files safely in Windows?
Ans. Disk Cleanup is a built-in Windows tool that helps remove such files safely.

Q.68 What are software updates (patches) used for?
Ans. Software updates, also known as patches, are released regularly by developers to fix bugs, add features, and improve security.

Q.69 Why is it important to keep your system updated?
Ans. Keeping your system updated helps to protect it from viruses and security threats.

Q.70 What are the two types of updates?
Ans. Operating system updates (for Windows, macOS, etc.) and application updates (for programs like browsers, media players, etc.).

Q.73 What types of scans does Windows Defender offer?
Ans. Quick Scan to check common problem areas and Full Scan to check the entire system thoroughly.

Q.74 What is real-time protection in Windows Defender?
Ans. Windows Defender also provides real-time protection, which means it keeps watching your system in the background and alerts you if anything suspicious happens.

Q.75 Why is keeping a maintenance calendar helpful?
Ans. A maintenance calendar helps you remember when to clean your system, scan for viruses, or check for updates.

Q.76 What is the benefit of Disk Cleanup?
Ans. Disk Cleanup helps remove unnecessary files that take up space and may slow down system performance.

Q.77 What is the main goal of preventive maintenance?
Ans. The main goal is to avoid bigger problems in the future while keeping the computer fast, secure, and long-lasting.

System Documentation and Logs

Q.78 Why is keeping proper records important in computer maintenance?
Ans. Keeping proper records is an important part of a computer system's maintenance. It ensures that all actions taken on the system are tracked, making it easier to manage and maintain over time.

Q.79 What kinds of activities should be documented?
Ans. Activities such as installing software, fixing issues, or performing updates should be documented. Recording these actions helps in understanding the system's history and future troubleshooting.

Q.80 How does documentation help in the

Q.81 What is the main purpose of system documentation?
Ans. The main purpose of system documentation is to explain the basics of documenting system maintenance in a simple and practical way. This ensures clarity and efficiency for anyone managing the system.

Q.82 How does system documentation support maintenance?
Ans. By keeping track of all actions performed on the system, documentation helps maintain stability, security, and efficiency. It serves as a guide for regular maintenance and problem-solving.

future?

Ans. Documentation makes it easier to manage and troubleshoot systems in the future. It provides a clear reference of past actions, which helps in identifying patterns or recurring issues.

Topic Wise Multiple Choice Questions (Additional)

Introduction to Post-Troubleshooting

1. Which is the first step in troubleshooting a computer?
(a) Check updates
(b) Restart the system
(c) Backup files
(d) Open Task Manager

2. Why should you remove unnecessary files regularly?
(a) Prevent repeated slowdowns
(b) Increase CPU usage
(c) Install new software
(d) Update BIOS

3. Which one is an effect of poor maintenance on hardware?
(a) Free storage
(b) Dust and overheating
(c) Faster performance
(d) Auto backup

4. Which of these can enter the system if apps are not updated?
(a) Files
(b) Disk cleanup
(c) Malware
(d) CPU

5. What does monitoring memory and CPU help detect?
(a) Slow performance
(b) Disk partitions
(c) Backup files
(d) Installed software

6. Which tool shows which programs are using CPU and memory?
(a) Event Viewer
(b) File History
(c) Disk Cleanup
(d) Task Manager

7. Why should system warnings and errors be checked?
(a) To delete files
(b) To increase storage
(c) To prevent bigger issues
(d) To uninstall programs

8. Which is an example of system health monitoring?
(a) Ignoring temp files
(b) Running Task Manager
(c) Installing apps
(d) Formatting drive

9. What can background processes cause if unmanaged?
(a) More storage
(b) Faster system
(c) Slow system
(d) Automatic backup

10. Why is preventive maintenance important?
(a) Keep system stable
(b) Delete backups
(c) Ignore updates
(d) Install malware

