## Answers to Key Terms Quiz

1. operating system (OS)
2. kernel
3. command-line interface (CLI)
4. Chrome OS
5. task management
6. input/output (I/O)
7. server
8. device driver
9. accelerometer
10. user interface

## Answers to Multiple-Choice Quiz

1. Correct answer: A. macOS, because it is only legal to use it on Apple computers.  
   B is incorrect because Windows 10 can be licensed for PCs.   
   C is incorrect because Windows 7 can be licensed for PCs.   
   D is incorrect because Linux *is available* for PCs, and there is virtually no licensing issue with most distributions.   
   E is incorrect because Windows 8 *can* be licensed for PCs.
2. Correct answer: B. Integrated circuit (IC) is a small electronic component made up of transistors and other miniaturized parts.  
   A is incorrect because a peripheral is a device that connects to a computer, such as the video and network adapters, USB ports, and digital cameras. Peripherals and the computer itself contain ICs.  
   C is incorrect because a tablet is a type of microcomputer and therefore contains ICs.  
   D is incorrect because a mouse is a peripheral device, not an individual IC.  
   E is incorrect because the vacuum tube is the component that the integrated circuit replaced.
3. Correct answer: E. Lotus 1-2-3, an electronic spreadsheet, was the killer app that made the IBM PC a must-have business tool.   
   A is incorrect because Microsoft Word is a word processor that evolved with the PC, but did not have the killer app effect of Lotus 1-2-3.  
   B is incorrect because, although VisiCalc was a very important application for users of the personal computers that predated the IBM PC, *and* was the obvious model for Lotus 1-2-3, it did not play the role that Lotus 1-2-3 did in the success of the IBM PC.   
   C is incorrect because BASIC is a programming language, and although the IBM PC included a BASIC interpreter in ROM, it was not a compelling must-have business tool.  
   D is incorrect because PC DOS is an OS and not an application, and it alone could not play the role that Lotus 1-2-3 did.
4. Correct answer: E. Apple’s iOS is not available as a desktop operating system, used only in Apple’s mobile devices.  
   A, B, C, and D are all incorrect because all these OSs (Chrome OS, macOS, Windows 10, and Linux) are available as desktop operating systems.
5. Correct answers: A and C. Both a mouse and a keyboard are input devices.  
   B is incorrect because a printer is an output device.  
   D is incorrect because RAM is a form of computer memory used for temporary storage.  
   E is incorrect because ROM is a nonvolatile form of computer memory used to store programs.
6. Correct answer: B. A file and printer server is a networked computer that allows users to save and access files stored on it.   
   A, C, D, and E are all incorrect because each of these devices (desktop computer, tablet, laptop, and smartphone) typically is a client on a network, allowing the local user to connect to network services.
7. Correct answer: E. SoC, the acronym for system-on-a-chip, describes technology in which all or most of a device’s electronic circuitry is on a single microchip.  
   A, IoT, is incorrect. It is the acronym for Internet of Things.  
   B, UI, is incorrect. It is the acronym for user interface.  
   C, RAM, is incorrect. It is the acronym for Random Access Memory.  
   D, SSD, is incorrect because it is the acronym for solid-state drive.
8. Correct answer: B. macOS is built on NextStep, an OS based on the UNIX kernel.   
   A is incorrect because while Linux is UNIX-like, it is not the basis for OS X.  
   C is incorrect because DOS is a very old single-tasking OS that is not the basis for macOS.  
   D is incorrect because Windows is not the OS on which macOS is built.  
   E is incorrect because Chrome OS is not the OS on which macOS is built.
9. Correct answer: D. A government agency was a typical end user in the 1950s.  
   A is incorrect because there were no computer gamers (in the modern sense) in the 1950s.  
   B is incorrect because a medical doctor would not have been a typical computer user in the 1950s.  
   C is incorrect because a politician would not have been a typical computer user in the 1950s.  
   E is incorrect because a secretary would not have been a typical computer user in the 1950s.
10. Correct answer: A, IoT, is the acronym for Internet of Things, which describes networked devices that contain microcomputers, but are not thought of as computing devices.  
    B, RAM, is incorrect. It is the acronym for Random Access Memory.  
    C, NTFS, is incorrect. It is the acronym for New Technology File System (NT File System).  
    D, SSD, is incorrect because it is the acronym for solid-state drive  
    E, SoC, is incorrect. It is the acronym for system-on-a-chip.
11. Correct answer: D. The computing trend over the last 60-plus years has been toward physically smaller, more powerful computers.  
    A is incorrect because the trend has been toward smaller computers, not larger ones.  
    B is incorrect because the trend has *not* been toward larger, less powerful computers.  
    C is incorrect because the trend has *not* been toward less powerful computers.  
    E is incorrect because the trend has *not* been toward single-use computers.
12. Correct answer: B: When using a mobile device, if you touch an area of screen that requires input from a keyboard, the OS will display a virtual keyboard for your use.  
    A is incorrect because a help screen would not be as useful as an onscreen keyboard in this scenario.  
    C is incorrect because you can use a mobile device without needing to connect to any type of physical keyboard, although it is possible to use a Bluetooth keyboard with many mobile devices.  
    D is incorrect because a mobile device is not going to display a command-line interface (CLI) for your use when you need a keyboard (virtual or non-).  
    E is incorrect because screen gestures are not something that is displayed on a screen, but how you touch a touch screen to interact with the device.
13. Correct answer: B. Using a Wi-Fi connection when browsing the Internet with a mobile device can save data fees.  
    A is incorrect because Bluetooth will not usually connect your device to the Internet—just to other Bluetooth devices located within yards of the mobile device.  
    C is incorrect because USB is not a wireless network connection, and it will not connect a mobile device to the Internet. USB was also not mentioned in relation to mobile devices in this chapter.  
    D is incorrect because connecting to the Internet using a cellular connection will normally incur data usage fees based on the amount of data downloaded or require an unlimited data plan.  
    E is incorrect because Ethernet is not a wireless network connection and was not mentioned in the chapter in relation to mobile devices.
14. Correct answer: D. NTFS is the default file system for current Windows OSs.  
    A is incorrect because iOS in Apple’s mobile OS; it is not a file system.  
    B is incorrect because IC refers to any integrated circuit chip.  
    C is incorrect because RAM is volatile memory, not a file system.  
    E is incorrect SSD is not a file system, but a solid-state drive storage device.
15. Correct answer: A. Bluetooth.  
    B and D (Wi-Fi and Cellular), while both wireless standards, would not be used to connect a smartphone to a wireless headset, which only needs a signal that can travel a very short distance.   
    C and E (USB and Ethernet) are incorrect because they are both wired options.

