

When the currently running processes is suspended a new process will be selected to run by the scheduler, then the currently running process must be saved in the PCB and restore the status from the PCB this process is called as

Select one:

- a.
Interrupting
- b.
Swapping
- c.
Paging
- d.
Context switching
- e.
Dispatching

[Next page](#)



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Question 11

Not yet answered
Marked out of
1.00

[Flag question](#)

A computer has 4GB virtual memory and 512MB RAM. If the page size is 8KB. Find the number of pages in this system.

Select one:

- a. 2^8 pages
- b. 2^{19} pages
- c. 2^{24} pages
- d. 2^{20} pages
- e. 2^{16} pages

[Next p](#)

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Question 11
Not yet answered
Marked out of 1.00
 Flag question

A computer has 4GB virtual memory and 512MB RAM. If the page size is 8KB. Find the number of pages in this system.

Select one:

- a. 2^8 pages
- b. 2^{19} pages
- c. 2^{24} pages
- d. 2^{20} pages
- e. 2^{16} pages

Next page

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Question 6
Not yet answered
Marked out of 1.00
 Flag question

If the semaphore is implemented using the block and wake up technique, if there is a one process waiting for the semaphore in the waiting queue. What is the value of the semaphore at this time?

Select one:

- a. 1
- b. -1
- c. -2 A
- d. 0
- e. 2

Next page

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A computer RAM speed is 200ns and TLB (Associate register) speed is 20ns. If the paging system is used find the memory access time.

Select one:

- a. 10ns
- b. 400ns
- c. 200ns
- d. 210ns
- e. 100ns

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Disk requests come in the disk driver for cylinders 10, 22, 2, 40, 6, and 38, in that order. A seek takes 6 ms per cylinder moved. Assuming the arm is initially at cylinder 20, and moving toward larger cylinder number for a disk with 64 cylinders, how much seek time is needed for C-SCAN algorithm.

Select one:

- a. 624ms
- b. 348ms
- c. 58ms
- d. 696ms
- e. 928ms

[Next page](#)

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A computer RAM speed is 200ns and TLB (Associate register) speed is 20ns. If the paging system is used find the memory access time.

Select one:

- a. 10ns
- b. 400ns
- c. 200ns
- d. 210ns
- e. 100ns

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Disk requests come in the disk driver for cylinders 10, 22, 2, 40, 6, and 38, in that order. A seek takes 6 ms per cylinder moved. Assuming the arm is initially at cylinder 20, and moving toward larger cylinder number for a disk with 64 cylinders, how much seek time is needed for C-SCAN algorithm.

Select one:

- a. 624ms
- b. 348ms
- c. 58ms
- d. 696ms
- e. 928ms

[Next page](#)

Which is a memory allocation strategy in contiguous allocation?

Select one:

- a. Worst Fit
- b. Fast Fit
- c. Segmentation
- d. Compaction
- e. Paging

Disk requests come in the disk driver (0 to 999 cylinders) for cylinders 400, 200, 100, 500, 800, and 300, in that order. A seek takes 10 ms per cylinder moved. Assuming the arm is initially at cylinder 600, and moving toward larger cylinder number for a disk with 1000 cylinders, how much seek time is needed for C-LOOK algorithm:

Select one:

- a. 12000ms
- b. 1298ms
- c. 9000ms
- d. 12980ms
- e. 17980ms

Which is a memory allocation strategy in contiguous allocation?

Select one:

- a. Worst Fit
- b. Fast Fit
- c. Segmentation
- d. Compaction
- e. Paging

Select the most correct average turnaround time for preemptive shortest job first scheduling.

Process	Arrival time	Burst time
A	0	7
B	1	3
C	5	2
D	7	2

Select one:

- a. 5.75 seconds
- b. 5.25 seconds
- c. 5.5 seconds
- d. 5 seconds

TOTAL QUESTIONS

Sri Lanka Institute of Information Technology

Disk requests come in the disk driver (0 to 999 cylinders) for cylinders 400, 200, 100, 500, 800, and 300, in that order. A seek takes 10 ms per cylinder moved. Assuming the arm is initially at cylinder 600, and moving toward larger cylinder number for a disk with 1000 cylinders, how much seek time is needed for C-LOOK algorithm:

Select one:

- a. 12000ms
- b. 1298ms
- c. 9000ms
- d. 12980ms
- e. 17980ms

Quiz navigation

Topics and Sub-topics

Total time: 100.00

Attempts: 1/100

Time left: 00:00:00

TOTAL QUESTIONS

Sri Lanka Institute of Information Technology

A solution to the external fragmentation problem is

Select one:

- a. MMU
- b. Swap in
- c. Segmentation
- d. Paging
- e. Swap out

Answered
of
Question

When the currently running processes is suspended a new process will be selected to run by the scheduler, then the currently running process must be saved in the PCB and restore the status from the PCB this process is called as

Select one:

- a. Interrupting
- b. Swapping
- c. Paging
- d. Context switching
- e. Dispatching

C | i | A



NetExam

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When several processes access the shared data concurrently and the code segment which updates the shared date is called as?

Select one:

- a. Progress condition
- b. Critical Section
- c. Race condition
- d. Exit Section
- e. Mutual Exclusion



5

Answered
out of
question

A type of semaphore which is using a loop to check whether it is available or not called as

Select one:

- a. Monitor
- b. Spinlock
- c. Pipe
- d. Mutex
- e. Block and wake up



Question 5

Not yet answered
Marked out of
.00

Flag question

A virtual memory address has 40 bits and physical memory has 20 bits. If the page size is 4KB find the number bits for the frame number.

Select one:

- a. 08 bits
- b. 32 bits
- c. 26 bits
- d. 12 bits
- e. 28 bits

$$\begin{array}{r} 2^{20} \\ \times 4 \times 2^{10} \\ \hline 2^{12} \\ \hline 2^{20} = 12 + F \end{array}$$

$$2^{20-1} = F$$

$$8 = F$$

Next page

Disk requests come in the disk driver (0 to 999 cylinders) for cylinders 400, 200, 100, 500, 800, and 300, in that order. A seek takes 10 ms per cylinder moved. Assuming the arm is initially at cylinder 600, and moving toward larger cylinder number for a disk with 1000 cylinders, how much seek time is needed for C-LOOK algorithm:

Select one:

- a. 12000ms
- b. 1298ms
- c. 9000ms
- d. 12980ms
- e. 17980ms



Next page

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Assume a system which uses 16-bit address space (0 to 65535) and a user Given a page size of 1KB. How many pages are there in the system?

