

OPERATING SYSTEM ANSWER KEY

1. What is the primary function of an operating system?

- **Answer: A) Manage hardware and software resources**

- **Explanation:**

An operating system (OS) manages hardware resources like CPU, memory, and storage and provides services for software applications to run.

2. Which of the following is an example of a GUI-based operating system?

- **Answer: C) Windows**

- **Explanation:**

Windows is a graphical user interface (GUI)-based operating system, which means it uses visual elements like icons, buttons, and windows for user interaction.

3. Which of the following is NOT a type of operating system?

• **Answer: C) Multi-core**

• **Explanation:**

"Multi-core" refers to the hardware architecture of processors, not an operating system type.

Operating system types include single-tasking, multi-user, and real-time.

4. What does the acronym "BIOS" stand for?

• **Answer: B) Basic Input Output System**

• **Explanation:**

BIOS is firmware that initializes and tests hardware components and loads the operating system during the startup process.

5. Which of the following is the most common example of a mobile operating system?

• **Answer: A) Android**

- **Explanation:**

Android is the most widely used mobile operating system, powering many smartphones and tablets.

6. What is the primary purpose of a file system in an operating system?

- **Answer: C) To organize and store files**

- **Explanation:**

The file system organizes and stores data on storage devices, providing a way to manage files and directories.

7. Which of the following operating systems is open-source?

- **Answer: C) Linux**

- **Explanation:**

Linux is an open-source operating system, meaning its source code is publicly available and can be modified and redistributed.

8. Which part of the operating system manages memory allocation?

- **Answer: B) Kernel**

- **Explanation:**

The kernel manages memory allocation and ensures processes are assigned memory resources.

9. Which of the following is NOT an operating system service?

- **Answer: D) File encryption**

- **Explanation:**

File encryption is typically handled by specific applications or security software, not directly by the operating system. OS services include process management, disk management, and user interface handling.

10. Which of these is an example of a real-time operating system (RTOS)?

- **Answer: D) VxWorks**

- **Explanation:**

VxWorks is a real-time operating system designed for embedded systems and time-sensitive applications.

11. Which of the following is a function of an OS scheduler?

- **Answer: D) Schedule tasks for execution by the CPU**

- **Explanation:**

The OS scheduler determines which processes or tasks the CPU should execute at any given time.

12. What is the purpose of virtual memory in an operating system?

- **Answer: B) To simulate more RAM than physically available**

- **Explanation:**

Virtual memory allows the OS to use hard drive space to simulate additional RAM, enabling the system to run more applications than would be possible with physical memory alone.

13. Which of the following is an example of a multitasking operating system?

- **Answer: B) UNIX**

- **Explanation:**

UNIX is a multitasking operating system, which allows multiple processes to run concurrently.

14. What is the main difference between a 32-bit and a 64-bit operating system?

- **Answer: A) 64-bit OS supports more RAM**

- **Explanation:**

A 64-bit OS can address more memory (RAM) than a 32-bit OS, which is limited to 4 GB of RAM.

15. Which of the following is an example of a command-line interface (CLI) operating system?

- **Answer: C) MS-DOS**

- **Explanation:**

MS-DOS is a command-line interface operating system where users interact with the system using text-based commands.

16. Which of the following is a function of the kernel in an operating system?

- **Answer: C) Control hardware and resources**

- **Explanation:**

The kernel controls hardware, memory, and system resources, and provides low-level services for system processes.

17. Which of the following operating systems is primarily used on servers?

- **Answer: D) Both A and B (Linux and Windows Server)**

- **Explanation:**

Both Linux and Windows Server are commonly used as server operating systems due to their stability and robust features for network management.

18. What is the purpose of a device driver in an operating system?

- **Answer: B) To control hardware devices**

- **Explanation:**

Device drivers allow the operating system to interact with hardware components like printers, graphic cards, and network devices.

19. Which of the following is an example of a multi-user operating system?

• **Answer: B) UNIX**

• **Explanation:**

UNIX is a multi-user OS that allows multiple users to access and use the system simultaneously.

20. Which of the following is NOT a type of operating system architecture?

• **Answer: D) Multi-core**

• **Explanation:**

"Multi-core" refers to a processor type, not an OS architecture. Monolithic, microkernel, and client-server are types of OS architectures.

21. Which of the following is NOT a function of an operating system?

• **Answer: C) User data backup**

• **Explanation:**

While operating systems manage memory,

processes, and hardware, user data backup is typically handled by specific backup software, not the OS itself.

22. Which of the following operating systems is based on the Linux kernel?

- **Answer: A) Ubuntu**

- **Explanation:**

Ubuntu is a popular Linux distribution that is based on the Linux kernel.

23. What is a system call in the context of an operating system?

- **Answer: B) A mechanism to request services from the kernel**

- **Explanation:**

A system call is how programs interact with the kernel, requesting services like file access or process control.

24. Which of the following operating systems uses the "ZFS" file system?

- **Answer: C) Solaris**

- **Explanation:**

ZFS is a file system used primarily by Solaris (now owned by Oracle) and is known for high storage capacity and data integrity features.

25. Which type of operating system is designed to manage embedded systems or small devices?

- **Answer: C) Real-Time OS (RTOS)**

- **Explanation:**

Real-Time Operating Systems (RTOS) are designed for embedded systems and devices that require precise timing and fast responses.

