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1. A user typed the name of a program at the command-line and pressed Enter. A user interface appeared on the screen. What function did the OS perform?

a. started a process
b. loaded a driver
c. scheduled a service
d. loaded the file system

ANSWER: a

FEEDBACK:
a. Correct. The OS loaded a program and started a process.
b. Incorrect. Drivers are loaded when the OS boots or when a new device is installed.
c. Incorrect. A service is a process without a user interface.
d. Incorrect. The file system is loaded when the OS boots.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.1 - EXPLAIN BASIC OPERATING SYSTEM CONCEPTS
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2. Which OS feature prevents accidental unauthorized access to memory by a program?

a. I/O management
b. process and service management
c. security and resource protection
d. storage management

ANSWER: c

FEEDBACK:
a. Incorrect. I/O management ensures that I/O devices are accessed by only one process at a time.
b. Incorrect. Process and service management involves loading, execution, and termination of processes.
c. Correct. Security and resource protection includes protection from accidental unauthorized access, such as when a poorly written program attempts to access memory outside of its allocated space.
d. Incorrect. With storage management, the OS provides a file system and manages access to files on a storage device.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.1 - EXPLAIN BASIC OPERATING SYSTEM CONCEPTS

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3. When a user clicks the X in a window to close an application, which OS feature is invoked?

a. process and service management
b. security and resource protection
c. storage management
d. device management

ANSWER: a
FEEDBACK:
a. Correct. Process and service management involves loading, execution, and termination of processes.
b. Incorrect. Security and resource protection provides methods for securing access to resources.
c. Incorrect. With storage management, the OS provides a file system and manages access to files on a storage device.
d. Incorrect. Device management is part of memory and I/O management and devices are not involved in this scenario.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.1 - EXPLAIN BASIC OPERATING SYSTEM CONCEPTS
TOPICS: An Introduction to Operating Systems
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4. The code that exchanges information with hardware devices is referred to as which of the following?

a. BIOS
b. file system
c. application
d. device driver

ANSWER: d
FEEDBACK:
a. Incorrect. The BIOS is a component of a computer that provides a power-on self-test, configuration management and a method to boot the computer.
b. Incorrect. A file system provides a method for accessing and organizing files.
c. Incorrect. An application does not access hardware devices directly.
d. Correct. A device driver accesses hardware devices on behalf of other processes.

POINTS: 1
QUESTION TYPE: Multiple Choice

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:
HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components
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5. Which of the following is a program in firmware that locates and loads the bootloader program?

a. process
b. POST
c. bootstrap
d. LILO

ANSWER: c
FEEDBACK:
a. Incorrect. A process is a program or service loaded into memory by the operating system.
b. Incorrect. Th power-on self-test (POST) is a firmware program that tests computer hardware.
c. Correct. The firmware bootstrap program locates and loads the bootloader program.
d. Incorrect. LILO is a Linux bootloader program.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components
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6. Which of the following is NOT a task performed by the computer's BIOS?

a. performs diagnostic tests
b. manages random access memory
c. starts the bootloader
d. initializes I/O devices

ANSWER: b
FEEDBACK:
a. Incorrect. The BIOS performs diagnostic tests called the power-on self-test (POST).
b. Correct. The BIOS does not manage random access memory (RAM).

c. Incorrect. The BIOS starts the bootloader.
d. Incorrect. The BIOS initializes I/O devices.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components
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7. You are listening to music on an old smartphone and you switch to the web browser app which causes your music to stop playing. What type of OS is most likely installed on the smartphone?

a. multitasking
b. multiuser
c. real-time
d. single-tasking

ANSWER: d
FEEDBACK:

a. Incorrect. A multitasking OS would allow a music app and web browser app to run at the same time.
b. Incorrect. A multiuser OS is unlikely to be installed on a smartphone and if it were, a music app and web browser app would be able to run at the same time.
c. Incorrect. A real-time OS is unlikely to be installed on a smartphone and a real-time OS is also a multitasking OS.
d. Correct. A single-tasking OS allows only one app to run at a time.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.2 - Describe the categories of operating systems
TOPICS: Operating System Categories
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8. 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