Using Built-in Diagnostic Tools

11. What is the main purpose of built-in diagnostic tools in modern OS?

16. What is the main advantage of Resource Monitor over Task Manager?

(a) Install new apps
(b) Monitor system performance in detail
(c) Delete files
(d) Format drives

12. Which of the following is NOT a built-in diagnostic tool in Windows?
(a) Task Manager
(b) Resource Monitor
(c) Event Viewer
(d) Disk Cleaner

13. What does Task Manager show in real time?
(a) CPU, memory, and disk usage
(b) Installed software
(c) Event logs
(d) Backup files

14. How can you open Task Manager?
(a) Ctrl + A
(b) Disk Cleanup Windows + R → resmon
(c) Press Alt + F4
(d) Ctrl + Shift + Esc

15. What can you do using the Processes tab in Task Manager?
(a) Record system logs
(b) Monitor network traffic
(c) View active programs and resource usage
(d) Backup files

(a) Shows installed apps
(b) Provides detailed resource usage
(c) Formats drives
(d) Deletes temp files

17. How can Resource Monitor be opened?
(a) Ctrl + Shift + Esc → Performance → Open Resource Monitor
(b) Windows + R → eventvwr
(c) Right-click Start → Disk Cleanup
(d) Alt + F4

18. Which tab in Resource Monitor shows which programs are using the CPU?
(a) Memory Tab
(b) CPU Tab
(c) Disk Tab
(d) Network Tab

19. What is the function of Event Viewer?
(a) Record detailed logs of system activity
(b) Monitor memory usage
(c) End background tasks
(d) Backup files

20. How do you open Event Viewer?
(a) Ctrl + Shift + Esc
(b) Windows + R → eventvwr
(c) Task Manager → Processes
(d) Right-click Start → Disk Cleanup

System Recovery Options

21. What are system recovery options used for?
(a) Format drives
(b) Install apps
(c) Delete files
(d) Restore the computer to a working state

22. What does Safe Mode do?
(a) Creates a restore point

28. What is a restore point?
(a) A backup of personal documents
(b) A saved snapshot of your system's settings and files
(c) A Windows update
(d) A new program installation

29. How do you create a restore point manually?

(b) Starts Windows with only fundamental drivers and services
(c) Starts Windows with full drivers
(d) Restores the system automatically

23. When is Safe Mode useful?
(a) Installing updates
(b) Running new apps
(c) System keeps crashing or restarting
(d) Increasing storage

24. How do you enter Safe Mode on most systems?
(a) Windows + R → resmon
(b) Settings > Update & Security > Recovery > Advanced Startup > Restart Now > Troubleshoot > Advanced Options > Startup Settings > Restart > Press F4
(c) Ctrl + Shift + Esc
(d) Right-click Start → Task Manager

25. What is Safe Mode with Networking used for?
(a) Delete temp files
(b) Backup system files
(c) Install software offline
(d) Access the internet and download updates or drivers

26. Which of the following is a precaution while using Safe Mode?
(a) Install unknown apps
(b) Change all settings
(c) Avoid deleting system files
(d) Ignore system errors

27. What is System Restore?
(a) Reinstall Windows
(b) Opens Task Manager
(c) Allows returning the computer to an earlier state without deleting personal files
(d) Formats the drive

(a) Open Task Manager → Performance
(b) Settings > Update & Security
(c) Right-click Start → Disk Management
(d) Control Panel > System and Security > System > System Protection > Create

30. What is bootable recovery media?
(a) A restore point
(b) A USB or DVD with system files to start the computer externally
(c) A system update tool
(d) A Task Manager feature

31. When should bootable recovery media be used?
(a) Safe Mode is inaccessible
(b) Running antivirus
(c) Installing software
(d) Checking CPU usage

32. What is the difference between MBR and GPT?
(a) GPT only supports 2 TB disks
(b) GPT supports disks larger than 2 TB and is required for UEFI
(c) MBR supports more than 100 partitions
(d) MBR is modern

