CSC227 – Final Exam – Spring 2021 - Male

QUESTION 1

Thread shares with other threads belonging to the same process its
....
A. Thread ID
B. Program counter
C. Register set and a stack
D. Code section and data section

QUESTION 2

Maximum concurrency can be achieved by ....
A. Many to One model
B. One to Many model
C. Many to Many model
D. One to One model

QUESTION 3

A multiple threaded process can ....
A. Do more than one task at a time
B. Do only one task at a time, but much faster
C. Use only one thread per process
D. Run in parallel

QUESTION 4

What is true about a thread?
A. Threads do not require context switching.
B. Threads can share ID, same set of open files, child processes.
C. Threads are CPU efficient.
D. Cannot be part of multiple processes.

QUESTION 5

Amdahl's Law tells us that speed up of performance
is ....
A. Directly proportional to serial portion of a program
B. Directly proportional to parallel part of a program
C. Indirectly proportional to serial portion of a program
D. Indirectly proportional to parallel portion of a program

QUESTION 6

Termination of the process terminates ....
A. First thread of the process
B. First two threads of the process
C. All threads within the process
D. No thread within the process

QUESTION 7

Multithreading increases responsiveness by ……………………
A. Continuing to run even if a part of it is blocked
B. Waiting for one part to finish before the other begins
C. Asking the user to decide the order of multithreading
D. Having more kernel threads.

QUESTION 8

Lightweight process (LWP) is an intermediate data structure between user
and kernel threads on which ....
A. Process can schedule user thread to run.
B. Process can schedule kernel thread to run.
C. Process can schedule both user thread and kernel thread to run.
D. None of the above.

QUESTION 9

Thread created entirely in user space ....
A. Does not invoke system call.
B. Invokes a system call.
C. Invokes a kernel call.
D. Invokes java method.

QUESTION 10

Thread cancellation is ....
A. The task of destroying the thread once its work is done
B. The task of removing a thread once its work is done
C. The task of terminating a thread before it has completed
D. Deferring the thread

QUESTION 11

Which memory management technique breaks the process address space into same size blocks?
A. Segmentation
B. Paging
C. Address translation
D. Frames

QUESTION 12

Consider a machine with 64 MB physical memory and a 32-bit virtual address space. If the page size is 4KB, what is the approximate size of the page table?
A. 16 MB
B. 8 MB
C. 2 MB
D. 24 MB

QUESTION 13

If there are 32 segments, each size 1K bytes, then the logical address should have ....

A. 13 bits

B. 14 bits

C. 15 bits

D. 16 bits

QUESTION 14

What is the swap space in the disk used for?

A. Saving temporary html pages

B. Saving process data

C. Storing the super-block

D. Storing device drivers

QUESTION 15

The operating system and the other processes are protected from being modified by an already running process because

A. they are in different memory spaces

B. they are in different logical addresses

C. they have a protection algorithm

D. every address generated by the CPU is being checked against the relocation and limit registers

QUESTION 16

In a system with 32 bit virtual addresses and 4 KB page size, use of one-level page tables for virtual to physical address translation is not practical because of ....

A. the large amount of internal fragmentation

B. the large amount of external fragmentation

C. the large memory overhead in maintaining page tables

D. the large computation overhead in the translation process

QUESTION 17

Page table is kept in the main memory and .... points to the page table.

A. Stack pointer
B. Page pointer
C. Program counter
D. Page table base register

QUESTION 18

External fragmentation will not occur when ……………………………..

A. first fit is used
B. worst fit is used
C. best fit is used
D. no matter which algorithm is used, it will always occur

QUESTION 19

A multilevel page table is preferred in comparison to a single level page table for translating virtual address to physical address because ……….

A. It reduces the memory access time to read or write a memory location.
B. It helps to reduce the size of page table needed to implement the virtual address space of a process.
C. It is required by the translation lookaside buffer.
D. It helps to reduce the number of page faults in page replacement algorithms.

QUESTION 20

Consider a segment table that has segment ID 2 with base 1527 and limit 498. What happens if the logical address requested is – Segment ID 2 and offset 1000?

A. Physical address 2527 for segment ID 2
B. Trap - segmentation error
C. Deadlock
D. Physical address 27 in Segment ID 2

QUESTION 21

The scheduling in which CPU is allocated to the process with least CPU-burst time is called …………

A. Priority Scheduling

B. Shortest job first Scheduling

C. Round Robin Scheduling

D. Multilevel Queue Scheduling

QUESTION 22

Short-term scheduler selects from among the processes in …………. and allocates the CPU to one of them

A. waiting queue

B. I/O queue

C. ready queue

D. Job queue

QUESTION 23

CPU scheduling decisions may take place when a process:

1. Switches from running to waiting state

2. Switches from running to ready state

3. Switches from waiting to ready

4. Terminates

Which statement is true among the following?