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d. Kernel

ANSWER: c

FEEDBACK:
a. Incorrect. CPU configuration would not control how the computer boots.
b. Incorrect. An application programming interface (API) provides a way for applications to communicate with the OS or other applications.
c. Correct. The BIOS setup program allows you to configure how the computer boots.
d. Incorrect. The kernel is the core of the OS and does not control how the computer boots.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components
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9. Which type of computing device is designed to perform a specific task such as controlling a refrigerator, and has less than 64 KB of RAM?

a. supercomputer
b. embedded system
c. real-time OS
d. mainframe

ANSWER: b

FEEDBACK:
a. Incorrect. A supercomputer can perform many tasks and is configured with hundreds of gigabytes or more RAM.
b. Correct. A embedded system is a computing device designed to perform a specific task and often has as little as 8 KB of RAM.
c. Incorrect. A real-time OS is designed to control complex processes like an assembly line or robotic system in a deterministic manner. Most RTOSs are multitasking.
d. Incorrect. A mainframe is configured to run large business applications.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.2 - Describe the categories of operating systems
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10. A computer has an operating system installed that is running a directory service and is configured to run without a GUI. What type of OS is most likely installed on the computer?

a. server
b. client
c. mobile
d. real-time

ANSWER: a

FEEDBACK:

a. Correct. A computer that runs a directory service and does not have a GUI is most likely performing the role of a server.
b. Incorrect. A client OS is unlikely to run a directory service and will most likely have a GUI installed.
c. Incorrect. A mobile OS does not run a directory service and has a GUI installed.
d. Incorrect. A real-time OS is not likely to run a directory service.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.3 - Discuss the primary roles of an operating system
TOPICS: Operating System Roles
KEYWORDS: Bloom's: Apply
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11. Which operating system role does Windows 10 most closely fit?

a. server
b. standalone
c. client
d. clustering

ANSWER: c

FEEDBACK:

a. Incorrect. A server OS is designed primarily to share network resources and provide network services to clients. While Windows 10 can share resources, its primary role is to access resources as a client.
b. Incorrect. A standalone computer does not have built-in network capabilities, which Windows 10 has.
c. Correct. Windows 10 is designed as a client operating system.
d. Incorrect. Clustering is not an operating system role; it is a feature of some server OSs.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJE: GUOS.TOMS.21.1.3 - Discuss the primary roles of an operating system

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CTIVES:
TOPICS: Operating System Roles
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12. Which of the following is a service most likely provided by a server OS?

a. web browser
b. word processor
c. DHCP client
d. directory service

ANSWER: d
FEEDBACK:

a. Incorrect. A web browser is an application found on both client and server OSs but is most likely used on a client OS.
b. Incorrect. A word processor is an application found on both client and server OSs but is most likely used on a client OS.
c. Incorrect. A DHCP client is found on client OSs.
d. Correct. A directory service is most likely provided by a server OS such as Active Directory on Windows Server 2019.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.2 - Describe the categories of operating systems
TOPICS: Operating System Categories
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13. Which of the following accurately describes preemptive multitasking?

a. The OS waits for an application to release control of the processor.
b. The OS is in strict control of which processes get CPU time.
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
FEEDBACK:

a. Incorrect. With cooperative multitasking, the OS waits for an application to release control of the processor.
b. Correct. With preemptive multitasking, the OS is in strict control of which processes get CPU time.
c. Incorrect. The user does not have control over which applications get CPU time in either preemptive or cooperative multitasking.
d. Incorrect. The CPU does not control how long an application can run.