Select one:

- a. 16 pages
- b. 64 pages
- c. 32 pages
- d. 128 pages
- e. 256 pages

$$16 \text{ bit} \\ 1KB \rightarrow 2^{10} \\ 16-1 = 6$$

$$\text{Pages} \rightarrow 2^6 = 64 //$$

Moodle

NetExamination

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Question 9

Not yet answered

Marked out of 1.00

Flag question

Consider the following statements to write the answers:

A. Wait for graph is used to detect the deadlock in multiple instances graph.

B. Breaking one of the four necessary conditions is used in deadlock prevention.

C. Banker's algorithm is used to avoid the deadlock situation in a system.

Select one:

a. Only B and C are correct.

b. Only A and C are correct.

c. All are correct.

d. Only A and B are correct.

e. Only A is correct.

NetExamination

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Consider the following set of processes with their arrival time, priority, and burst time. If the preemptive priority scheduling algorithm (smaller integer has higher priority) is used, compute the average waiting time.

Processes	Arrival Time	Priority	Burst Time
A	0	3	6
B	2	2	4
C	5	2	2
D	7	1	4

Select one:

a. 3 seconds

b. 3.75 seconds

c. 4 seconds

d. 4.45 seconds

e. None of the above

Moodle

NetExam
Sri Lanka Institute of Information Technology

Question 11
Not yet answered
Marked out of 1.00
Flag question

A computer has 4TB virtual memory and 512MB RAM. If the page size is 8KB. Find the number of bits for physical address.

Select one:

- a. 20 bits
- b. 29 bits
- c. 13 bits
- d. 42 bits
- e. 10 bits

Next page

Quiz navigation

Finish attempt ...

Time left 1:32:51

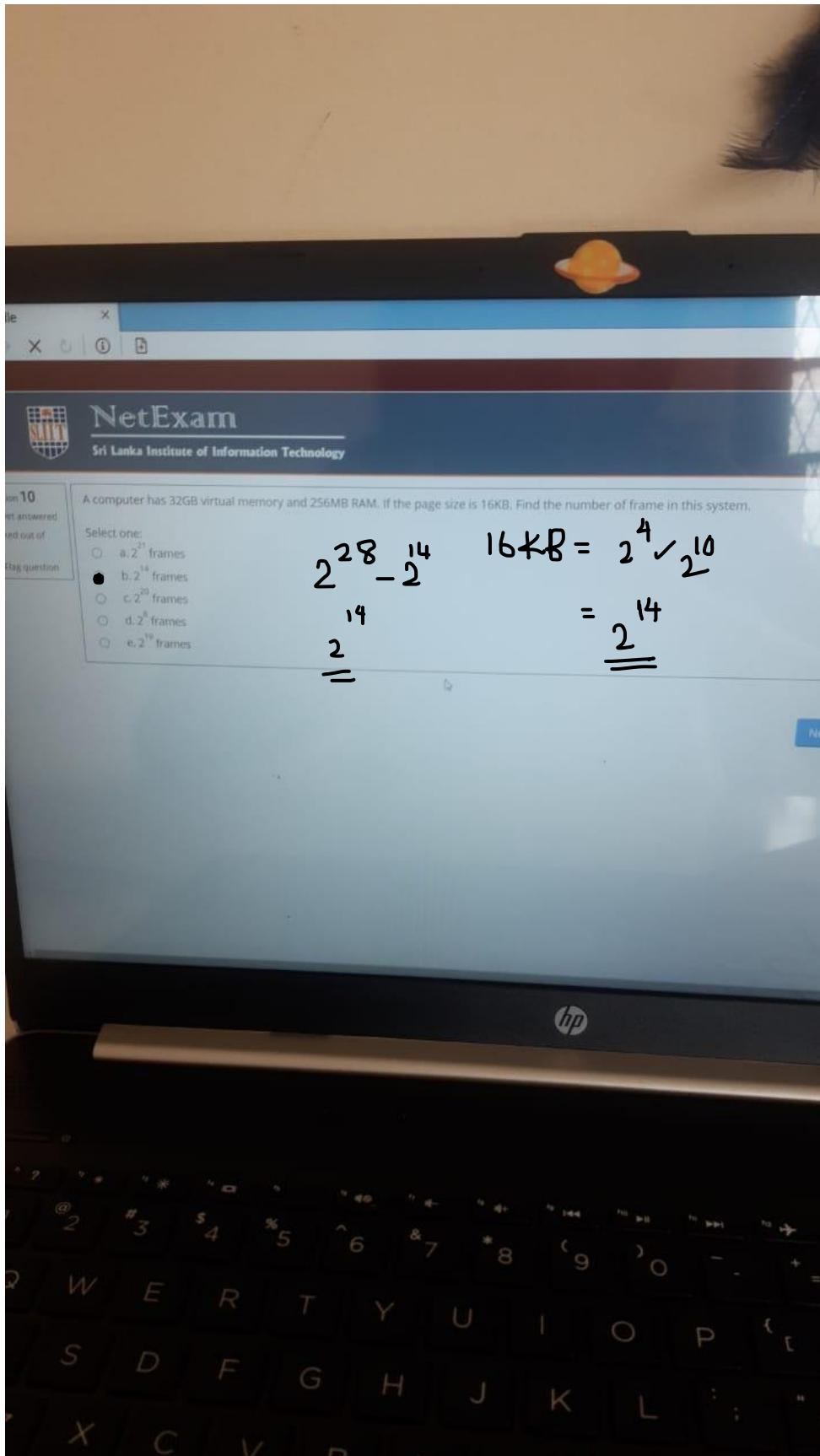
MCQ SECTION [30 Q]

1	2	3	4
8	9	10	11
15	16	17	18
22	23	24	25
29	30		

STRUCTURED QUESTIONS

31	32	33	34
----	----	----	----

The image shows a computer screen displaying a Moodle-based online exam interface. The title bar says "Moodle". The main content area is titled "NetExam" and "Sri Lanka Institute of Information Technology". A question is displayed: "A computer has 4TB virtual memory and 512MB RAM. If the page size is 8KB. Find the number of bits for physical address." Below the question, it says "Select one:" followed by five options: a. 20 bits, b. 29 bits, c. 13 bits, d. 42 bits, e. 10 bits. Option b. is selected. To the right, there is a sidebar titled "Quiz navigation" with links for "Finish attempt ...", "Time left 1:32:51", and "MCQ SECTION [30 Q]". Below this is a grid of numbered boxes from 1 to 34, likely representing the sequence of questions. The boxes are arranged in a grid: 1-4, 8-11, 15-18, 22-25, 29-30, 31-34. The boxes for questions 11, 30, and 34 are highlighted in blue, while others are white. At the bottom, there is a section titled "STRUCTURED QUESTIONS" with a grid of boxes 31-34. The entire interface is set against a dark background.