33. How do you check a drive's partition style?
(a) Open Task Manager
(b) Use Safe Mode
(c) Disk Management → Properties → Volumes tab
(d) Run System Restore

34. What steps are needed to create a bootable recovery drive in Windows?
(a) Insert USB → Search Recovery Drive → Check "Backup system files" → Next → Select USB → Next
(b) Windows + R → eventvwr
(c) Control Panel → System Protection →

Create
(d) Open Task Manager → Processes → End Task

BIOS/UEFI and Boot Process Awareness

35. Identify the role of firmware during startup.
(a) Updates Windows automatically
(b) Controls early startup before OS loads
(c) Repairs USB devices
(d) Loads cloud apps

36. Where is firmware stored?
(a) Hard drive
(b) USB drive
(c) Built into motherboard
(d) Cloud

37. Which firmware shows a text-only menu and uses keyboard?
(a) UEFI
(b) BIOS
(c) GPT
(d) MBR

38. Which firmware supports graphical menu and large drives?
(a) BIOS
(b) GPT
(c) UEFI
(d) MBR

39. What hardware does BIOS/UEFI check?
(a) Installed apps
(b) File size
(c) Internet speed
(d) RAM, keyboard, and hard drive

40. Which settings can be changed in BIOS/UEFI?
(a) Boot order, date, time
(b) Install software
(c) Edit system files
(d) User passwords

42. Why do modern PCs use UEFI?
(a) Slower and simple
(b) Uses less memory
(c) Fewer devices supported
(d) Faster and secure

43. What does POST stand for?
(a) Power-On Self-Test
(b) Program on System Test
(c) Pre-OS Security Tool
(d) Primary OS Task

44. What is the function of POST?
(a) Formats drive
(b) Installs drivers
(c) Checks hardware before OS loads
(d) Installs updates

45. What happens if RAM is missing during POST?
(a) Freezes silently
(b) Beeps continuously
(c) Updates automatically
(d) Changes boot device

46. How to reset BIOS/UEFI to default?
(a) Load Setup Defaults / Reset
(b) Task Manager → End Process
(c) Ctrl + Alt + Del
(d) Disk Management

47. How to change boot order in BIOS/UEFI?
(a) BIOS → Boot tab → Move device → Save
(b) Control Panel → System
(c) Task Manager → Performance
(d) Disk Management → Change device

41. When was BIOS first developed?
(a) 1990s
(b) 2000s
(c) 1980s
(d) 1970s

48. How to fix startup issues if system won't start?
(a) Virus scan
(b) Task Manager
(c) Startup Repair via USB/DVD
(d) Format drive

Data Recovery Techniques

49. What are the main ways to recover deleted files?
(a) Using cloud only
(b) Using built-in tools or third-party software
(c) Reinstalling OS
(d) Formatting drive

50. Where does a deleted file usually go in Windows?
(a) Recycle Bin
(b) Documents folder
(c) Desktop
(d) File History

51. How can you restore a file from the Recycle Bin?
(a) Open Control Panel
(b) Open Recycle Bin, right-click file, select Restore
(c) Use Disk Management
(d) Run System Restore

52. How do you turn on File History?
(a) Settings > Update & Security > Backup > Add a drive
(b) Task Manager > Performance
(c) Control Panel > System
(d) Right-click file > Restore

53. What does the Previous Versions feature allow?
(a) Overwrite files
(b) Scan drives

56. What does recovery success depend on?
(a) File type only
(b) System updates
(c) How recently file was deleted and if new data overwrote it
(d) Drive size

57. What is a limitation of recovery tools?
(a) Can recover all deleted files
(b) Makes new backups automatically
(c) Always works on formatted drives
(d) Cannot recover files deleted a long time ago or if hard drive is damaged

58. Why do users avoid installing recovery software on the same drive?
(a) It slows Windows
(b) It may reduce recovery success
(c) It cleans the drive
(d) It increases storage

