OS_3

Question #1 (1 point)

_____ is the act of allowing only one process to have access to a dedicated resource

- No preemption
- Circular wait
- Resource holding
- (•) Mutual exclusion

Question #2 (1 point)

Which of the following is true about Atomic action on semaphores?

- Checking the value
- Changing the value
- Possibly going to sleep
- (•) All of the other choices

Question #3 (1 point)

What is the purpose of process synchronization?

- Let different users run different processes independently
- (•) Avoid race condition
- Avoid deadlock
- None of the other choices

Question #4 (1 point)

Which is true about Mutex?

- A simplified version of the semaphore when the semaphore’s ability to count is not needed
- Is good only for managing mutual exclusion to some shared resource or piece of code
- Is a variable that can be in one of two states: unlocked or locked

- ○ All of the other choices

Question #5 (1 point)

Which is not a goal of a scheduling algorithm for all systems?

- ◉ Response time
- ○ Policy enforcement
- ○ Balance
- ○ Fairness

Question #6 (1 point)

Which of the following is appropriate to release page table and pages?

- ○ Process creation
- ○ Process execution
- ○ Page fault time
- ◉ Process termination time

Question #7 (1 point)

Five batch jobs A through E, arrive at a computer center at almost the same time. They have estimated running times of 8, 6, 2, 10, and 4 minutes. . Determine the average waiting time for FCFS scheduling. Ignore process switching overhead.

- ○ 17 minutes
- ○ 18 minutes
- ○ 18.8 minutes
- ◉ 12,8 minutes

Question #8 (1 point)

How many level of scheduling are used in computer

- ○ 1
- ◉ 2

- 3
- 4

Question #9 (1 point)

What is Higher-level proposal in the solution of Mutual exclusion and Synchronization?

- Message passing
- Monitors
- Peterson's Solution
- Disable Interrupts

Question #10 (1 point)

What is Software proposal in the solution of Mutual exclusion with Busy waiting?

- Message passing
- Monitors
- Peterson's Solution
- All of the other choices

Question #11 (1 point)

Which of the following is not a CPU scheduling criterion?

- CPU utilization
- Burst time
- Throughput
- Response time

Question #12 (1 point)

Which of the following conditions of semaphore variable “s” implies a busy critical region?

- s > 0

- ○ s < 0
- ◉ s = 0
- ○ None of the other choices

Question #13 (1 point)

Which of the following synchronization mechanisms does not rely on busy-waiting?

- ○ Lock variables
- ◉ Strict alternation
- ○ Peterson's algorithm
- ○ Semaphores

Question #14 (1 point)

In order to implement mutual exclusion on a critical resource for competing processes, only one program at a time should be allowed:

- ◉ In the critical region of the program
- ○ To perform message passing
- ○ To exhibit cooperation
- ○ None of the other choices

Question #15 (1 point)

The scheduling strategy where each process in the queue is given a certain amount of time. After this time has elapsed, the process is preempted and added to the end of the ready queue is referred to as:

- ○ Prioritization
- ○ Round-Robin
- ○ LIFO
- ○ All of the other choices

Question #16 (1 point)

What is the purpose of CPU scheduling algorithms?

- (•) Pick one of the ready processes to run next
- ( ) Put to sleep and wake up processes in an efficient manner
- ( ) Allocate memory to the processes in a fair and efficient way
- ( ) None of the other choices

Question #17 (1 point)

Some systems increase the priority of jobs that have been in the system for an unusually long time to expedite their exit, which is known as _____.?

- ( ) Lagging
- ( ) Bumping
- (•) Aging
- ( ) Accelerated priority

Question #18 (1 point)

Which of the following statements about semaphores is true?

