

1. What is the first step in the troubleshooting process?

☒ b) Identifying the problem

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2. Which tool is commonly used to diagnose hardware issues by testing electrical connections?

☒ c) Multimeter

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3. Which Windows utility is used to view system logs, monitor performance, and diagnose issues?

☒ c) Event Viewer

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4. Safe Mode loads only essential system services and drivers.

☒ True

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5. A system restore point is a snapshot of system files used to revert the system if problems occur.

☒ True

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6. Ping is a command-line utility used to test network connectivity by sending ICMP echo requests and receiving replies.

☒ True

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7. Describe the steps involved in troubleshooting a computer that fails to boot into the operating system.

Here is a clear and structured troubleshooting process:

#### **Step-by-step Boot Failure Troubleshooting**

##### **1. Check power and physical connections**

- Ensure the power cable, monitor cable, and internal connections are secure.
- Verify the PSU is functioning.

##### **2. Check BIOS/UEFI**

- Enter BIOS/UEFI setup.
- Check if the system recognizes the hard drive or SSD.

- Ensure correct boot order.
  - 3. **Listen for beeps or error codes**
    - Many motherboards provide beep sequences indicating RAM, CPU, or GPU failure.
  - 4. **Boot into Safe Mode or Recovery Environment**
    - Try pressing **F8 / Shift+F8 / F11** depending on the system.
    - If successful, troubleshoot drivers or recently changed settings.
  - 5. **Run Startup Repair**
    - Use Windows Recovery Environment → **Troubleshoot** → **Startup Repair**.
  - 6. **Check hardware components**
    - Test RAM (reseal or use one stick at a time).
    - Test storage drive using another computer if needed.
  - 7. **Use System Restore (if available)**
    - Revert the system to a previous working state.
  - 8. **Rebuild boot files**
    - Use Command Prompt in Recovery:
    - bootrec /fixmbr
    - bootrec /fixboot
    - bootrec /rebuildbcd
  - 9. **Reinstall operating system (last resort)**
    - If OS files are severely corrupted.
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## **8. Demonstrate how to troubleshoot network connectivity issues on Windows using ipconfig.**

### **Steps using ipconfig:**

1. **Open Command Prompt**
  - Press **Win + R** → type **cmd** → Enter.
2. **Check current network configuration**
3. **ipconfig**
  - Look for IP address, subnet mask, gateway.
4. **Check for invalid IP (169.254.x.x)**
  - Means DHCP issue → continue to next steps.
5. **Release current IP**

6. ipconfig /release
7. **Renew IP**
8. ipconfig /renew
9. **Flush DNS cache** (fixes DNS issues)
10. ipconfig /flushdns
11. **Check connection to gateway**
12. ping 192.168.1.1
13. **Check external connectivity**
14. ping google.com

If pings fail:

- Local ping fails → LAN issue.
- External ping fails → Internet or DNS issue.

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## 9. Discuss the importance of effective communication skills in a helpdesk or technical support role.

### Importance of Good Communication in Helpdesk/Technical Support

1. **Helps understand the user's problem**
  - Clear questioning allows technicians to diagnose issues accurately.
2. **Builds trust with the customer**
  - Friendly, patient communication reassures the user.
3. **Reduces resolution time**
  - Clear instructions avoid repeated explanations and confusion.
4. **Ensures non-technical users understand solutions**
  - Technicians must simplify complex technical information.
5. **Prevents misunderstandings**
  - Good communication ensures accurate documentation and follow-up.
6. **Improves customer satisfaction**
  - Users feel supported even if the issue is complex.
7. **Supports teamwork**
  - Helpdesk staff must accurately communicate problems and fixes to senior technicians