59. What should you do first before using advanced recovery tools?
(a) Check the Recycle Bin
(b) Run antivirus
(c) Install new software
(d) Format drive

60. In the Tenorshare activity, what is the first step?
(a) Scan the Desktop
(b) Empty Recycle Bin

(c) Recover earlier versions of a file or folder
(d) Delete old files

54. When should third-party recovery software be used?
(a) When files are not in Recycle Bin or Previous Versions
(b) For installing apps
(c) To update Windows
(d) To create restore points

55. How does Tenorshare recover files?
(a) Format the drive
(b) Scan selected location, choose files, click Recover
(c) Open Task Manager
(d) Check system logs

(c) Create a text file named "TestFile.txt" on Desktop
(d) Open File History

61. After deleting "TestFile.txt", what is the next step in Tenorshare?
(a) Open Tenorshare, select All Files, choose Desktop, click Scan
(b) Restart the computer
(c) Create another file
(d) Check system logs

62. Where should recovered files be saved in the Tenorshare activity?
(a) Same drive as deleted file
(b) Another folder, e.g., Documents
(c) Recycle Bin
(d) USB only

Best Practices for Preventive Maintenance

63. What is preventive maintenance for computers?
(a) Install new apps
(b) Doing simple tasks to avoid bigger problems
(c) Delete old files
(d) Upgrade hardware

64. Why do computers need preventive maintenance?
(a) To keep working properly through regular attention
(b) To run faster only
(c) To install updates
(d) To format drives

65. Which files can slow down a computer over time?
(a) Photos and videos
(b) Installed programs
(c) Temporary files, cache, update files, Recycle Bin items
(d) System logs

70. What is Windows Defender?
(a) Disk cleanup tool
(b) Security tool against viruses and malware
(c) Recovery software
(d) Backup software

71. Which types of scans does Windows Defender offer?
(a) Virus scan only
(b) Disk scan and file scan
(c) Partial scan only
(d) Quick Scan and Full Scan

72. What is real-time protection in Windows Defender?
(a) Deletes files automatically
(b) Scans only when opened
(c) Monitors system in background and alerts for threats
(d) Monitors disk space

66. Which tool safely removes unnecessary files in Windows?
(a) Disk Cleanup
(b) Task Manager
(c) File Explorer
(d) Resource Monitor

67. What are software updates (patches) used for?
(a) Create backups
(b) Fix bugs, add features, and improve security
(c) Delete files
(d) Monitor performance

68. Why is it important to keep your system updated?
(a) To run old apps
(b) To increase storage
(c) To protect from viruses and security threats
(d) To defragment disk

69. Which are the two types of updates?
(a) OS updates and application updates
(b) Disk & memory updates
(c) Program & driver updates
(d) File & folder updates

73. Why keep a maintenance calendar?
(a) To remember cleaning, scanning, and updates
(b) To record browsing history
(c) To install programs
(d) To monitor CPU

74. How can you set reminders for maintenance tasks?
(a) Only control panel
(b) Only sticky notes
(c) Only system logs
(d) Write down or set reminders on phone or computer

75. What is the benefit of Disk Cleanup?
(a) Deletes all files
(b) Removes unnecessary files that slow performance
(c) Installs updates
(d) Monitors CPU usage

System Documentation and Logs

76. Why is keeping proper records an important part of a computer system's maintenance?
(a) Install apps
(b) Track and maintain system
(c) Increase storage
(d) Format disk

77. Which activities should be documented to help manage and troubleshoot systems?
(a) Games
(b) Videos
(c) Updates and fixes

81. What should be recorded in system logs to make future troubleshooting easier?
(a) Browsing history
(b) Updates, installs, fixes
(c) Documents
(d) Media files

82. Why is it easier to manage computer systems when proper documentation is maintained?
(a) Formats PC automatically
(b) Deletes files

