

--Question Starting--

24. In Linux operating systems, which of the following mechanisms are primarily responsible for interprocess communication (IPC)?

- I. Message Queues
- II. Semaphores
- III. Shared Memory
- IV. File Descriptors

Select all that apply:

- (1) I, II, and III only
- (2) II and IV only
- (3) I, III, and IV only
- (4) All of the above

Answer Key: 1

Solution:

Message Queues (Correct): Facilitate message exchange between processes.

Semaphores (Incorrect): They are mainly used for synchronization, not IPC.

Shared Memory (Correct): Allows processes to communicate via shared data.

File Descriptors (Incorrect): They are handles for files, sockets, etc., not IPC mechanisms.

Hence, the correct answer is Option (1).

--Question Starting--

25. Consider a raster-scan display system. Which of the following attributes correctly describe the process of generating an image?

- I. It involves sequentially scanning each row from left to right.
- II. The electron beam in CRT moves in a zigzag pattern.
- III. Pixels are illuminated during the retrace period.
- IV. The system uses a frame buffer to store pixel data before display.

Choose the correct answer:

- (1) I and IV only
- (2) II and III only
- (3) I, II, and IV only
- (4) All of the above

Answer Key: 1

Solution:

Statement I (Correct): Raster-scan systems scan line by line from left to right.

Statement II (Incorrect): Electron beam in CRT moves in a raster pattern, not zigzag.

Statement III (Incorrect): Pixels are illuminated during active scan, not retrace.

Statement IV (Correct): Frame buffer stores pixel data before display refresh.

Hence, the correct answer is Option (1).

--Question Starting--

26. Which of the following statements regarding Windows operating systems design principles and components are true?

- I. Windows employs a layered architecture with kernel, HAL, and user mode components.
- II. Terminal Services enable remote desktop sharing.
- III. Fast User Switching allows multiple users to share a session simultaneously.
- IV. Windows file system is based on FAT32 exclusively.

Select the correct set of statements:

- (1) I, II, and III only
- (2) II and IV only
- (3) I and IV only
- (4) All of the above

Answer Key: 1

Solution:

Statement I (Correct): Windows architecture includes kernel, HAL, and user mode layers.

Statement II (Correct): Terminal Services facilitate remote access.

Statement III (Correct): Fast User Switching allows multiple user sessions.

Statement IV (Incorrect): Windows supports multiple file systems, including NTFS, FAT32, etc.

Hence, the correct answer is Option (1).