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POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.2 - Describe the categories of operating systems
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14. A user, Tim, is sitting at a Windows 10 client computer running an application when he sees a message that another user is trying to access the computer remotely using RDP. The other user cannot access the computer until Tim signs out of Windows. What type of OS is the computer most likely running?

a. single-user
b. single-tasking
c. multiuser
d. server

ANSWER: a
FEEDBACK:
a. Correct. A single-user system will only allow one user to interact with the OS user interface at a time.
b. Incorrect. Windows 10 is a multitasking operating system.
c. Incorrect. A multiuser system would allow two or more users to interact with the OS at a time.
d. Incorrect. Windows 10 is considered a client OS.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.2 - Describe the categories of operating systems
TOPICS: Operating System Categories
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15. 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 enough CPU time. Which component is responsible for determining how much CPU time each application gets?

a. BIOS
b. CPU
c. shell
d. kernel

ANSWER: d

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FEEDBACK:

a. Incorrect. The BIOS is only involved in the initial startup process of a computer.
b. Incorrect. The CPU does not control how much CPU time each application gets.
c. Incorrect. The shell is not involved with application scheduling.
d. Correct. The kernel is responsible for scheduling processes which determines how much CPU time an application gets.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.1 - EXPLAIN BASIC OPERATING SYSTEM CONCEPTS
TOPICS: An Introduction to Operating Systems
KEYWORDS: Bloom's: Apply
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16. 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 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
FEEDBACK:

a. Incorrect. The CMOS settings are unlikely to cause a problem with the installation of a new device.
b. Incorrect. The kernel configuration is unlikely to cause a problem with the installation of a new device.
c. Correct. A missing or incorrect device driver will cause the device to be unrecognized by Windows.
d. Incorrect. A user interface configuration problem will not cause the device to be unrecognized by Windows.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components
TOPICS: Primary Operating System Components
KEYWORDS: Bloom's: Analyze
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17. Which of the following does NOT require a device driver to be installed in the OS?

a. installing additional RAM

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b. installing a DVD drive
c. installing a new monitor
d. installing a printer

ANSWER: a

FEEDBACK:
a. Correct. RAM does not require a device driver. RAM is an integral component to every computer and access to it is built into the motherboard circuitry, so no driver is required.
b. Incorrect. A DVD drive requires a device driver. All devices that the OS reads from or writes to and that are optional components of the computer require a device driver.
c. Incorrect. A monitor requires a device driver. All devices that the OS reads from or writes to and that are optional components of the computer require a device driver.
d. Incorrect. A printer requires a device driver. All devices that the OS reads from or writes to and that are optional components of the computer require a device driver.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components
TOPICS: Primary Operating System Components
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18. You want to terminate a process on a Linux computer using the kill PID command where PID is the process ID and you don't know the process ID. Which command do you need to run first?

a. ls
b. ps
c. rm
d. cd

ANSWER: b

FEEDBACK:
a. Incorrect. The ls command shows a listing of files.
b. Correct. The ps command shows a list of running processes including their PID.
c. Incorrect. The rm command deletes a file.
d. Incorrect. The cd command changes the current directory.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components
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KEYWORDS: Bloom's: Apply

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19. Which of the following is created by a device to get the CPU's attention when a device has input or output data that is ready to process?

a. file handle
b. polling
c. interrupt
d. trap

ANSWER: c
FEEDBACK:
a. Incorrect. A file handle is used to identify open files.
b. Incorrect. Polling is a process that checks I/O devices to see if they have data that is ready to be processed.
c. Correct. An interrupt is a signal, usually generated by an I/O device, that alerts the CPU and OS that a device needs attention (data needs to be read or written, for example).
d. Incorrect. A trap is a software interrupt that a program can use to get immediate kernel services.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components
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20. What can occur in an operating system when a system error such as divide by zero happens?

a. NMI
b. masking
c. polling
d. ISR

ANSWER: a
FEEDBACK:
a. Correct. A non-maskable interrupt (NMI) is a class of interrupts that cannot be turned off and occur when errors such as divide by zero occur.
b. Incorrect. Masking is a process that covers up something. For example, interrupt masking turns off lower priority interrupts when a higher-priority interrupt is being serviced.
c. Incorrect. Polling is a process that checks I/O devices to see if they have data that is ready to be processed.
d. Incorrect. An interrupt service routing (ISR) is a piece of code that is executed when an interrupt occurs.