(d) Temp files

78. How does system documentation help in future troubleshooting?
(a) Provides reference of past actions
(b) Harder to track
(c) Speeds up PC
(d) Deletes logs

79. What is the main purpose of system documentation?
(a) Monitor CPU
(b) Backup files
(c) Explain maintenance tracking
(d) Run antivirus

80. How does documentation support system maintenance?
(a) Track actions for stability
(b) Delete programs
(c) Install apps
(d) Scan viruses

(c) Tracks past actions for maintenance
(d) Installs updates

83. Which of the following is NOT part of system documentation?
(a) Fix issues
(b) Install software
(c) Updates
(d) Games

84. How does system documentation improve efficiency in maintenance tasks?
(a) Tracks actions as reference
(b) Increases memory
(c) Downloads files faster
(d) Cleans desktop

85. Who benefits from proper system documentation?
(a) Gamers
(b) System users
(c) Students
(d) Designers

Answers

1	b	2	a	3	b	4	c	5	a	6	d	7	c	8	b
9	c	10	a	11	b	12	d	13	a	14	d	15	c	16	b
17	a	18	b	19	a	20	b	21	d	22	b	23	c	24	b
25	d	26	c	27	c	28	b	29	d	30	b	31	a	32	b
33	c	34	a	35	b	36	c	37	b	38	c	39	d	40	a
41	c	42	d	43	a	44	c	45	b	46	a	47	a	48	c
49	b	50	a	51	b	52	a	53	c	54	a	55	b	56	c
57	d	58	b	59	a	60	c	61	a	62	b	63	b	64	a
65	c	66	a	67	b	68	c	69	a	70	b	71	d	72	c
73	a	74	d	75	b	76	b	77	c	78	a	79	c	80	a
81	b	82	c	83	d	84	a	85	b						

Solved Exercise

Multiple Choice Questions

1. **Task Manager is mainly used to:**
   (a) Monitor running applications
   (b) Clean up disks
   (c) Scan for viruses
   (d) Manage files

2. **Safe Mode starts Windows with:**
   (a) All drivers and services
   (b) Basic drivers only
   (c) Network services
   (d) Antivirus tools

3. **Bootable USB drives are used for:**
   (a) Installing games
   (b) System repair and recovery
   (c) Watching videos
   (d) Sending emails

4. **In UEFI systems, a bootable USB must be created in:**
   (a) NTFS format
   (b) MBR style
   (c) GPT style
   (d) ZIP format

5. **The Power-On Self-Test (POST) is performed:**
   (a) During system shutdown
   (b) After login
   (c) At system startup
   (d) When installing software

6. **Tenorshare is a tool used to:**
   (a) Play videos
   (b) Recover lost files
   (c) Create charts
   (d) Monitor CPU

7. **File History helps to:**
   (a) Track website history
   (b) Save copies of personal files
   (c) Install apps
   (d) Scan for malware

8. **Windows Defender provides:**
   (a) File compression
   (b) Virus protection
   (c) Disc formatting
   (d) Music playback

Answers

1	a	2	b	3	b	4	c	5	c	6	b	7	b	8	b

Short Questions

Q.1 Write one key function of the Resource Monitor.

Ans. The Resource Monitor shows how the computer uses CPU, memory, disk, and network resources, helping identify programs that slow down the system.

Q.2 Define the use of Safe Mode in system

Q.5 Why is the boot order setting important when using recovery tools from a USB drive?

Ans. The boot order determines which device the computer starts from first. To run recovery tools from a USB drive, the boot order must be set to USB.

Q.6 List the two benefits of running regular disk

recovery.

Ans. Safe Mode starts Windows with only essential drivers and services, allowing users to troubleshoot and fix problems when the system cannot start normally.

Q.3 List the steps to create a bootable USB using Rufus.

Ans. Steps to create a bootable USB using Rufus: Insert USB and open Rufus. Select the USB. Choose the ISO file. Click Start.

