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| **True / False** |

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| 1. The core of an operating system that coordinates system functions is referred to as the CPU.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | |

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| 2. An operating system allows the computer to execute I/O functions, enabling software applications to communicate with computer hardware.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | |

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| 3. One function of the operating system's kernel is managing the use of the computer's RAM.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | |

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| 4. A separate device driver is typically present for each I/O device.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | |

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| 5. Cooperative multitasking allows the operating system to remain in control of the computer at all times.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | |

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| **Multiple Choice** |

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| 6. Which of the following is NOT an I/O task performed by the operating system?   |  |  |  | | --- | --- | --- | |  | a. | handles output to the monitor | |  | b. | executes program instructions | |  | c. | manages network communication | |  | d. | controls information storage and retrieval |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 7. Which of the following was the first widely used multiuser, multitasking OS?   |  |  |  | | --- | --- | --- | |  | a. | MS-DOS | |  | b. | Mac System Software 6 | |  | c. | Unix | |  | d. | Windows 3.0 |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8. Which of the following is a job typically performed by the kernel?   |  |  |  | | --- | --- | --- | |  | a. | managing CPU interactions | |  | b. | handling input from the keyboard | |  | c. | handling output to the monitor | |  | d. | enabling multimedia |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 9. The code that exchanges information with specific hardware devices is referred to as which of the following?   |  |  |  | | --- | --- | --- | |  | a. | BIOS | |  | b. | kernel | |  | c. | application | |  | d. | device driver |  |  |  | | --- | --- | | *ANSWER:* | d | |

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| 10. Which of the following is low-level programming code capable of starting a full-fledged operating system?   |  |  |  | | --- | --- | --- | |  | a. | Process | |  | b. | POST | |  | c. | BIOS | |  | d. | CMOS |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 11. Which of the following is NOT a task performed by the computer's BIOS?   |  |  |  | | --- | --- | --- | |  | a. | performs power-on self test | |  | b. | manages random access memory | |  | c. | starts the operating system | |  | d. | enables communication with hardware devices |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 12. Which of the following can be described as program code that operates like a specialized hook into the operating system?   |  |  |  | | --- | --- | --- | |  | a. | BIOS | |  | b. | ROM | |  | c. | API | |  | d. | CMOS |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 13. If you need to change specific parameters controlling the way your computer boots, which of the following components would you configure?   |  |  |  | | --- | --- | --- | |  | a. | CPU | |  | b. | API | |  | c. | BIOS | |  | d. | Kernel |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 14. Which type of computer is most likely to be used for graphical design, film design, and animation?   |  |  |  | | --- | --- | --- | |  | a. | supercomputer | |  | b. | high-end workstation | |  | c. | PC-class computer | |  | d. | mainframe |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 15. A large institution, such as a bank, may have thousands of transactions to process in which no user interaction is required; which type of computer system are you most likely to use?   |  |  |  | | --- | --- | --- | |  | a. | mainframe | |  | b. | real-time system | |  | c. | Windows PC | |  | d. | high-end workstation |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 16. When a computing environment requires that some processing of applications takes place on a server and on a PC-class computer, which type of system are you using?   |  |  |  | | --- | --- | --- | |  | a. | multiuser system | |  | b. | real-time system | |  | c. | mainframe system | |  | d. | client/server system |  |  |  | | --- | --- | | *ANSWER:* | d | |

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| 17. Which of the following can be described as a client/server computing model that offers scalable Web-based applications and services over the Internet?   |  |  |  | | --- | --- | --- | |  | a. | real-time computing | |  | b. | multiuser computing | |  | c. | cloud computing | |  | d. | ISP computing |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 18. Which of the following accurately describes preemptive multitasking?   |  |  |  | | --- | --- | --- | |  | a. | The OS waits for an application to release control of the processor | |  | b. | The OS allocates resources to applications but remains in full control | |  | c. | The user controls which application uses the CPU and when | |  | d. | The CPU lets each application run for a fixed amount of time |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 19. You are planning to buy a new server that will act as the server portion of a client/server application. A colleague of yours makes some suggestions for the server's OS. Which of the following suggestions are you least likely to adopt?   |  |  |  | | --- | --- | --- | |  | a. | Windows 10 | |  | b. | Linux | |  | c. | Windows Server 2012/R2 | |  | d. | Windows Server 2016 |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 20. You are testing out a new multitasking operating system. In your testing, you find that some applications are not getting sufficient CPU time while other applications are getting more than necessary. Which component is likely to be the cause of this problem?   |  |  |  | | --- | --- | --- | |  | a. | BIOS | |  | b. | CPU | |  | c. | shell | |  | d. | kernel |  |  |  | | --- | --- | | *ANSWER:* | d | |