## Answers to Essay Quiz

Answers will vary.

1. The benefit of an operating system to application programmers is that it relieves the programmer of the need to write code to access the computer hardware directly.
2. Our opinion is that there are more commonalities among the different operating systems across devices. A short list of observed commonalities includes GUIs, support for multiple applications, automatically maintain date and time, have web browsers, have a variety of user-configurable settings, and the option to use various networking technologies to connect to the rest of the world.
3. As the timeline has evolved, and we have had time to see the consequences of certain events, our opinion has changed. The overall miniaturization of computer components may be the largest contributing factor, but that is not shown in the timeline as a single event. We believe that this single event must have had an impact on the development of more capable smartphones over a decade later.
4. A distribution or distro is a bundling of the Linux kernel and software—both enhancements to the OS and applications, such as word processors, spreadsheets, media players, and more. The person or organization providing the distribution may charge a fee for the enhancements and applications but cannot charge a fee for the Linux code itself.
5. Mobile operating systems take advantage of the hardware accelerometer by rotating the image on the screen to accommodate the position and allow you to read the screen. This feature is called screen rotation or screen acceleration. Figure 1–18 shows the screen of an iPad tablet running in portrait orientation, and Figure 1–19 shows the screen of the same tablet in landscape orientation.

## Solution to Lab Project 1.1

Answers will vary based on everyone’s activities. For instance, yesterday I woke up, reached for my smartphone before getting out of bed. I drove into town and fueled my car at a computer-controlled gas pump with a video displaying annoying commercials. Then I went to the grocery store where, if I chose, I could use my smartphone to get extra discounts on certain items. I checked out at a computerized register and stopped at the bank to make a deposit via the drive-up cash machine. Later I returned home and put a casserole into my oven, carefully selecting the correct settings from the display. In the evening we watched streaming video on our TV.

## Solution to Lab Project 1.2

Answers will vary. Similarities could include the use of a GUI interface on both types of devices. In fact, many desktop and laptop computers have touch screens, making our interaction with these devices like working with mobile devices. Students may describe using desktops and laptops for one set of tasks and using mobile devices for another set of tasks, with some overlap.

## Solution to Lab Project 1.3

Answers will vary based on the responses of classmates and coworkers. More and more students will say they do not own a desktop computer and use a smartphone or tablet as their primary computer.