How Computer Hardware and Software Work Together

Use this key to check answers and read the explanations.

1. Which of these is application software used to edit a document?
   A. A word processor
   B. A memory module
   C. A network card
   D. A keyboard cable
   Correct answer: A. A word processor
   A word processor is a program for a user task. The other items are physical components.

2. What kind of software manages common services that programs need, such as opening files and sharing memory?
   A. A presentation template
   B. An image file
   C. An operating system
   D. A keyboard layout printed on paper
   Correct answer: C. An operating system
   An operating system provides shared services. It manages resources such as memory and handles requests for files and devices.

3. The built-in code inside a digital camera controls its buttons before any computer is connected. What is that code called?
   A. A photo album
   B. Firmware
   C. A website
   D. A desktop shortcut
   Correct answer: B. Firmware
   Firmware is software stored on a device that controls its basic behavior.

4. When a program adds two numbers, which part carries out the instructions for the calculation?
   A. The display stand
   B. The power switch
   C. The case fan
   D. The processor
   Correct answer: D. The processor
   Software supplies instructions. A processor carries out the instructions using physical circuits.

5. Which kind of software helps a computer’s operating system communicate with an attached printer?

A. A photo file
B. A printer driver
C. A printed instruction card
D. A spreadsheet formula

Correct answer: B. A printer driver
A driver participates in communication between an operating system and a device such as a printer.

6. A student removes a photo editor from a computer. The JPEG files are stored in a separate folder and remain there. What is still needed to edit a JPEG?

A. An application that can edit JPEG images
B. A replacement display panel
C. A different power supply
D. A second copy of the same file name

Correct answer: A. An application that can edit JPEG images
An image file contains data. An editor supplies the software that interprets and modifies that data.

7. A program is stored on a drive. On an ordinary desktop, where is the program’s active working data held after the operating system loads it?

A. The screen surface
B. The power cord
C. The plastic case
D. Working memory

Correct answer: D. Working memory
The processor works with active instructions and data in memory. The drive retains the saved program when it is closed.

8. Two applications both need time on a computer with a single CPU core. What does the operating system manage so each can get a turn?

A. Cable length
B. The number of keys on the keyboard
C. Processor scheduling
D. The size of the monitor

Correct answer: C. Processor scheduling
Scheduling decides which runnable task uses the processor at a given time.

9. A supported camera update changes how the camera handles its shutter button without replacing any parts. Which change accounts for its new behavior?

A. The instructions the device runs changed
B. The camera gained a second lens
C. The battery has been made physically larger
D. The display surface was replaced

Correct answer: A. The instructions the device runs changed
An update can change the firmware commands executed by the existing hardware.

10. A drawing program saves a file without knowing the type of storage drive in the computer. What lets the program make that request?

A. The processor uses a separate cable for each program
B. The monitor interprets the drawing as disk commands
C. The mouse copies the image directly to the drive
D. The operating system provides a file service

Correct answer: D. The operating system provides a file service
The program can ask the operating system to create and write a file. The operating system and device software handle the lower-level storage operations.

11. Two desktops have similar processors, but a program is distributed only for the operating system on one of them. Why might it fail on the other?

A. A larger monitor can change which software the system supports
B. Matching processors guarantee that all programs run on both machines
C. It depends on services and executable formats of a particular operating system
D. File names alone tell the CPU how to change the operating system

Correct answer: C. It depends on services and executable formats of a particular operating system
An application may depend on operating-system services and a supported executable format. Similar physical processors do not guarantee the same software environment.

12. A printer can print its built-in test page using buttons on the device. It fails only for print jobs from one computer. What is a sensible next check?

A. Replace the printer's paper tray immediately
B. Check the connection and printer driver on that computer
C. Replace the computer’s monitor immediately
D. Assume the printer cannot print under any conditions

Correct answer: B. Check the connection and printer driver on that computer
The test shows the printer can print locally. The connection or driver is a plausible reason jobs from that computer do not reach it correctly.

13. What runs first at startup on a typical computer and prepares enough hardware for the system to start loading?

A. The web browser’s history viewer
B. The desktop word processor
C. A downloaded movie
D. The computer’s startup firmware

Correct answer: D. The computer’s startup firmware
Startup firmware runs when power comes on. It initializes basic hardware before loading the operating system or handing off to its loader.

14. A specialized scanner needs a driver supported by the current operating system. What should users check before switching to another operating system?

A. Whether the new operating system supports the scanner and its driver
B. Whether the scanner’s case matches the computer’s color
C. Whether the new operating system uses the same wallpaper
D. Whether the scanner is the same size as the monitor

Correct answer: A. Whether the new operating system supports the scanner and its driver
The physical device can remain unchanged while driver compatibility changes. Confirm support for that model and operating system.

15. A person selects Print in a word processor. Which sequence best describes a typical request to a printer?

A. Application powers the outlet, then the paper tray selects a printer driver
B. Printer produces a page, then firmware opens the word processor and creates the request
C. Application requests printing, system and driver process the request, printer produces the page
D. Printer cable edits the document, then the display prints it

Correct answer: C. Application requests printing, system and driver process the request, printer produces the page
The application initiates the request. Operating-system print services and driver components help deliver it to the printer, which performs the physical work.