

Operating System Modes Comparison

Computer Science · Answer Key · 19 Questions

1. What are the two main modes of operation in an operating system described in the text?

- A) User Mode and Application Mode
- B) Kernel Mode and Driver Mode
- C) User Mode and Kernel Mode**
- D) System Mode and Hardware Mode

2. In Windows, which component resides in User Mode?

- A) Operating System Kernel
- B) Drivers
- C) Applications**
- D) Hardware Abstraction Layer

3. In Windows, which components are part of Kernel Mode?

- A) Applications
- B) User-Mode Drivers
- C) Windows API
- D) Kernel-Mode Drivers**

4. What does the Windows API (Application Programming Interface) facilitate?

- A) Direct hardware access
- B) Communication between user-mode and kernel-mode**
- C) Kernel-mode driver support
- D) Process scheduling

5. What is the primary function of the Operating System Kernel in Windows?

- A) Running user applications
- B) Managing hardware access directly
- C) Providing exported driver support routines
- D) Acting as the core of the OS**

6. In the Linux Operating System diagram, what is the term used for the environment where applications and system libraries run?

- A) Kernel Space
- B) User Space**
- C) Hardware Abstraction Layer
- D) Virtual File System

7. Which component in Linux is responsible for managing memory?

- A) Process Scheduler
- B) Memory Manager**
- C) File System
- D) Inter-Process Communication

8. What is the role of the Process Scheduler in the Linux Operating System?

- A) Managing file storage
- B) Allocating memory to processes
- C) Determining which process runs next**
- D) Handling communication between processes

9. What does the Hardware Abstraction Layer (HAL) in Linux do?

- A) Manages network interfaces
- B) Provides a consistent interface to hardware**
- C) Schedules processes
- D) Handles inter-process communication

10. Which of the following is NOT explicitly listed as a component within the Linux Kernel Space in the diagram?

- A) Memory Manager
- B) File System
- C) Applications**
- D) Process Scheduler

11. The provided image links are for illustrations of which concepts?

- A) Linux kernel structure and Windows OS modes**
- B) CPU and RAM components
- C) Network interface and file system examples
- D) Application development and system calls

12. What is a common characteristic of both Windows and Linux operating systems in terms of their architecture?

- A) They both exclusively use user mode
- B) They both have distinct user and kernel modes**
- C) They do not interact with hardware
- D) They lack a kernel

13. What does 'API' stand for in the context of the Windows Operating System?

- A) Application Processing Interface
- B) Advanced Programming Interface
- C) Application Programming Interface**
- D) Automated Process Interaction

14. In the context of operating systems, what is a 'driver'?

- A) A type of application
- B) A program that allows the OS to interact with hardware**
- C) A component of the user interface
- D) A mechanism for inter-process communication

15. Which part of the Linux OS handles communication between different processes?

- A) Virtual File System
- B) Inter-Process Communication**
- C) Hardware Abstraction Layer
- D) Network Interface

16. The diagram for the Linux Operating System shows 'Applications, System Libraries' residing in which space?

- A) Kernel Mode
- B) User Space**
- C) Hardware Layer
- D) Driver Space

17. What does the 'Virtual File System' in Linux abstract?

- A) The physical location of files**
- B) The network connection
- C) The processor speed
- D) The amount of RAM

18. What is the purpose of 'Exported Driver Support Routines' in the Windows Operating System Kernel?

- A) To allow user applications to access hardware directly
- B) To provide services that kernel-mode drivers can use**
- C) To manage the user interface
- D) To schedule tasks

19. Which of the following are listed as hardware components in the diagrams?

A) Applications, Drivers

B) CPU, RAM, IO

C) API, Kernel

D) Drivers, System Libraries