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| 21. You have installed a new network adapter in a computer and rebooted the operating system. You go to check the settings of the network adapter, but you cannot find the device present in Windows. What is the most likely problem?   |  |  |  | | --- | --- | --- | |  | a. | CMOS settings | |  | b. | kernel configuration | |  | c. | bad or missing device driver | |  | d. | user interface configuration |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 22. Which of the following does NOT require a device driver to be installed in the OS?   |  |  |  | | --- | --- | --- | |  | a. | installing additional RAM | |  | b. | installing a DVD drive | |  | c. | installing a new monitor | |  | d. | installing a printer |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 23. A word processor is best described as which type of operating system element?   |  |  |  | | --- | --- | --- | |  | a. | application programming interface | |  | b. | resource manager | |  | c. | application software | |  | d. | basic input/output system |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 24. Which operating system, usually distributed for free, relies on open source software that is developed by volunteers and contains code in the public domain?   |  |  |  | | --- | --- | --- | |  | a. | Windows Server 2012/R2 | |  | b. | Linux | |  | c. | Windows 10 | |  | d. | Mac OS X |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 25. You are currently designing a cloud computing system that will host scalable Web-based applications accessible through a Web browser. This system will be available only to your company, but the resources will be made available through a third-party. What type of system should you use?   |  |  |  | | --- | --- | --- | |  | a. | private cloud | |  | b. | hybrid cloud | |  | c. | public cloud | |  | d. | hosted private cloud |  |  |  | | --- | --- | | *ANSWER:* | d | |

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| 26. Which type of operating system would be best when implementing a new computing system for an industrial plant that will require an accurate system to receive and process inputs, and calculate the expected outputs in a specified period?   |  |  |  | | --- | --- | --- | |  | a. | real-time | |  | b. | time-sharing | |  | c. | multiuser | |  | d. | client/server |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 27. Which particular type of low-level code is responsible for starting an operating system on a computer?   |  |  |  | | --- | --- | --- | |  | a. | CMOS | |  | b. | real-time system | |  | c. | basic input/output system | |  | d. | POST |  |  |  | | --- | --- | | *ANSWER:* | c | |

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| 28. You want to design a small portable computer system with memory that can be updated, but that does not lose its contents when the device is turned off. What chip should be used?   |  |  |  | | --- | --- | --- | |  | a. | CMOS | |  | b. | ROM | |  | c. | RAM | |  | d. | POST |  |  |  | | --- | --- | | *ANSWER:* | a | |

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| 29. What essential part of the operating system communicates with the BIOS, device drivers, resource managers, and APIs to coordinate operating system functions?   |  |  |  | | --- | --- | --- | |  | a. | CMOS | |  | b. | Kernel | |  | c. | RAM | |  | d. | CPU |  |  |  | | --- | --- | | *ANSWER:* | b | |

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| 30. What type of programs specifically manage central processor and computer memory?   |  |  |  | | --- | --- | --- | |  | a. | batch managers | |  | b. | application program interfaces | |  | c. | task-switching | |  | d. | resource managers |  |  |  | | --- | --- | | *ANSWER:* | d | |

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| **Matching** |

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| Match each item with a statement below.   |  |  | | --- | --- | | a. | application programming interface | | b. | batch processing | | c. | device driver | | d. | kernel | | e. | power-on self test | | f. | resource managers | | g. | shell | | h. | supercomputer | | i. | task switching | | j. | time-sharing system | |

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| 31. programming features in an operating system that programmers can use for network links, links to messaging services, or interfaces to other systems   |  |  | | --- | --- | | *ANSWER:* | a | |

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| 32. a computer style frequently used by large systems. A request for a series of processes is submitted to the computer   |  |  | | --- | --- | | *ANSWER:* | b | |

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| 33. computer software designed to provide the operating system and software access to specific computer hardware   |  |  | | --- | --- | | *ANSWER:* | c | |

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| 34. computer code built into a computer operating system to control processor, disk, memory, and other functions   |  |  | | --- | --- | | *ANSWER:* | d | |

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| 35. tests that are run by the BIOS when a computer first starts   |  |  | | --- | --- | | *ANSWER:* | e | |

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| 36. programs that manage computer memory and CPU use   |  |  | | --- | --- | | *ANSWER:* | f | |