A. Scheduling under 1 and 4 is preemptive

B. Scheduling under 1 and 4 is nonpreemptive

C. Scheduling under 2 and 3 is nonpreemptive

D. Scheduling under 1 , 2, 3 and 4 is nonpreemptive

QUESTION 24

Among the scheduling algorithm optimization criteria is the

…………………

A. Minimization of the CPU utilization

B. Maximization of the throughput

C. Maximization of the turnaround time.

D. Maximization of the response time.

QUESTION 25

The next CPU burst of the newly arrived process may be shorter than what is left of the current executing process. A ……………will preempt the current executing process.

A. Preemptive priority scheduling algorithm
B. Nonpreemptive SJF algorithm
C. Preemptive SJF algorithm
D. First-come, First-Served scheduling

QUESTION 26

Suppose that the following processes arrive for execution at the times indicated. Each process will run for the amount of time listed. In answering the questions, use non-preemptive scheduling, and base all decisions on the information you have at the time the decision must be made.

Process	Arrival Time	Burst Time
P1	0	8
P2	4	4
P3	10	10

What is the average turnaround time for these processes with the FCFS scheduling algorithm?

A. 10.20
B. 9.33
C. 10.02
D. 10.35

QUESTION 27

Consider the below table of processes with their respective CPU burst times and the priorities. Suppose all of the processes come at the same time zero.

Process	Burst Time	Priority
P1	21	2
P2	3	1
P3	6	4
P4	2	3

P2 has the highest priority here.

The GANTT chart following processes based on priority scheduling will be:

P2 (0----------3); P1 (3 ------------------------------------ 24); P4 (24 ----- 26); P3 (26 ----- 32);

The average waiting time will be: ……………………

A. 15.35
B. 16.25
C. 13.25
D. 14.25

QUESTION 28

Round Robin scheduling falls under the category of _____
A. Nonpreemptive scheduling
B. Preemptive scheduling
C. All the above mentioned
D. None of the above mentioned

QUESTION 29

In priority scheduling algorithm, when a process arrives at the ready queue, its priority is compared with the priority of _____
A. All processes
B. Current running process
C. Parent process
D. Initial process

QUESTION 30

Process are classified into different groups in ……………………………

A. Shortest job scheduling algorithm
B. Round robin scheduling algorithm
C. Priority scheduling algorithm
D. Multilevel queue scheduling algorithm

QUESTION 31

Mutual exclusion

A. if one process is in a critical region others are excluded
B. Prevents deadlock
C. Requires semaphores to implement
D. Is found only in the Windows NT operating system

QUESTION 32

The section of code which accesses shared variables is
called ....

A. Block
B. Critical section
C. Semaphore
D. Deadlock

QUESTION 33

Semaphore can be used for solving

A. Wait & signal
B. Deadlock
C. Priority
D. Synchronization

QUESTION 34

Several processes access and manipulate the same data concurrently and the outcome of the execution depends on the particular order in which the access takes place, is called a(n) ....

    A. Shared Memory Segments
    B. Entry Section
    C. Race condition
    D. Process Synchronization

QUESTION 35

A semaphore is:
    A. Integer
    B. Shared integer
    C. Binary number
    D. Compute number

QUESTION 36

A semaphore S is an integer variable that, apart from initialization, is accessed only through two standard atomic operations:
    A. exec() and exit()
    B. exec() and signal()
    C. wait() and exit()
    D. wait() and signal()

QUESTION 37

Preemptive kernels, are not free from race conditions because ....
    A. They share kernel data
    B. They share user data
    C. They share semaphore data
    D. They use multiple CPUs

QUESTION 38

What is not true about test_and_set instruction?
   A. Atomically executed.
   B. Returns the original value of passed parameter
   C. Set the new value of passed parameter to "TRUE".
   D. Set the variable "value" the value of the passed parameter "new_value" but only if "value" =="expected

QUESTION 39

The advantage of spin lock is that ....
   A. It does not require context switching
   B. It does not require value update
   C. It does not require semaphores
   D. It's a hardware solution.

QUESTION 40

Block and wait operations are used to avoid ....
   A. Deadlock
   B. Race condition
   C. Busy waiting
   D. Critical section