A computer RAM speed is 200ns and TLB (Associate register) speed is 20ns. If the paging system is used find the memory access time.

Select one:

- a. 200ns
- b. 400ns
- c. 10ns
- d. 210ns
- e. 100ns

[Next page](#)

Moodle

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Question 12
Not yet answered
Marked out of 1.00

Select the most correct average turnaround time for preemptive shortest job first scheduling.

Process	Arrival time	Burst time
A	0	7
B	1	3
C	5	2
D	7	2

Select one:

a. 5.75 seconds
 b. 5.25 seconds
 c. 5.5 seconds
 d. 5 seconds

hp

Q E R T Y U I O P
W F G H J K L
A S D C V B N M



A system has 3 processes sharing 4 similar resources. If each process needs a maximum of 2 units of resources then, the system is

Select one:

- a. In a deadlock
- b. Going to have a deadlock
- c. In a Starvation
- d. Never go to the deadlock
- e. In a block situation

[Next page](#)

 NetExam

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A computer has 4GB virtual memory and 512MB RAM. If the page size is 8KB. Find the number of pages in this system

Select one:

- a. 2^8 pages
- b. 2^{24} pages
- c. 2^{20} pages
- d. 2^{19} pages
- e. 2^{16} pages

Moodle

NetExam

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Question 9

Not yet answered

Marked out of 10

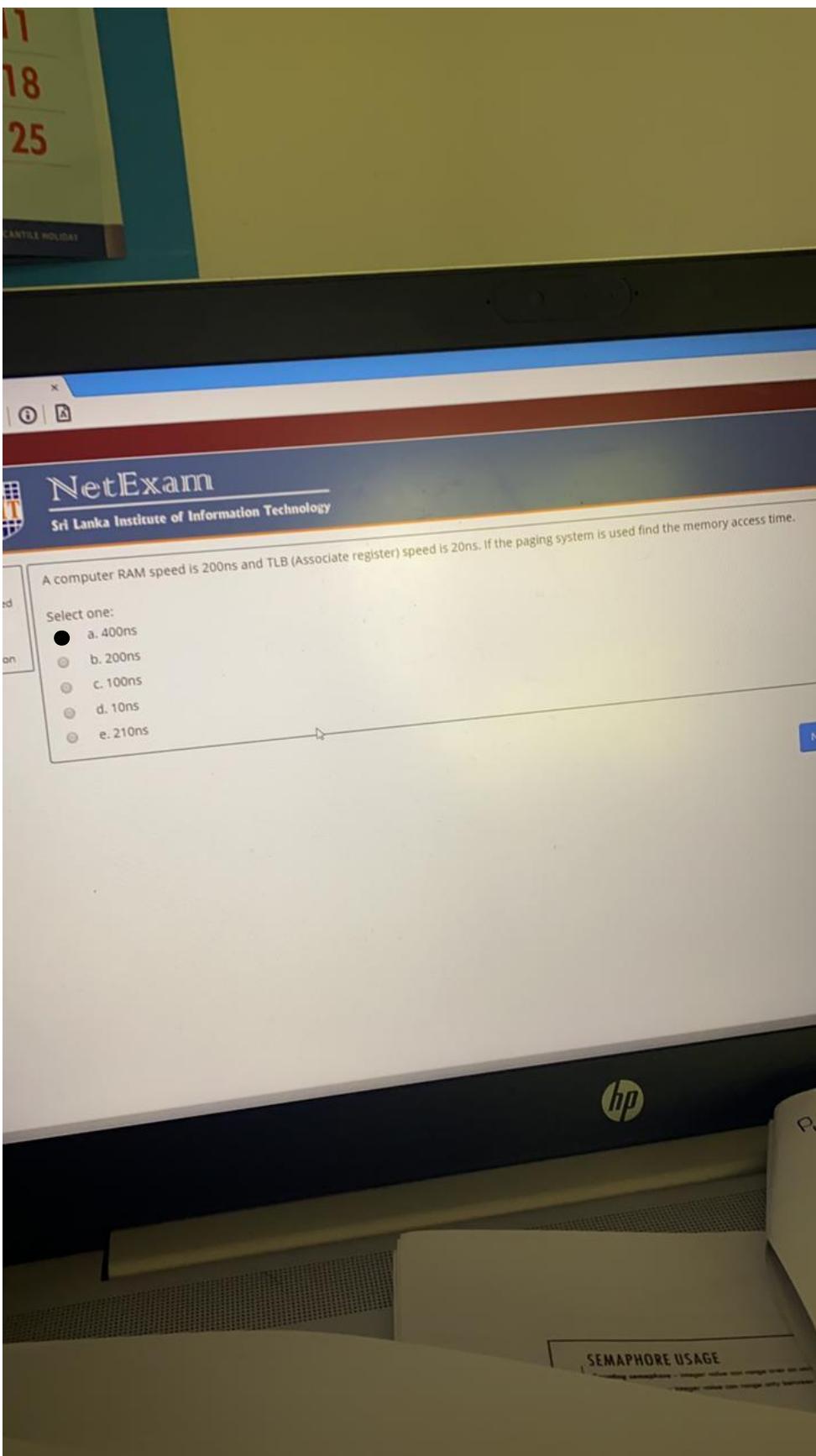
Flag question

A type of semaphore which is using a loop to check whether it is available or not called as

Select one:

- a. Pipe
- b. Block and wake up
- c. Mutex
- d. Monitor
- e. Spinlock

Next page





Which is a memory allocation strategy in contiguous allocation?

Select one:

- a. Segmentation
- b. Paging
- c. Compaction
- d. Fast Fit
- e. Worst Fit



ed
on

Consider the following C program.

Assume variables *i* and *pid*, and constant *N* have been properly defined, and/or initialized and there is no syntax error.

```
int main ()  
{  
    for(i=0; i < N; i++) {  
        pid=fork();  
    }  
}
```

2⁵

For *N*=5, How many processes are created when the program is executed?

Select one:

- a. 16
- b. 31
- c. 15
- d. 32
- e. 33



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Question 16

Not yet answered

Marked out of
1.00

Flag question

What is the correct command to remove the execute permission from the user of the first.c file.

