



RAPID MCQ 03

OPERATING SYSTEMS

2026 A/L ICT

Become a Tech-Savvy Entrepreneur

STUDENT ID

NAME

DATE

1. The **turnaround time** of a process is best defined as:
 - A. Time spent by a process waiting in the ready queue
 - B. Time taken from process submission to process completion
 - C. Time between issuing a command and the first response from the system
 - D. Time during which the process is actually executing on the CPU
 - E. Number of processes completed per unit time
2. A user types a command and the system starts displaying output after 2 seconds. This 2 seconds is called:
 - A. Turnaround time
 - B. Waiting time
 - C. Throughput
 - D. Response time
 - E. Execution time
3. In an operating system, **throughput** measures:
 - A. The maximum size of main memory
 - B. The total time taken by a single process
 - C. The number of processes completed per unit time
 - D. The average waiting time in the ready queue
 - E. The time required to load a process into memory
4. A process is in **main memory**, ready to run, but is waiting for the CPU. Its PCB will be placed in the:
 - A. Job queue
 - B. Device queue
 - C. Ready queue
 - D. Suspended queue
 - E. Terminated queue
5. A process is waiting for a printer because the printer is currently busy. The PCB of this process will be placed in the:
 - A. Ready queue
 - B. Job queue
 - C. CPU queue
 - D. Device queue
 - E. Input queue
6. In **non-preemptive scheduling**:
 - A. The OS can interrupt a running process at any time
 - B. A running process keeps the CPU until it finishes or blocks for I/O
 - C. Processes are always scheduled according to shortest remaining time
 - D. A higher-priority process always immediately preempts a lower-priority one
 - E. Only one process can be in the ready queue
7. Which of the following is the **main role** of the Memory Management Unit (MMU)?
 - A. To store all user programs permanently
 - B. To translate virtual (logical) addresses to physical addresses



- C. To increase the physical size of RAM
 - D. To manage only input/output devices
 - E. To execute user programs directly from secondary storage
8. In a simple MMU scheme using a base (relocation) register, if the base register contains **10000** and a user process generates the address **250**, what physical address is used?
- A. 10000
 - B. 10250
 - C. 25000
 - D. 10025
 - E. 99750
9. **Virtual memory** allows a computer system to:
- A. Execute only programs that fully fit in physical RAM
 - B. Use part of the hard disk to behave like an extension of RAM
 - C. Eliminate the need for physical memory
 - D. Avoid using any form of address translation
 - E. Store data only in ROM
10. Which of the following is a **direct benefit** of using virtual memory and paging?
- A. The CPU clock speed automatically increases
 - B. Programs are restricted to the size of physical memory
 - C. Processes can have protected address spaces independent of actual physical memory layout
 - D. The system no longer needs an operating system
 - E. There is no need for a Memory Management Unit (MMU)
11. A photo-editing program is applying a complex filter that takes about 15 seconds of continuous CPU time. During this time, no other program gets CPU time because the OS does not interrupt the filter once it starts. Which type of CPU scheduling is the OS most likely using?
- A. Preemptive scheduling
 - B. Non-preemptive scheduling
 - C. Round-robin scheduling
 - D. Priority preemptive scheduling
 - E. Multilevel queue scheduling
12. On a shared computer in a school lab, several students start running programs at the same time. You notice that although each program responds a bit slower, **all** programs seem to get a chance to run. Which metric has most likely **improved** compared to running a single program?
- A. Turnaround time of each process
 - B. Response time of each process
 - C. Throughput of the system
 - D. Waiting time of each process
 - E. CPU clock speed
13. A user double-clicks a music player app. The app window appears almost instantly, but it takes a few more seconds before the song starts playing smoothly. Which part of the user experience mainly depends on **good response time**?
- A. Time taken to search for music files
 - B. Time taken to draw the app window on the screen
 - C. Time taken to shut down the computer
 - D. Time taken to save the playlist to disk
 - E. Time taken to copy music to a USB drive

14. A bank's transaction processing system needs to make sure that no single long process blocks the CPU, because many short balance-check operations must be handled quickly. What kind of scheduling behavior is MOST suitable in this situation?
- A. Let each long process run until it finishes
 - B. Always schedule the longest process first
 - C. Frequently interrupt running processes to give others a chance
 - D. Run only one process at a time with no switching
 - E. Move all short processes to the job queue permanently
15. On a home computer, a user starts printing a 20-page document while also browsing the web and listening to music. The browser and music player still run smoothly, even though the printer is busy. What is the MOST accurate explanation?
- A. The printing process runs only in ROM
 - B. The printing process is placed in a device queue while the CPU runs other processes
 - C. The CPU stops all processes until printing is done
 - D. The ready queue is disabled while printing
 - E. The MMU is turned off during printing
16. A game on your computer loads quickly, but during play it sometimes pauses briefly when loading new levels because data must be brought from the hard disk into RAM. What is the MOST likely resource the operating system is managing in this situation?
- A. CPU registers
 - B. Network bandwidth
 - C. Physical main memory
 - D. Printer buffer
 - E. Keyboard input buffer
17. A company runs many large applications on a computer that has only 8 GB of physical RAM. However, they can still open and run programs whose total size is more than 8 GB (though the system becomes slower). Which OS feature makes this possible?
- A. Device drivers
 - B. Virtual memory with paging
 - C. Only using ROM for storage
 - D. Removing the MMU from the CPU
 - E. Running all programs directly from cache
18. A student's program has a bug and enters an infinite loop, using the CPU continuously. However, the operating system still lets other programs run; the infinite loop is paused and resumed repeatedly. What OS feature is MOST responsible for preventing the infinite loop from blocking all other processes?
- A. Non-preemptive scheduling
 - B. Preemptive scheduling with time slices
 - C. Static memory allocation
 - D. Use of device queues
 - E. Use of ROM instead of RAM
19. A graphics design application uses a very large image file that cannot fully fit in physical memory at once. The OS loads only the parts of the image currently being edited into RAM, and swaps other parts to disk when needed. What is this behavior an example of?
- A. Contiguous memory allocation
 - B. Static linking of programs
 - C. Demand paging in virtual memory
 - D. Direct execution from cache memory
 - E. Sequential file access

20. An operating system uses a base (relocation) register to support multiple user processes. During execution, a user program generates a virtual address that accidentally goes beyond its allowed range. How does the OS most likely respond to protect other processes?
- A. It wraps the address back to zero and continues
 - B. It directly writes to another process's memory
 - C. The MMU detects the invalid address and triggers an interrupt or error
 - D. The CPU automatically corrects the address to a valid one
 - E. The OS ignores the address and skips the instruction