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POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components
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21. Which of the following is a general-purpose OS that can be categorized as standalone?

a. Windows 3.11
b. QNX
c. Android
d. MS-DOS

ANSWER: d
FEEDBACK:
a. Incorrect. Windows 3.11 was the first Windows OS that came with built-in support for peer-to-peer networking.
b. Incorrect. QNX is a real-time OS that is UNIX-like and as such has networking support.
c. Incorrect. Android is a mobile OS that has built-in networking support.
d. Correct. MS-DOS did not come with built-in networking support.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.3 - Discuss the primary roles of an operating system
TOPICS: Operating System Roles
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22. A colleague of yours is configuring Performance Options on Windows Server 2019 and wants to know how the Processor scheduling setting should be configured. What should you tell him?

a. Programs
b. Foreground processes
c. Background services
d. Applications

ANSWER: c

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FEEDBACK:

a. Incorrect. The Programs setting should be selected for client OSs like Windows 10 since the primary role of a client OS is to run foreground applications. Servers should be configured with the Background services setting since their primary role is to provide services to client OSs, not run foreground programs.

b. Incorrect. Foreground processes is not a valid setting, but servers should be configured with the Background services setting since their primary role is to provide services to client OSs, not run foreground programs.

c. Correct. Servers should use the Background services setting since their primary role is to provide services to client OSs, not run foreground programs.

d. Incorrect. Foreground processes is not a valid setting, but servers should be configured with the Background services setting since their primary role is to provide services to client OSs, not run foreground programs.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.3 - Discuss the primary roles of an operating system
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23. Which of the following features is the least likely to be installed on a computer in which the primary role it will play in the network is a client?

a. DHCP
b. clustering
c. word processor
d. NFS

ANSWER: b

FEEDBACK:

a. Incorrect. Most client computers come with DHCP client software installed.

b. Correct. Clustering is an advanced feature found on server computers that can provide fault tolerance and load balancing.

c. Incorrect. A word processor is a common application found on client computers.

d. Incorrect. NFS is the native file sharing protocol for Linux and the NFS protocol is installed on most Linux computers.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.3 - Discuss the primary roles of an operating system
TOPICS: Operating System Roles
KEYWORDS: Bloom's: Understand

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24. Which feature of an OS provides a method for users to interact with the computer?

a. user interface
b. storage management
c. process management
d. resource protection

ANSWER: a
FEEDBACK:

a. Correct. The user interface provides a method for users to interact with the computer, usually with a keyboard and mouse or touch screen.
b. Incorrect. Storage management provides a file system and a method to access storage devices.
c. Incorrect. Process management loads and unloads programs and services to and from memory.
d. Incorrect. Resource protection provides a method for securing access to resources.

POINTS: 1
QUESTION TYPE: Multiple Choice

HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.1 - EXPLAIN BASIC OPERATING SYSTEM CONCEPTS
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25. Which component of an OS runs with the highest priority?

a. user interface
b. kernel
c. file system
d. user applications

ANSWER: b
FEEDBACK:

a. Incorrect. The user interface, while important, does not run at the highest priority; the kernel does.
b. Correct. The kernel is the heart of the OS and runs with the highest priority because it must schedule all other processes and functions to run.
c. Incorrect. The file system is part of storage management and while access to storage is important, the kernel runs at the highest priority.
d. Incorrect. User applications run at a much lower priority than critical OS components such as the kernel.