- ( ) P and V (Down and Up) operations should be indivisible operations
- ( ) If several processes attempt a P(S) operation simultaneously, only one process should be allowed to proceed.
- ( ) A semaphore implementation should guarantee that processes do not suffer indefinite postponement.
- (•) All of the other choices

Question #19 (1 point)

The first-come, first-served (FCFS) algorithm is fine for most _____ systems

- ( ) Interactive
- (•) Batch
- ( ) Real time
- ( ) Multiuser

Question #20 (1 point)

Semaphores that are initialized to 1 and used for two or more processes to ensure only one can enter its critical section at the same time are called:

- (•) Binary semaphores
- ( ) Integer semaphores
- ( ) Counter semaphores
- ( ) None of the other choices

Question #21 (1 point)

A entry of the Process table is called:

- ( ) Process management block
- (•) Process control block
- ( ) Process check block
- ( ) All of the other choices

Question #22 (1 point)

Five batch jobs A through E, arrive at a computer center at almost the same time. They have estimated running times of 8, 6, 2, 10, and 4 minutes. Their (externally determined) priorities are 3, 5, 2, 1, and 4, respectively, with 5 being the highest priority. Determine the average waiting time for Priority scheduling. Ignore process switching overhead.

- (•) 10,8 minutes
- ( ) 12,8 minutes
- ( ) 16,8 minutes
- ( ) 54 minutes

Question #23 (1 point)

Which of the following environments preemption is essential?

- ( ) Batch
- ( ) Interactive
- ( ) Real time
- (•)

None of the other choices

Question #24 (1 point)

Which of the following statements is true about hardware solution to the critical region problem?

- (•) Disable Interrupts
- ( ) Monitors
- ( ) Semaphore
- ( ) None of the other choices

Question #25 (1 point)

What happens when a thread calls Down (S) when it wants to enter its critical section, where S is a binary semaphore set to 1?

- ( ) The thread is allowed to enter its critical section and S is decremented.
- ( ) The thread is blocked and added to a queue of waiting threads.
- ( ) The semaphore is set to 2.
- ( ) None of the other choices

Question #26 (1 point)

Which is not a goal of a scheduling algorithm for real-time systems?

- ( ) Meeting deadlines
- ( ) Predictability
- ( ) Fairness
- ( ) None of the other choices

Question #27 (1 point)

Which of the following is a preemptive scheduling algorithm

- ( ) FCFS
- ( ) Shortest Job First
- (•) Round Robin

- None of the other choices

Question #28 (1 point)

Assume jobs A-D arrive in quick succession in the READY queue. Using round robin scheduling (quantum=4), the turnaround time for job B is _____.
Arrival time: 0 1 2 3
Job: A B C D
CPU cycle: 8 4 9 5

- 7
- 20
- 22
- 24

Question #29 (1 point)

Which one cannot be able to solve the race condition?

- TSL
- Shared memory
- Semaphore
- Monitor

Question #30 (1 point)

Five batch jobs A through E, arrive at a computer center at almost the same time. They have estimated running times of 8, 6, 2, 10, and 4 minutes. Determine the average waiting time for SJF (Shortest job first) scheduling. Ignore process switching overhead.

- 14 minutes
- 8 minutes
- 6 minutes
- 18.8 minutes

Question #31 (1 point)

Which statement about disabling interrupts to resolve race conditions is

wrong?

- In theory, a program can disable interrupts when it enters a critical section, and re-enable interrupts when finished with a critical section, to eliminate race conditions.
- Disabling/enabling interrupts may negatively affect the I/O system.
- Programs with infinite loops in their critical sections are a significant problem with the interrupt-based approach.
- (•) User-mode programs are the best place to invoke disableInterrupt().

Question #32 (1 point)

Five batch jobs A through E, arrive at a computer center at almost the same time. They have estimated running times of 8, 6, 2, 10, and 4 minutes. Determine the average turnaround time for SJF (Shortest job first) scheduling. Ignore process switching overhead.

- 14 minutes
- (•) 8 minutes
- 6 minutes
- 18.8 minutes

Question #33 (1 point)

Which is not a goal of a scheduling algorithm for batch systems?

- CPU utilization
- Throughput
- Turnaround time
- Response time

Question #34 (1 point)

Which of the following is correct about Shortest Job First scheduling algorithm?

- Avoid Starvation
- (•) Minimize average waiting time
- Avoid Starvation and Minimize average waiting time
- None of the other choices

Question #35 (1 point)

Which is a method of interprocess communication that use two primitive send and receive?

- Lock variables
- Message passing
- Peterson’s algorithm
- Semaphores

Question #36 (1 point)

Assume that four jobs A-D require the CPU cycles listed below. Using the Shortest Job First algorithm, the _____ job is run first.
Arrival time: 4 1 0 2
Job: A B C D
CPU cycle: 5 2 6 4

- A
- B
- C
- D