Select one:

- a. chmod u+x first.c
- b. chown u+x first
- c. chmod u-x first.c
- d. chown u-x first.c
- e. chmod u-x fist.c

Next page

A computer has 4TB virtual memory and 512MB RAM. If the page size is 8KB. Find the number of bits for physical address.

Select one:

- a. 29 bits
- b. 10 bits
- c. 20 bits
- d. 42 bits
- e. 13 bits

$$2^9 \times 2^{20}$$
$$2^{29}$$



Ā

NetExam

A system has 3 processes sharing 4 similar resources. If each process needs a maximum of 2 units of resources then, the system is

Select one:

- a. Going to have a deadlock
- b. In a deadlock
- c. In a block situation
- d. Never go to the deadlock
- e. In a Starvation

Next pa

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Question 10
Not yet answered
Marked out of 1.00
[Flag question](#)

A virtual memory address has 40 bits and physical memory has 20 bits. If the page size is 4KB find the number bits for the frame number.

Select one:

- a. 26 bits
- b. 28 bits
- c. 08 bits
- d. 32 bits
- e. 12 bits

[Next](#)

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Disk requests come in the disk driver for cylinders 10, 22, 2, 40, 6, and 38, in that order. A seek takes 6 ms per cylinder moved. Assuming the arm is initially at cylinder 20, and moving toward larger cylinder number for a disk with 64 cylinders, how much seek time is needed for C-SCAN algorithm.

Select one:

- a. 696ms
- b. 928ms
- c. 348ms
- d. 58ms
- e. 624ms

[Next](#)

Find the storage device which uses the laser beam to store the data?

Select one:

- a. Cache
- b. CD
- c. RAM
- d. ROM
- e. Hard disk

A computer RAM speed is 200ns and TLB (Associate register) speed is 20ns. If the paging system is used find the memory access time.

Select one:

- a. 200ns
- b. 10ns
- c. 400ns
- d. 100ns
- e. 210ns

Next page

Consider the following snapshot of a system:

Process	Allocation	Maximum Needs	Available
A	4	6	1
B	2	5	
C	2	3	
D	1	5	

Answer the following questions using the banker's algorithm:

Find the safe sequence

Select one:

- a. B, A, C, D
- b. C, A, B, D
- c. C, D, B, A
- d. A, B, C, D
- e. A, C, B, D

Sri Lanka Institute of Information Technology

When the currently running processes is suspended a new process will be selected to run by the scheduler, then the currently running process must be saved in the PCB and restore the status from the PCB this process is called as

Select one:

- a. Interrupting
- b. Swapping
- c. Paging
- d. Context switching
- e. Dispatching

Next page

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A virtual memory address has 40 bits and physical memory has 20 bits. If the page size is 4KB find the number bits for the frame number.

Select one:

- a. 08 bits
- b. 32 bits
- c. 28 bits
- d. 26 bits
- e. 12 bits

Next page

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Disk requests come in the disk driver for cylinders 10, 22, 2, 40, 6, and 38, in that order. A seek takes 6 ms per cylinder moved. Assuming the arm is initially at cylinder 20, and moving toward larger cylinder number for a disk with 64 cylinders, how much seek time is needed for C-SCAN algorithm.

Select one:

- a. 624ms
- b. 696ms
- c. 58ms
- d. 348ms
- e. 928ms

Next p

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Assume variables *i* and *pid*, and constant *N* have been properly defined, and/or initialized and there is no syntax error.

```
int main ()  
{  
    for(i=0; i < N; i++) {  
        pid=fork ();  
    }  
}
```

For *N*=5, How many processes are created when the program is executed?

Select one:

- a. 15
- b. 32
- c. 31
- d. 16
- e. 33

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Disk requests come in the disk driver (0 to 999 cylinders) for cylinders 400, 200, 100, 500, 800, and 300, in that order. A seek takes 10 ms per cylinder moved. Assuming the arm is initially at cylinder 600, and moving toward larger cylinder number for a disk with 1000 cylinders, how much seek time is needed for C-LOOK algorithm?

Select one:

- a. 1298ms
- b. 12980ms
- c. 12000ms
- d. 17980ms
- e. 9000ms



Answered
of
Question

Consider the following statement in writing the answer:

- A-Monitor is used to solve some problems in programming with the semaphore.
B-Semaphore is an integer variable which has two atomic operation called as wait () and signal().
C-Counting semaphore can store both positive and negative values.

Select one:

- a. Only A and C are correct.
- b. All are correct.
- c. Only B and C are correct.
- d. Only A is correct.
- e. Only A and B are correct.



Next page



A virtual memory address has 40 bits and physical memory has 20 bits. If the page size is 4KB find the number bits for the frame number.

Select one:

- a. 32 bits
- b. 26 bits
- c. 08 bits
- d. 12 bits
- e. 28 bits



Next page

on 25

et answered
ed out of
ag question

Consider the following statements to write the answers:

- A. Wait for graph is used to detect the deadlock in multiple instances graph.
- B. Breaking one of the four necessary conditions is used in deadlock prevention.
- C. Banker's algorithm is used to avoid the deadlock situation in a system.

Select one:

- a. Only B and C are correct.
- b. Only A and B are correct.
- c. Only A and C are correct.
- d. All are correct.
- e. Only A is correct.

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A computer has 4TB virtual memory and 512MB RAM. If the page size is 8KB. Find the number of bits for physical address.

Select one:

- a. 42 bits
- b. 13 bits
- c. 29 bits
- d. 10 bits
- e. 20 bits

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A computer has 512MB RAM and 4GB virtual memory. A page size is 8KB. How many bits are there for the page number?

30
$$4 \times 2^30$$

$$32 - 1 \wedge$$

Select one:

- a. 31 bits
- b. 18 bits
- c. 19 bits
- d. 16 bits
- e. 13 bits

[Next page](#)

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If the semaphore is implemented using the block and wake up technique, if there is a one process waiting for the semaphore in the waiting queue. What is the value of the semaphore at this time?

Select one:

- a. 2
- b. 1
- c. -1
- d. 0
- e. -2 A

[Next page](#)



A computer has 32GB virtual memory and 256MB RAM. If the page size is 16KB. Find the number of frame in this system.