POINTS: 1

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QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.1 - EXPLAIN BASIC OPERATING SYSTEM CONCEPTS

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26. Which of the following is a program that runs in the background and does not have a user interface?

a. process
b. service
c. interrupt
d. bus

ANSWER: b

FEEDBACK:

a. Incorrect. A process is a program that is loaded into memory but may run in the foreground or background and may or may not have a user interface.
b. Correct. A service is a process that runs in the background and does not have a user interface. Most OSs have built-in services that handle network communications, the file system, and so forth.
c. Incorrect. An interrupt is a signal generated by an I/O device, not a process.
d. Incorrect. A bus is a hardware component on a computer that carries data between components.

POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.1 - EXPLAIN BASIC OPERATING SYSTEM CONCEPTS

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27. A user is running a word processor, a spreadsheet program, a web browser, and listening to music on their computer. The user tries to open a video file and the computer displays a message indicating that there is not enough RAM to load the file. The user closes the web browser and then successfully opens the video file. Which component of an OS prevented the user from opening the file and then allowed the user to open the file?

a. user interface

b. memory and I/O management
c. security and resource protection
d. storage management

ANSWER: b

FEEDBACK:
a. Incorrect. The user interface was involved in displaying the message but did not prevent or allow the opening of the video file.
b. Correct. The memory manager is responsible for determining if enough memory (RAM) exists to load an application and to mark memory as free when an application terminates.
c. Incorrect. Security and resource protection is primarily concerned with permissions but is not involved with determining whether a file or application can be loaded into RAM.
d. Incorrect. Storage management is involved with locating the video file but is not involved with determining whether the file can be loaded into RAM.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.1 - EXPLAIN BASIC OPERATING SYSTEM CONCEPTS
TOPICS: An Introduction to Operating Systems
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28. A user has created a new folder on their computer to store financial documents. Which OS feature allows the user to create folders and store files on the hard disk.

a. process and service management
b. memory and I/O management
c. kernel
d. storage management

ANSWER: d

FEEDBACK:
a. Incorrect. Process and service management controls the loading, execution, and termination of processes.
b. Incorrect. Memory and I/O management manages the allocation and deallocation of memory and controls access to I/O devices.
c. Incorrect. The kernel performs many tasks but does not provide a method to create folders and store files.
d. Correct. Storage management provides a file system that allows the creation of folders and stores and organizes files.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.1 - EXPLAIN BASIC OPERATING SYSTEM CONCEPTS

Module 01: Operating Systems Fundamentals

TIVES:
TOPICS: An Introduction to Operating Systems
KEYWORDS: Bloom's: Remember
DATE CREATED: 7/30/2020 12:23 PM
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29. Which type of modern computer system is most likely to run a single-tasking OS?

a. embedded system
b. smartphone
c. server
d. desktop client

ANSWER: a
FEEDBACK:
a. Correct. Many embedded systems run a single-tasking OS because they perform a specific task that doesn't require multitasking.
b. Incorrect. Modern smartphones run multitasking OSs like iOS and Android.
c. Incorrect. Server computers run multitasking OSs like Linux and Windows Server 2019.
d. Incorrect. Modern desktop clients run multitasking OSs like Linux, macOS, and Linux.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.2 - Describe the categories of operating systems
TOPICS: Operating System Categories
KEYWORDS: Bloom's: Remember
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30. Which computer is most likely to run a cooperative multitasking operating system?

a. an embedded system that controls a refrigerator
b. a 16-bit desktop computer built in 1992
c. a smartphone built in 2020
d. a server running DHCP, DNS, and Active Directory

ANSWER: b
FEEDBACK:
a. Incorrect. Many embedded systems run a single-tasking OS because they perform a specific task that doesn't require multitasking.
b. Correct. Many OSs running on older 16-bit computers provided only cooperative multitasking.
c. Incorrect. Modern smartphones run preemptive multitasking OSs like iOS and Android.
d. Incorrect. Servers running multiple services use preemptive multitasking OSs.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False