Q.4 What happens during the Power-On Self-Test (POST)?

Ans. During the Power-On Self-Test (POST), the system checks essential hardware components such as RAM, keyboard, and storage devices to ensure they are functioning properly before loading the operating system.

cleanup.

Ans. 1. It frees up storage space. 2. It improves system speed and performance.

Q.7 How does Windows Defender help in maintaining system health?

Ans. Windows Defender helps maintain system health by protecting the computer from viruses, malware, and other threats. It scans files and programs in real time and blocks any detected threats automatically.

Long Questions

Q.1 Explain the roles of Task Manager and Event Viewer in system maintenance. Give one example for each tool where it can help solve a problem. *[10502187]*

Ans. See Long Question No. 4 (detailed answer in Unit content, Q.4).

Q.2 Your computer is not starting properly due to a system issue. Describe how System Restore or a bootable recovery USB can be used to fix the problem without deleting personal files. *[10502188]*

Ans.

When your computer is not starting properly due to a system issue (e.g., corrupted system files, bad driver, faulty update, or registry error), you can attempt to fix it without deleting personal files (documents, photos, videos, downloads, etc.) using one of these two main methods:

Method 1: Using System Restore (if you can reach the Windows Recovery Environment)

System Restore reverts important system files, settings, and registry entries to a previous working state (a restore point), while leaving your personal files completely untouched.

- Turn on the computer and repeatedly press the key to enter the boot menu or recovery options (commonly F8, F11, Shift + F8, or F12, depends on your brand; or let Windows fail to boot 2–3 times to trigger Automatic Repair).
- When the Automatic Repair screen appears → choose Advanced options.
- Select Troubleshoot → Advanced options → System Restore.
- If prompted, select your Windows account and enter the password.
- Choose a restore point from the list — preferably the most recent one dated before the problem started (e.g., "Windows Update March 2026" or "Before installing new driver").
- Click Next → Finish to start the restoration.
- The computer will restart several times and revert to that earlier state.

Method 2: Using a Bootable Recovery USB (when System Restore is not accessible or fails)

If the system is too damaged to reach the built-in recovery options, use a bootable Windows USB (created on another working computer).

37. On another working computer, create a bootable Windows USB:

- Download the official Windows Media Creation Tool or Windows ISO from microsoft.com.
- Use the Media Creation Tool (easiest) or Rufus to make a bootable USB (minimum 8–16 GB).

38. Insert the USB into the affected computer.

39. Restart and enter the BIOS/UEFI setup (press F2, Del, F10, Esc, or F12 during startup — varies by brand) → set the USB as the first boot device → save and exit.

40. The computer boots from the USB → select your language → click Next → choose Repair your computer (bottom-left, not Install now).

41. Go to Troubleshoot → Advanced options.

42. Try these options in order (all preserve personal files):

- Startup Repair → automatically fixes common boot problems.
- System Restore → same as Method 1 above — pick a good restore point.
- Command Prompt → run commands like:

- sfc /scannow /offbootdir=C:\ /offwindir=C:\Windows (repairs system files)
- chkdsk C: /f /r (fixes disk errors)
- If nothing else works → Reset this PC → choose Keep my files → this reinstalls Windows while keeping personal files and most installed apps.

Q.3 Briefly explain any two preventive maintenance techniques that help to keep a computer running smoothly. *[10502189]*

Ans. See Long Question No. 12 (detailed answer in Unit content, Q.12).

Q.4 Explain how deleted files can be recovered using a third-party software. Also, discuss why recovery may not always be successful. *[10502190]*

Ans. See Long Question No. 10 (detailed answer in Unit content, Q.10).