Select one:

- a. 2^{19} frames
- b. 2^{14} frames
- c. 2^8 frames
- d. 2^{21} frames
- e. 2^{20} frames

$$\frac{8}{2} = \frac{2^8 - 14}{2}$$

$$\frac{14}{2} \cancel{=}$$

What is the correct command to remove the execute permission from the user of the first.c file.

Select one:

- a. chmod u-x first.c
- b. chown u-x first.c
- c. chmod u+x first.c
- d. chmod u-x fist.c
- e. chown u+x first

Quiz navigation

Finish session

Time left: 00:00:00

ANSWER

next page

Disk requests come in the disk driver for cylinders 10, 22, 2, 40, 6, and 38, in that order. A seek takes 6 ms per cylinder moved. Assuming the arm is initially at cylinder 20, and moving toward larger cylinder number for a disk with 64 cylinders, how much seek time is needed for C-SCAN algorithm.

Select one:

- a. 58ms
- b. 928ms
- c. 696ms
- d. 348ms
- e. 624ms

[Next page](#)

A computer has 4TB virtual memory and 512MB RAM. If the page size is 8KB. Find the number of bits for physical address.

Select one:

- a. 13 bits
- b. 10 bits
- c. 29 bits
- d. 42 bits
- e. 20 bits

[Next page](#)

Moodle

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Question 19
Not yet answered
Marked out of 1.00
Flag question

A computer RAM speed is 200ns and TLB (Associate register) speed is 20ns. If the paging system is used find the memory access time.

Select one:

- a. 200ns
- b. 100ns
- c. 400ns
- d. 210ns
- e. 10ns

Next page

hp

W E R T Y U I O P

S D F G H J K L

X C V B N M

Consider the following statements related to the CPU scheduling:

- a) Medium term scheduler is available in Time shared system.
- b) Short term scheduler controls the degree of multiprogramming.
- c) Long term scheduler is faster than the short term scheduler.

Select one:

- a. Only a) is correct.
- b. Only b) is correct.
- c. Only a) and b) are correct.
- d. All are correct
- e. None of the above



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Question 14

Not yet answered

Marked out of
1.00

Flag question

Consider the following statement in writing the answer:

- A-Monitor is used to solve some problems in programming with the semaphore.
B-Semaphore is an integer variable which has two atomic operation called as wait () and signal ().
C-Counting semaphore can store both positive and negative values.

Select one:

- a. Only A and C are correct.
- b. Only B and C are correct.
- c. Only A and B are correct.
- d. All are correct.
- e. Only A is correct.

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A computer RAM speed is 200ns and TLB (Associate register) speed is 20ns. If the paging system is used find the memory access time

Select one:

- a. 100ns
- b. 400ns
- c. 200ns
- d. 10ns
- e. 210ns

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In a computer system, assume that ten processes arrive every minute, and there are normally 8 processes in the queue. Compute the average waiting time per process by Little's formula.

Select one:

- a. 8 seconds
- b. 0.8 seconds
- c. 4.8 seconds
- d. 48 seconds
- e. None of the above

$N = \lambda \times W$

$R = \frac{10}{60} \times W$

$\frac{8 \times \cancel{60}}{10} = W$

Next

Consider the following snapshot of a system:

Process	Allocation	Maximum Needs	Available
A	4	6	1
B	2	5	
C	2	3	
D	1	5	

Answer the following questions using the banker's algorithm:

Find the safe sequence

Select one:

- a. A, B, C, D
- b. A, C, B, D
- c. C, A, B, D
- d. B, A, C, D
- e. C, D, B, A

Consider the following snapshot of a system:

Process	Allocation	Maximum Needs	Available
A	4	6	1
B	2	5	
C	2	3	
D	1	5	

Answer the following questions using the banker's algorithm:

Find the safe sequence

Select one:

- a. A, B, C, D
- b. A, C, B, D
- c. C, A, B, D
- d. B, A, C, D
- e. C, D, B, A

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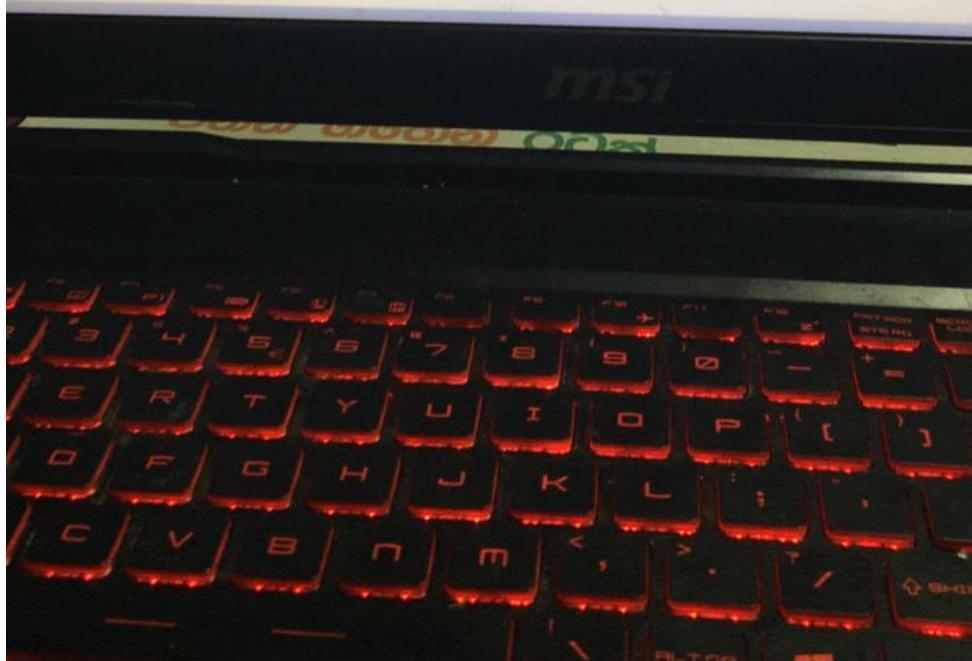
Consider the following set of processes with their arrival time, priority, and burst time. If the preemptive priority scheduling algorithm (smaller integer has higher priority) is used, compute the average waiting time.