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LEARNING OBJECTIVES: GUOS.TOMS.21.1.2 - Describe the categories of operating systems
TOPICS: Operating System Categories
KEYWORDS: Bloom's: Analyze
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31. What happens on a computer that runs a cooperative multitasking OS if a process runs in an infinite loop?
    a. the OS removes the task from memory
    b. the central processing unit executes a Halt instruction
    c. another process takes over the CPU
    d. the system becomes unresponsive

ANSWER: d
FEEDBACK:
a. Incorrect. The OS cannot remove the task from memory unless it is uses preemptive multitasking.
b. Incorrect. The CPU does not execute a halt instruction because it is running the infinite loop code.
c. Incorrect. Another process cannot take over the CPU in a cooperative multitasking OS.
d. Correct. On a cooperative multitasking system, an infinite loop causes the system to become unresponsive because no other process can be executed by the CPU.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.2 - Describe the categories of operating systems
TOPICS: Operating System Categories
KEYWORDS: Bloom's: Apply
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32. On a cooperative multitasking system, two processes are loaded in memory and process 1 is running. What must occur before process 2 can run?
    a. a timer must expire indicating process 1's time is up
    b. process 1 must relinquish control of the CPU
    c. process 2 must request control of the CPU from process 1
    d. the OS must stop process 1 from executing

ANSWER: b
FEEDBACK:
a. Incorrect. A timer does not control which process is executed in cooperative multitasking.
b. Correct. In cooperative multitasking, the running process must relinquish control of the

CPU to allow other processes to run.

c. Incorrect. In cooperative multitasking, processes do not request control of the CPU from other processes.

d. Incorrect. In cooperative multitasking, the OS cannot stop a process from running.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.2 - Describe the categories of operating systems
TOPICS: Operating System Categories
KEYWORDS: Bloom's: Understand
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33. On a preemptive multitasking system, what event can occur to preempt a running process and allow a new process to get control of the CPU?

a. time slice expiration
b. an infinite loop
c. a lower priority process requires the CPU
d. a memory error

ANSWER: a
FEEDBACK:

a. Correct. A time slice timer can expire, indicating that a new process must be given control of the CPU.
b. Incorrect. An infinite loop is not an event that will cause a task to be preempted.
c. Incorrect. Only a higher priority process requiring the CPU can cause a process to be preempted.
d. Incorrect. A memory error will not cause a process to be preempted but may cause the system to halt.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.2 - Describe the categories of operating systems
TOPICS: Operating System Categories
KEYWORDS: Bloom's: Understand
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34. You are a computer consultant called in to a manufacturing plant. The plant engineer needs a system to control their assembly line that includes robotic arms and conveyors. Many sensors are used and precise timing is required to manufacture the product. Of the following choices, which OS would you recommend to be used on the computing system that controls the assembly line and why?

a. iOS 4 because it is multitasking

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b. MS-DOS because it is single-tasking
c. LynxOS because it is an RTOS
d. Windows Server 2019 because it is multiuser

ANSWER: c

FEEDBACK:
a. Incorrect. A multitasking OS is required but the solution calls for a real-time OS (RTOS) as well.
b. Incorrect. A multitasking real-time OS (RTOS) is required and MS-DOS is neither.
c. Correct. LynxOS is a real-time OS (RTOS) which is required for this scenario.
d. Incorrect. A multiuser OS is not necessarily required, but a real-time OS (RTOS) is, and Windows Server 2019 is not an RTOS.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.2 - Describe the categories of operating systems
TOPICS: Operating System Categories
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35. In the OS boot procedure, which step occurs after the CPU starts?
a. The OS is located by the firmware.
b. The OS is loaded into RAM
c. The CPU executes the firmware startup routines
d. OS processes and services are started.