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| 37. an interface to enable humans to interact with an operating system   |  |  | | --- | --- | | *ANSWER:* | g | |

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| 38. a computer that has extreme processing power and speed to handle complex computations that are beyond the reach of other computers   |  |  | | --- | --- | | *ANSWER:* | h | |

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| 39. a hybrid between single-tasking and multitasking that permits the user or application software to switch among multiple single-tasking operations   |  |  | | --- | --- | | *ANSWER:* | i | |

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| 40. a central computer system such as a mainframe that is used by multiple users and applications simultaneously   |  |  | | --- | --- | | *ANSWER:* | j | |

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| **Subjective Short Answer** |

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| 41. Describe the difference between a server operating system and a desktop operating system.   |  |  | | --- | --- | | *ANSWER:* | A desktop operating system typically is one installed on a personal computer usually used by one person and often connected to a network. A server operating system is typically installed on a more powerful computer that has a wired connection to a network, and can act in many roles to enable multiple users to access information, such as e-mail, files, and software. | |

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| 42. List four I/O tasks performed by an operating system.   |  |  | | --- | --- | | *ANSWER:* | Handle input from the keyboard, mouse, and other input devices Handle output to the monitor and printer Manage network communications, such as for a local network and the Internet Control input/output for devices such as a network interface card Control information storage and retrieval using various types of storage media such as hard drives, flash drives, and DVDs Enable multimedia use for voice and video composition or reproduction, such as recording video from a camera or playing music through speakers | |

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| 43. List three jobs performed by the operating system kernel.   |  |  | | --- | --- | | *ANSWER:* | Managing interactions with the CPU Starting, managing, and scheduling programs that handle I/O activities, including device and networking activities Handling basic computer security Managing use of the computer's memory (RAM) Managing priority levels assigned to programs and computer processes | |

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| 44. Describe the role of a resource manager.   |  |  | | --- | --- | | *ANSWER:* | A resource manager manages memory and central processor use to prevent memory conflicts and ensure that no single program dominates all the processing time. | |

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| 45. Describe the function of a device driver.   |  |  | | --- | --- | | *ANSWER:* | The device driver contains the actual code to communicate with the chips on a hardware device. If a new piece of hardware is introduced into the computer, the operating system code does not have to change to communicate with the new device. You simply need to load the new hardware's device driver onto the operating system. | |

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| 46. Describe the role of the BIOS on a computer.   |  |  | | --- | --- | | *ANSWER:* | The BIOS, which is stored on a flash memory chip, is low-level program code that initiates and enables communications with hardware devices and performs tests at startup. The BIOS performs an accurate memory and hardware components test called the power-on self test (POST). It also conducts basic hardware and software communications inside the computer and starts a full-fledged operating system that interfaces with the user. | |

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| 47. Describe the difference between a mainframe computer and a PC-class computer.   |  |  | | --- | --- | | *ANSWER:* | A PC-class computer is designed for individual users to perform tasks such as word processing, database and spreadsheet management, and networking with other computers. PC computers, varying in size and shape, are designed for individual users. Mainframe computers are very large and are designed for multiuser operation, databases, and conduct massive calculations or manipulate large huge amounts of data. | |

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| 48. Describe the difference between a time-sharing system and a real-time system.   |  |  | | --- | --- | | *ANSWER:* | A time-sharing system is a central computer system that is used by multiple users and applications simultaneously. Most of the time-sharing system's work is done in batches, using batch processing. A real-time system is an operating system that receives and processes inputs and produces the required outputs in a specifies amount of time. A real-time computer program immediately performs calculations and returns the answer using sequential processing instead of batch processing. | |

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| 49. List and describe the three types of cloud models described by Microsoft.   |  |  | | --- | --- | | *ANSWER:* | A Private cloud is where computing resources are kept within an organization and used exclusively by that organization. A Hosted private cloud is where resources are made available through a third-party, but are only accessible to users within a specific organization. A Public cloud is where a variety of resources are available to any organization through a third party and each organization subscribes only to specific resources, which may also be shared by other organizations. | |

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| 50. Describe the differences between cooperative multitasking and preemptive multitasking.   |  |  | | --- | --- | | *ANSWER:* | In cooperative multitasking, the operating system hands over control to a program and waits for the program to give control back to the operating system. Whereas, in preemptive multitasking, the operating system is in control of the computer at all times. It lets programs execute a little bit of code at a time, but immediately after the code executes, it forces the program to relinquish control of the CPU back to the OS. | |