Processes	Arrival Time	Priority	Burst Time
A	0	3	6
B	2	2	4
C	5	2	2
D	7	1	4

Select one:

- a. 3 seconds
- b. 3.75 seconds
- c. 4.25 seconds
- d. 4.45 seconds
- e. None of the above

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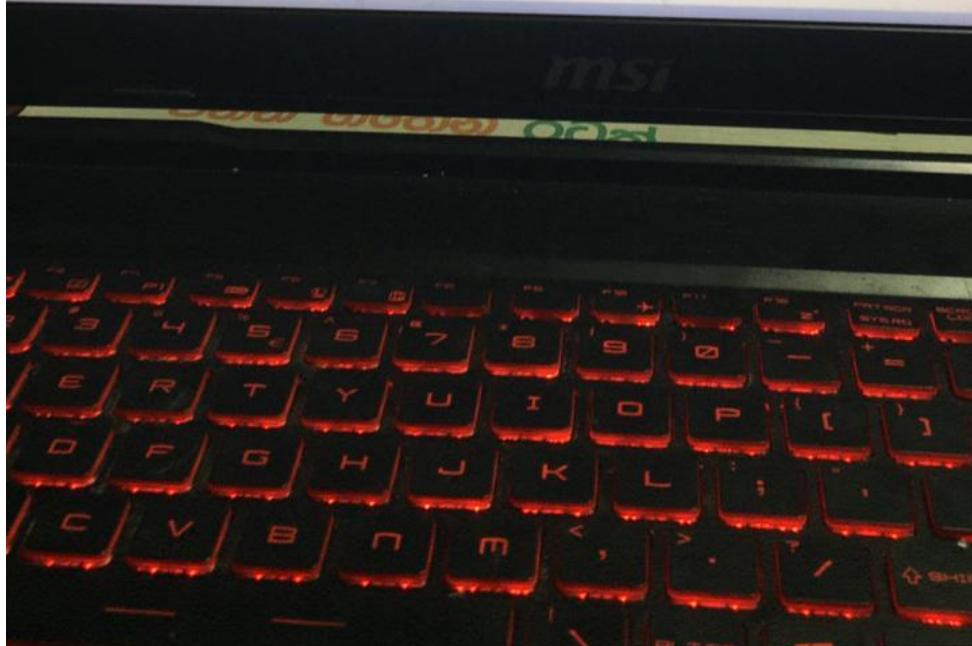
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Processes	Arrival Time	Priority	Burst Time
A	0	3	6
B	2	2	4
C	5	2	2
D	7	1	4

Select one:

a. 3 seconds
 b. 3.75 seconds
 c. 4.25 seconds
 d. 4.45 seconds
 e. None of the above

[Next page](#)



A virtual memory address has 40 bits and physical memory has 20 bits. If the page size is 4KB find the number bits for the frame number.

Select one:

- a. 28 bits
- b. 12 bits
- c. 26 bits
- d. 32 bits
- e. 08 bits

Next pa

A virtual memory address has 40 bits and physical memory has 20 bits. If the page size is 4KB find the number bits for the frame number.

Select one:

- a. 28 bits
- b. 12 bits
- c. 26 bits
- d. 32 bits
- e. 08 bits

$$2^{20-12}$$

$$\begin{array}{r} 4 \times 2^{10} \\ 2 \times 2^6 \end{array}$$

Next pa

Moodle

Flag question

Consider a system with 4 resources of the same type, and 3 processes with the following resource need and allocation:

Process	Allocation	Maximum Allocation	Need
A	3	4	
B	1	3	
C	1	3	
D	2	5	

a) How many resources are available in the system now?

b) Is the system in safe state or unsafe state? Explain your answer.

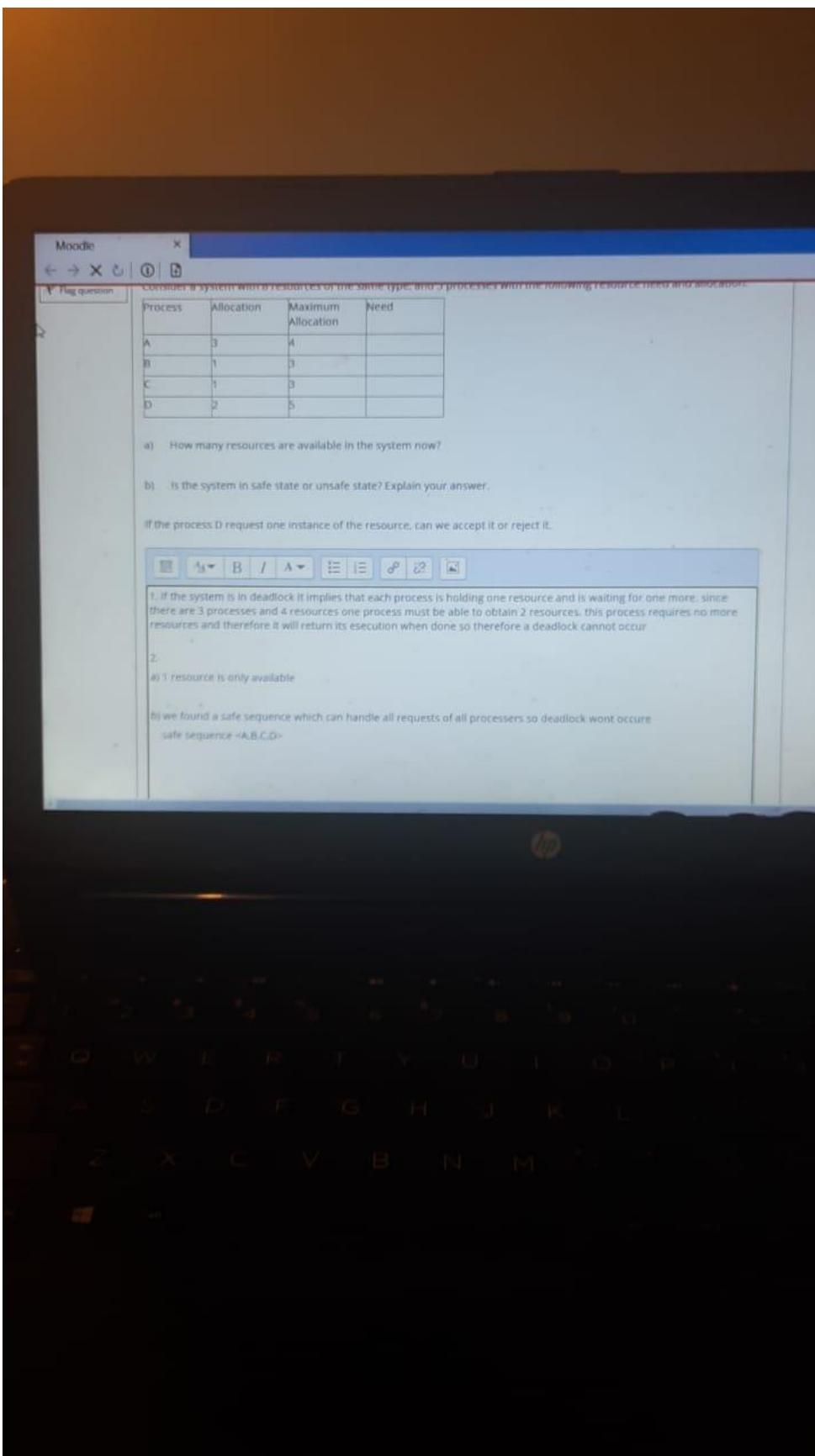
If the process D request one instance of the resource, can we accept it or reject it.

