COMPUTER

◆ Definitions

1. Troubleshooting
Troubleshooting means finding and fixing problems in computers, machines, or systems to make them work properly again.

2. Systematic Troubleshooting
A step-by-step method used to find the cause of a problem and solve it.

3. Downtime
The time when a computer or system is not working or not available.

4. Data Integrity
Keeping data correct, safe, and unchanged.

5. Malware
Harmful software like viruses that can damage a computer or steal data.

6. Peripheral Devices
External devices connected to a computer like a mouse, keyboard, or printer.

7. RAM (Random Access Memory)
Temporary memory that stores data while the computer is working.

8. Hard Drive
A storage device that holds data like files, programs, and the operating system.

9. Preventive Maintenance
Regular actions taken to avoid problems before they happen, like cleaning dust or updating software.

10. Physical Check
Looking at the computer and its parts (like cables, fans, or power supply) to see if anything is broken, loose, or dirty.

11. Power Cycle
Turning off a computer/device completely and then turning it on again to reset it.

12. Diagnostic Tools
Software or built-in system tools used to find out what problem a computer or device is having.

13. Online Resources
Websites, help forums, or support centers that offer solutions to technical problems.

14. Communication Skills
The ability to clearly talk and listen to users during the troubleshooting process.

◆ Short Questions and Answers

15. What is system troubleshooting and why is it important?
System troubleshooting is the process of finding and fixing problems in computers or machines. It is important because it helps keep systems working, prevents delays, and saves money.

16. List the seven steps of the systematic troubleshooting process.

1. Identify the problem
2. Make a theory of possible causes
3. Test the theory
4. Plan a solution
5. Apply the solution
6. Check if the system works properly
7. Write down what was done and the result

17. Why is identifying the problem the first step in troubleshooting?
Because you must first know what is wrong before you can fix it. For example, if a computer doesn't turn on, you recognize the issue first.

18. What does 'Establish a theory of probable cause' mean?
It means thinking about what could be the reason for the problem, like guessing possible causes.

19. Why should we document our troubleshooting steps?
To keep a record of what the problem was, how it was fixed, and the result. This helps if the problem happens again.

20. How does troubleshooting help prevent downtime?
It quickly solves problems, so systems don’t stay off for a long time, especially in businesses.

21. What is data integrity and how does troubleshooting help it?
Data integrity means keeping data correct and safe. Troubleshooting fixes errors that may damage or change data.

22. How does troubleshooting improve computer performance?
It finds and solves problems like slow speed, overheating, or software bugs so the system runs better.

23. What are common software-related issues?

- Application freezing
- Unresponsive devices
- Crashing programs
- Slow performance

24. How can you solve an application freezing issue?
Use Task Manager (Ctrl + Alt + Delete) to end the task. If it continues, update or reinstall the application.

25. What should you do if a peripheral device is not working?
Check connections, unplug and replug the device, and update the driver.

26. Why is restarting a computer often helpful?
It clears memory, stops stuck processes, and refreshes the system. Many software issues can be fixed by restarting.

27. What are common hardware-related problems?

- Loose cables
- Overheating
- Non-working devices (keyboard, monitor)

28. How can overheating be prevented?
Keep the computer in a ventilated space and clean dust from vents and fans.

29. What is cable management and why is it important?
Keeping cables neat and organized to prevent disconnection, accidents, or damage.

30. What are signs of RAM failure?
Frequent crashes, blue screen errors, and poor performance.

31. How can you check if RAM is faulty?
Use memory testing tools like Windows Memory Diagnostic or MemTest86.

32. What are signs of hard drive failure?
Strange clicking sounds, slow performance, and corrupted files.

33. How can you check hard drive health?
Use tools like CrystalDiskInfo or SMART monitoring software.

34. Why should we upgrade or replace computer components?
To improve speed, fix problems, and extend the system's life.

35. Give an example of replacing hardware to fix a problem.
If a hard drive is failing, replacing it prevents data loss and keeps the computer working.

36. What are basic security practices in computing?

- Use antivirus software
- Create strong passwords
- Update software regularly

37. How can strong passwords protect your system?
They prevent hackers from easily guessing and accessing your accounts or data.

38. What is the benefit of applying system updates?
They fix bugs, patch security holes, and improve performance.

39. What is data backup and why is it needed?
Making copies of data to keep it safe in case of loss or system failure.

40. Name two ways to back up your data.

1. Use external storage like USB or hard drives
2. Use cloud storage like Google Drive or OneDrive

41. What is preventive maintenance in computers?
Preventive maintenance means doing regular checks and cleaning to keep a system running smoothly. It includes updating software, checking cables, and cleaning dust.

42. Why is cleaning important in preventive maintenance?
Dust can block airflow and cause overheating, which damages computer parts.

43. What is the purpose of doing a physical check of a computer system?
To see if anything is broken, disconnected, or dirty, like power cables or internal fans.

44. What is a power cycle, and when should it be used?
A power cycle is turning off a device and turning it back on. It should be used when a system is frozen or not responding.

45. What are diagnostic tools and how are they useful?
Diagnostic tools are software or built-in programs used to find problems. They help locate errors and suggest solutions.

46. Give examples of some built-in diagnostic tools.

- Windows Troubleshooter
- Task Manager
- Event Viewer

47. How can online resources help during troubleshooting?
They provide step-by-step guides, videos, and solutions from people who had the same problem.

48. Why are communication skills important for troubleshooting?
To understand the problem clearly, explain steps to the user, and work well in teams.

49. What should you do after solving a problem?
Test the system to confirm it works, then write down the steps and result (document the process).

50. Why is sharing troubleshooting knowledge helpful?
It helps others learn how to fix problems and improves teamwork and efficiency.