ANSWER: c

FEEDBACK:
a. Incorrect. This step occurs after the CPU executes firmware startup routines.
b. Incorrect. This step occurs after the OS is located by the firmware.
c. Correct. After the CPU starts, the CPU executes the firmware startup routines.
d. Incorrect. This step occurs after the OS is loaded into RAM.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components
TOPICS: Primary Operating System Components
KEYWORDS: Bloom's: Remember
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36. Which of the following is usually found in firmware and plays a part in starting an operating system?
a. bootstrap

b. LILO
c. NTLDR
d. bootloader

ANSWER: a

FEEDBACK:
a. Correct. The firmware contains an initial bootstrap program that locates and then loads the bootloader which is responsible for loading the initial process that makes up the operating system.
b. Incorrect. LILO is a common Linux bootloader program that is typically stored on disk.
c. Incorrect. NTLDR is a bootloader program used in older Windows versions and is typically stored on disk.
d. Incorrect. The bootloader is responsible for loading the initial process that makes up the operating system but is typically stored on disk.

POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components

TOPICS: Primary Operating System Components

KEYWORDS: Bloom's: Understand

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37. Where is the UEFI most likely to be stored on a modern computer?

a. RAM
b. flash memory
c. hard disk
d. ROM

ANSWER: b

FEEDBACK:
a. Incorrect. The UEFI is a firmware program that plays an important part in the boot process and is stored in non-volatile memory, such as flash memory, not RAM.
b. Correct. The UEFI is a firmware program that plays an important part in the boot process and is stored in non-volatile memory such as flash memory.
c. Incorrect. The UEFI is a firmware program that plays an important part in the boot process and is stored in non-volatile memory, such as flash memory, not the hard disk.
d. Incorrect. The UEFI is a firmware program that plays an important part in the boot process and is stored in non-volatile memory. ROM is non-volatile memory but modern computers do not use ROM to store the firmware; instead using flash memory or sometimes EEPROM.

POINTS: 1

QUESTION TYPE: Multiple Choice

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HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components
TOPICS: Primary Operating System Components
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38. Which of the following is one of the tasks performed by a computer's BIOS?

a. interrupts
b. multitasking
c. storage management
d. POST

ANSWER: d
FEEDBACK:
a. Incorrect. Interrupts are a signal sent to the CPU when a task or device needs attention; they are not a task performed by the BIOS.
b. Incorrect. Multitasking is an operating system function that allows processes to be run at the same time by switching rapidly between processes.
c. Incorrect. Storage management is a tasked performed by the operating system that provides a file system and a method to store and organize files.
d. Correct. The power-on self-test (POST) is a procedure performed by the BIOS that tests the computer's basic hardware components.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components
TOPICS: Primary Operating System Components
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39. Where is the BIOS configuration data stored?

a. EPROM
b. hard drive
c. CMOS
d. ROM

ANSWER: c

FEEDBACK:

a. Incorrect. The BIOS configuration data must be easy to change and EPROM is very difficult to change.
b. Incorrect. The BIOS configuration data must be accessible to the BIOS even if a hard drive does not exist on the system.
c. Correct. The BIOS configuration is stored in a memory chip called complementary metal oxide semiconductor (CMOS) which uses low-power memory technology powered by a battery.
d. Incorrect. The BIOS configuration data must be easy to change and ROM cannot be changed.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components
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40. What type of user interface did IBM PCs running MS-DOS have?

a. GUI
b. point-and-click
c. command line
d. X windows

ANSWER: c

FEEDBACK:

a. Incorrect. A graphical user interface (GUI) was not available on IBM PCs until Windows was available.
b. Incorrect. A point-and-click user interface is a way to describe a graphical interface which was not available on IBM PCs until Windows.
c. Correct. MS-DOS used a command-line interface which was character-based, not graphical.
d. Incorrect. X windows is a graphical user interface used on Linux and UNIX systems.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.5 - Discuss the history of operating systems
TOPICS: A Short History of Operating Systems
KEYWORDS: Bloom's: Remember
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41. Which OS is used the most on modern user desktop computers in business environments?

a. macOS
b. Linux
c. OS2
d. Windows

ANSWER: d

FEEDBACK:

a. Incorrect. macOS is used a lot on desktops used by artists, musicians, and users that use or develop multimedia applications but Windows is used the most in general business environments.
b. Incorrect. Linux has many good desktop features but it lags far behind Windows and macOS for general business desktop usage.
c. Incorrect. OS2 is an old operating system developed by IBM that is now obsolete.
d. Correct. Windows is the most popular desktop OS in the business environment.

POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.5 - Discuss the history of operating systems

TOPICS: A Short History of Operating Systems

KEYWORDS: Bloom's: Remember

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42. Which OS component performs the job of managing interrupt handlers and device drivers?

a. BIOS
b. process manager
c. memory manager
d. kernel

ANSWER: d

FEEDBACK:

a. Incorrect. The BIOS is responsible for the POST and locating and loading the OS and is not involved with managing interrupt handlers and device drivers.
b. Incorrect. The process manager is responsible for loading, scheduling, and terminating processes.
c. Incorrect. The memory manager is responsible for allocating and deallocating memory when requested by processes.
d. Correct. The jobs performed by the kernel include managing interrupt handlers and device drivers.

POINTS: 1

QUESTION TYPE: Multiple Choice

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HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components
TOPICS: Primary Operating System Components
KEYWORDS: Bloom's: Remember
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43. Which feature of modern CPUs help prevent user applications from accessing memory used by the operating system or other processes?

a. interrupts
b. privileged mode
c. memory manager
d. the kernel

ANSWER: b
FEEDBACK:
a. Incorrect. An interrupt is a signal generated by a device or application but does not prevent applications from accessing restricted memory.
b. Correct. Privileged mode is a CPU mode, also called kernel mode, in which a process has unrestricted access to memory. User applications run in user mode and are restricted to accessing only memory locations that have been allocated to them.
c. Incorrect. The memory manager is a component of the OS, not a CPU feature.
d. Incorrect. The kernel is a component of the OS, not a CPU feature.
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False

LEARNING OBJECTIVES: GUOS.TOMS.21.1.4 - Describe the five major operating system components
TOPICS: Primary Operating System Components
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44. What are the two main design standards of UNIX operating systems?

a. BSD and SVR4
b. BSD and Fedora
c. Linux and macOS
d. SVR4 and Solaris

ANSWER: a

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FEEDBACK:

a. Correct. BSD and SVR4 are the two main design standards of the UNIX operating system.
b. Incorrect. BSD is a main UNIX design standard but Fedora is a Linux distribution.
c. Incorrect. Linux is based on UNIX, as is macOS but they are not UNIX design standards.
d. Incorrect. SVR4 is a main UNIX design standard but Solaris is a UNIX vendor, not a design standard.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.6 - List several current general-purpose operating systems
TOPICS: Current General-Purpose Operating Systems
KEYWORDS: Bloom's: Remember
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45. What type of software is developed by volunteers, contains code in the public domain, and helped to make Linux popular?

a. proprietary
b. patented
c. freeware
d. open source

ANSWER: d

FEEDBACK:

a. Incorrect. Proprietary software is developed by a company or individual and the code is generally not made available in the public domain.
b. Incorrect. Patented software has legal protection from being copied and is generally not available in the public domain.
c. Incorrect. Freeware is software that you can download for free. It may also be open source but not necessarily, as the binary code, not the source code, is often the only thing that can be downloaded for free.
d. Correct. Open source software is typically developed by hundreds or thousands of volunteers, contains code in the public domain, and is distributed for free.

POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: False
LEARNING OBJECTIVES: GUOS.TOMS.21.1.6 - List several current general-purpose operating systems
TOPICS: Current General-Purpose Operating Systems
KEYWORDS: Bloom's: Understand
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