1. If the system is in deadlock it implies that each process is holding one resource and is waiting for one more. Since there are 3 processes and 4 resources one process must be able to obtain 2 resources. This process requires no more resources and therefore it will return its execution when done so therefore a deadlock cannot occur.

2.

a) 1 resource is only available

b) We found a safe sequence which can handle all requests of all processes so deadlock won't occur.
safe sequence <A,B,C,D>



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Question 24
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Flag question

A virtual memory address has 40 bits and physical memory has 20 bits. If the page size is 4KB find the number bits for the frame number.

Select one:

- a. 26 bits
- b. 08 bits
- c. 32 bits
- d. 12 bits
- e. 28 bits

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In a computer system, assume that ten processes arrive every minute, and there are normally 8 processes in the queue. Compute the average waiting time per process by Little's formula.

Select one:

- a. 8 seconds
- b. 0.8 seconds
- c. 4.8 seconds
- d. 48 seconds
- e. None of the above

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Select one:

- a. 8 seconds
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- d. 48 seconds
- e. None of the above

[Next page](#)



When several processes access the shared data concurrently and the code segment which updates the shared date is called as?

Select one:

- a. Progress condition
- b. Exit Section
- c. Race condition
- d. Critical Section
- e. Mutual Exclusion

[Next page](#)

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When several processes access the shared data concurrently and the code segment which updates the shared date is called as?

Select one:

- a. Progress condition
- b. Exit Section
- c. Race condition
- d. Critical Section
- e. Mutual Exclusion

[Next page](#)

Question 32

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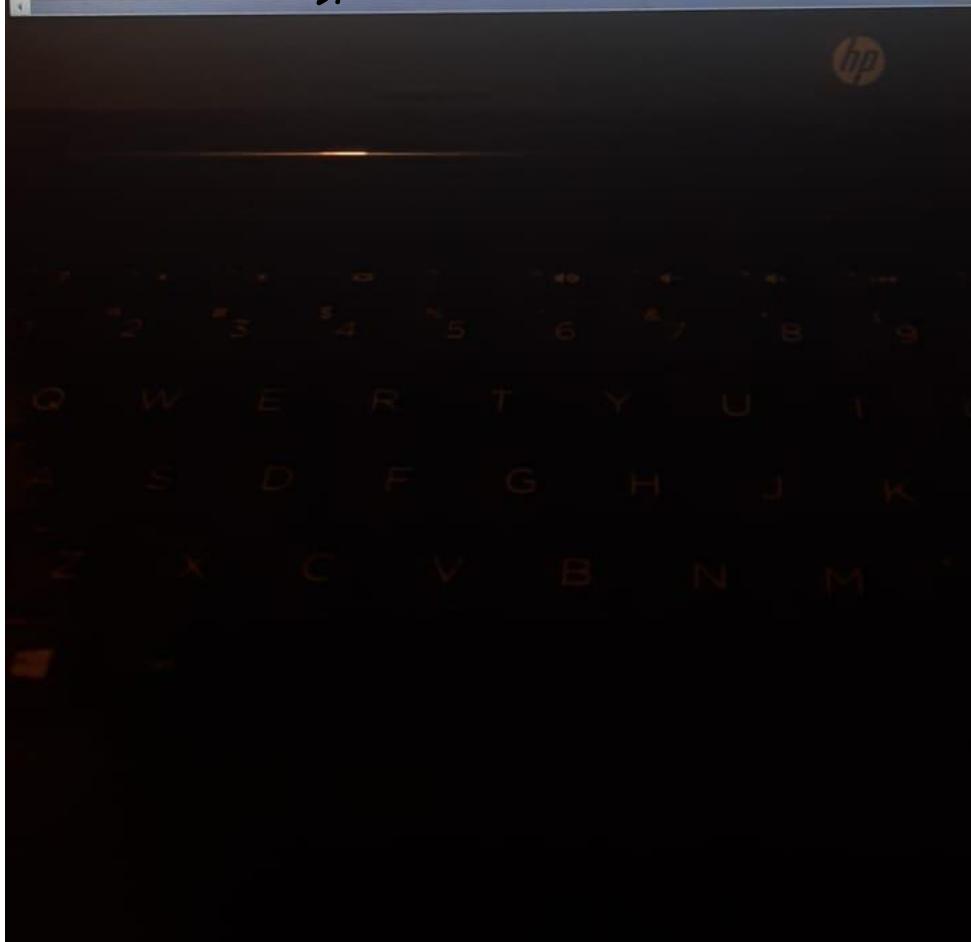
▼ Flag question