Q.5 A classmate wants to clean up disk space after a large Windows update. Explain how to use Disk Cleanup, including the option to remove system files safely. *[10502191]*

Ans. Key Point: Disk Cleanup

Just like we take care of our health or maintain our vehicles, computers also need regular attention to keep working properly. Preventive maintenance means doing simple tasks that help avoid bigger problems in the future. These tasks can improve your computer's speed, keep it secure, and help it last longer.

1. Disk Cleanup

After some time, the computer collects unnecessary files such as temporary internet files, system cache, Windows update files, and items in the Recycle Bin. These files take up space and may slow down system performance. Disk Cleanup is a built-in Windows tool that helps remove such files safely.

2. Steps to Perform Disk Cleanup

- Type Disk Cleanup in the Windows search bar and open the tool.
- Select the drive you want to clean (usually C:) and click OK.
- Click "Clean up system files" to remove old Windows update and other system files safely.
- Check the boxes for the types of files you want to delete.
- Click OK to remove the selected files.

Solved Activities

Activity 1

Objective:

Use Task Manager to identify and end an unnecessary background program.

Steps

43. Open Task Manager using Ctrl + Shift + Esc.
44. Go to the Processes tab.
45. Find a program running in the background that you are not using (e.g., Music app, update service).
46. Select it and click End Task (only if you're sure it is safe to close).
47. Observe if your computer's speed improves.

- Did ending the task improve system performance?
- Why do you think that happened?

Solutions

Q.1 Did ending the task improve system performance? *[10502192]*

Ans. It depends on what program you ended. If the program was consuming a lot of CPU or memory, you might notice your computer running smoother, apps opening faster, or less lag. If the task wasn't using much resource, there may be no noticeable difference.

Q.2 Why do you think that happened? *[10502193]*

Ans. When you end a background program, it stops using your computer's resources (CPU, RAM, disk). This frees up those resources for other programs, allowing your system to respond faster. For example, if a music app or automatic update service was running in the background, closing it reduces memory usage and CPU cycles, which can make your computer feel snappier.

Activity 2

Objective:

Learn how to create a bootable recovery drive using built-in Windows tools.

Requirements

- A Windows 10 or 11 PC
- An empty USB drive (at least 16 GB)

Steps

- Insert the USB into the computer.
- Press the Windows key, type Recovery Drive, and open it.
- Check "Backup system files to the recovery drive" and click Next.
- Select your USB drive and click Next (Do not click "Create" in class unless permitted).
- What does Windows say this recovery drive will help you with?

Solutions

Q.1 What does Windows say this recovery drive will help you with? *[10502194]*

Ans. Windows states that a recovery drive can help you "troubleshoot and restore your PC" if it fails to start properly. It allows you to:

- Access advanced startup options to repair your system.
- Reset your PC to factory settings if needed.
- Recover system files if Windows becomes corrupted.

Essentially, it's a safety tool to fix serious problems that prevent Windows from booting normally.

Activity 3

Objective:

To help students understand how file recovery works by using Tenorshare on a test file.

Steps

48. Create a text file named "TestFile.txt" on the Desktop.
49. Delete it and empty the Recycle Bin.
50. Open Tenorshare → Select All Files → Choose Desktop as location.
51. Click Scan → When the file appears, select and click Recover.
52. Save it to another folder (e.g., Documents).

- Were you able to recover the file?
- Why should you avoid saving new files to the same drive after deletion?

Solutions

Q.1 Were you able to recover the file? *[10502195]*

Ans. Yes, in most cases the file can be recovered using Tenorshare or similar recovery software. Even after deleting a file and emptying the Recycle Bin, the data often remains on the disk until it is overwritten by new data. Recovery tools can detect this "deleted" data and restore it.

Q.2 Why should you avoid saving new files to the same drive after deletion? *[10502196]*

Ans. When you delete a file, the system marks its space as available but doesn't immediately erase the actual data. If you save new files to the same drive, the new data can overwrite the deleted file's space, making recovery difficult or impossible. To maximize chances of recovery, avoid using the drive until after the deleted file is recovered.