26. Which of the following is a key feature of a distributed operating system?

- **Answer: B) Resource sharing across multiple machines**

- **Explanation:**

A distributed OS manages resources across multiple machines, allowing them to appear as a single system.

27. What is the primary purpose of an operating system's "scheduler"?

- **Answer: B) To decide which process runs next**

- **Explanation:**

The scheduler manages process execution, determining which process the CPU should execute next.

28. What does the "swap space" in an operating system refer to?

- **Answer: A) Virtual memory stored on the hard drive**

- **Explanation:**

Swap space is a section of the hard drive used as virtual memory when physical RAM is full.

29. Which of the following is an example of a batch processing operating system?

- **Answer: B) IBM OS/360**

- **Explanation:**

IBM OS/360 was an early batch processing system

where jobs were processed in batches without user interaction.

30. Which of the following OS types allows users to run multiple applications simultaneously?

• **Answer: B) Multi-tasking OS**

• **Explanation:**

Multi-tasking operating systems allow multiple applications to run at the same time, providing better resource utilization.

31. Which of the following components of an OS interacts directly with hardware?

• **Answer: B) Kernel**

• **Explanation:**

The kernel interacts directly with hardware, managing resources like memory and CPU allocation.

32. What is the function of a "kernel" in an operating system?

- **Answer: D) Hardware abstraction and resource management**

- **Explanation:**

The kernel provides a layer between hardware and software, managing hardware resources and system processes.

33. Which of the following is an example of a peer-to-peer operating system?

- **Answer: A) Windows XP**

- **Explanation:**

Windows XP supports peer-to-peer networking, allowing computers to share resources without needing a central server.

34. What does the acronym "GUI" stand for in the context of operating systems?

- **Answer: D) Graphical User Interface**

- **Explanation:**

GUI stands for Graphical User Interface, which allows users to interact with the computer using visual elements like icons and windows.

35. Which of the following is used to manage user accounts in an operating system?

• **Answer: A) User Management Tool**

• **Explanation:**

The user management tool allows administrators to create, modify, and delete user accounts and manage permissions.

36. Which command is used to display the current directory in a Unix-based OS?

• **Answer: B) pwd**

• **Explanation:**

The **pwd** command (print working directory) shows the current directory in a Unix-based OS.

37. What does the "task manager" in Windows allow a user to do?

• **Answer: B) Monitor and manage running processes**

• **Explanation:**

The Task Manager provides information about

running applications and processes, and allows users to end tasks and monitor system performance.

38. Which of the following is true about virtual machines in the context of an operating system?

- **Answer: A) They allow multiple OS to run on a single hardware system**

- **Explanation:**

Virtual machines enable multiple operating systems to run on the same physical hardware using virtualization software.

39. Which of the following is the primary difference between a process and a thread in an operating system?

- **Answer: A) A thread is a lightweight process**

- **Explanation:**

A thread is the smallest unit of execution within a process. Multiple threads can exist within a single process.

40. Which of the following is an example of a multi-threaded operating system?

• **Answer: B) UNIX**

• **Explanation:**

UNIX supports multi-threading, allowing multiple threads to run concurrently within processes.

41. Which of the following file systems is commonly used in Linux-based operating systems?

• **Answer: C) ext4**

• **Explanation:**

ext4 is a widely used file system in Linux-based operating systems.

42. What is the purpose of the "inode" in a Linux file system?

• **Answer: B) To store metadata about files**

• **Explanation:**

Inodes store metadata such as file size, permissions, and timestamps, but not the file's data.

43. Which of the following is NOT a method of inter-process communication (IPC)?

. Answer: C) File management

. Explanation:

File management is not a form of inter-process communication (IPC). IPC methods include message passing, shared memory, and semaphores.

44. Which type of operating system is designed to run on small, resource-constrained devices?

. Answer: C) Embedded OS

. Explanation:

Embedded operating systems are designed for devices like routers, sensors, and other small, specialized systems.

45. What is a "hypervisor" in the context of virtualization?

. Answer: C) Software that creates and manages virtual machines

- **Explanation:**

A hypervisor is software that allows multiple virtual machines to run on a single physical machine.

46. What is the main difference between a "monolithic" kernel and a "microkernel"?

- **Answer: B) A microkernel contains fewer system services than a monolithic kernel**

- **Explanation:**

A microkernel is designed with a minimal set of services, while a monolithic kernel includes many services bundled together.

47. Which of the following is the main purpose of a file system in an OS?

- **Answer: B) To define how data is stored and retrieved**

- **Explanation:**

A file system defines the structure and method by which data is stored, accessed, and managed on storage devices.

48. Which of the following is a common characteristic of a cloud-based operating system?

- **Answer: A) It operates primarily in a network environment**

- **Explanation:**

Cloud-based operating systems rely on network connectivity to provide services and manage data across distributed resources.

49. What is the primary function of a "shell" in an operating system?

- **Answer: B) To interact with the user via command-line or GUI**

- **Explanation:**

The shell provides an interface for users to interact with the operating system, either through a command line or graphical interface.

50. What is the purpose of system logs in an operating system?

- **Answer: B) To keep track of system events and errors**

- **Explanation:**

System logs record events, errors, and important system activities to aid in troubleshooting and monitoring system health.