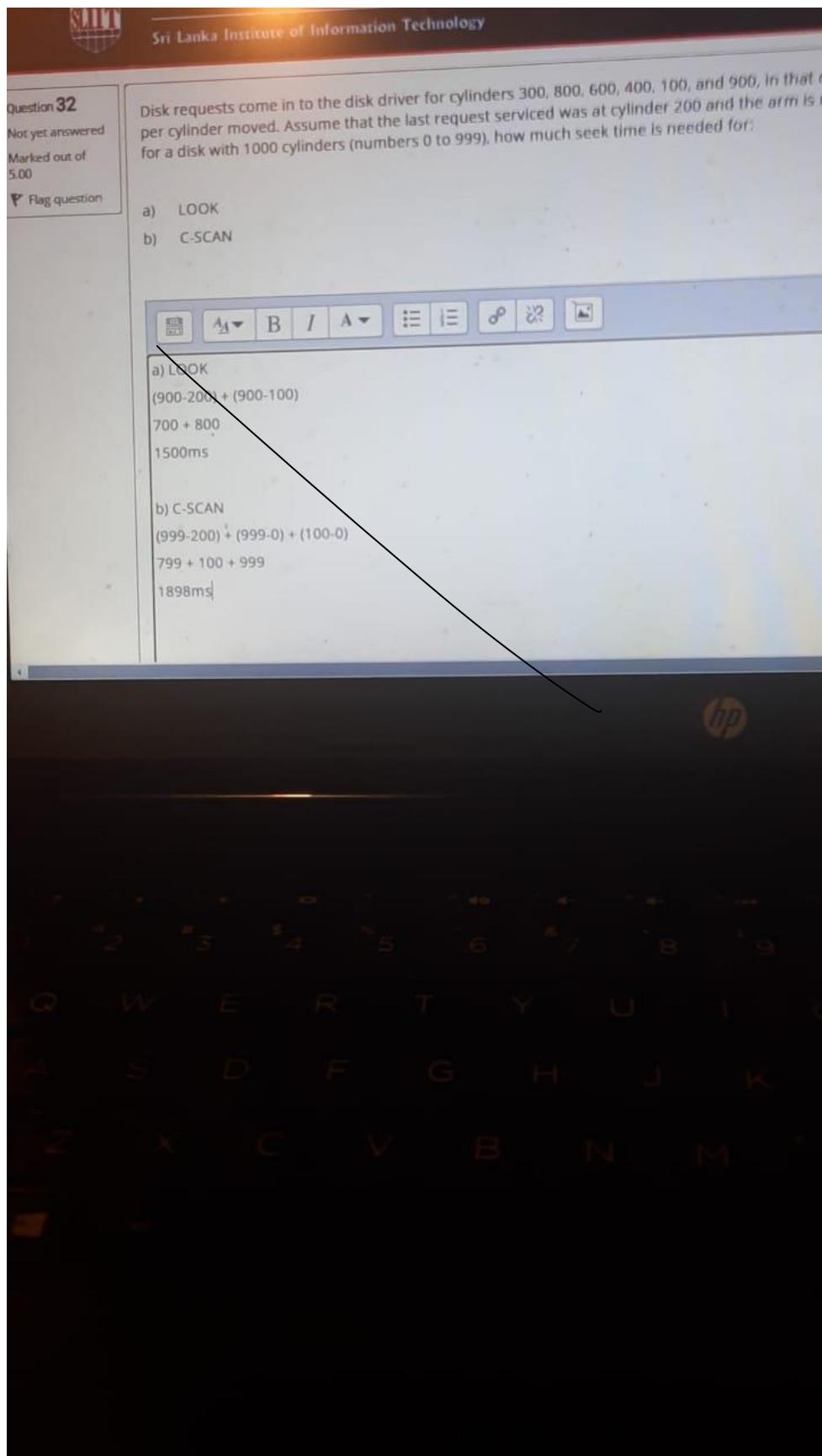
Disk requests come in to the disk driver for cylinders 300, 800, 600, 400, 100, and 900. In that order, the head moves from cylinder 100 to 900. If it takes 10 ms per cylinder moved. Assume that the last request serviced was at cylinder 200 and the arm is at cylinder 100. If the seek time is constant for all cylinders, for a disk with 1000 cylinders (numbers 0 to 999), how much seek time is needed for?

- a) LOOK
 - b) C-SCAN

a) LOOK
 $(900-200) + (900-100)$
 $700 + 800$
 $1500\text{ms} \times 10 = 15000$

$$\begin{aligned} b) \text{ C-SCAN} \\ (999-200) + (999-0) + (100-0) \\ 799 + 100 + 999 \\ 1898 \text{ ms} \quad \times 10 \\ = 18980 \end{aligned}$$





Consider a system with 3 resources of the same type, and 3 processes with the following resource need and allocation.

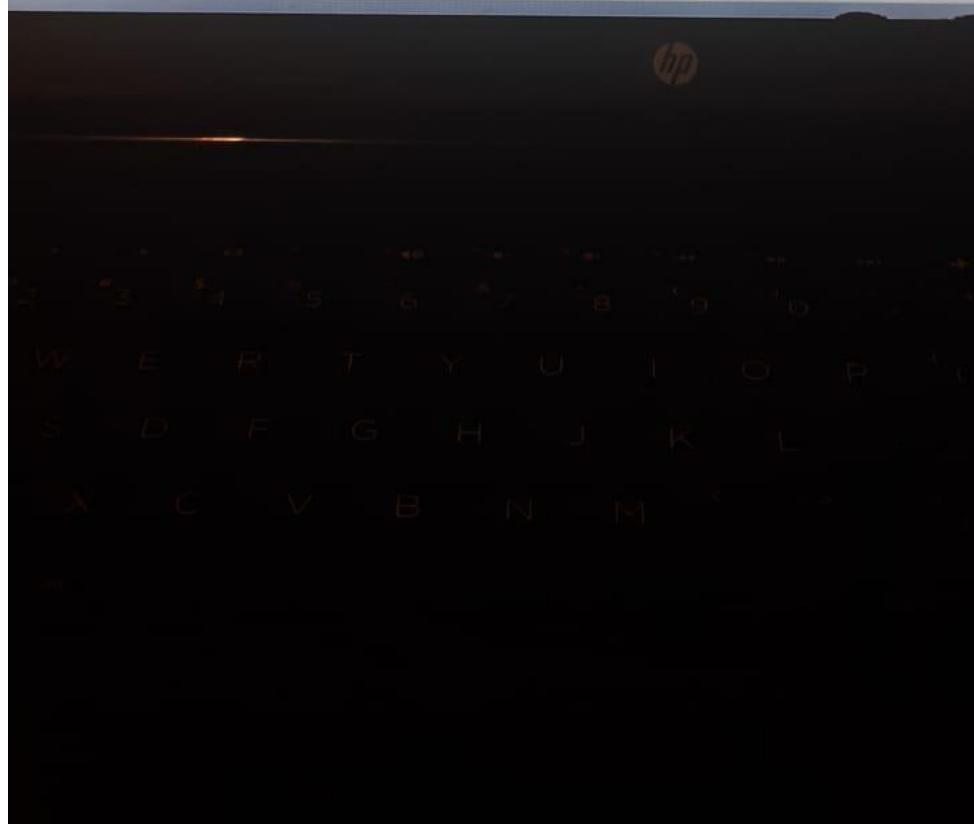
Process	Allocation	Maximum Allocation	Need
A	3	4	
B	1	3	
C	1	3	
D	2	5	

- a) How many resources are available in the system now?
- b) Is the system in safe state or unsafe state? Explain your answer.

If the process D request one instance of the resource.. can we accept it or reject it.

1. if the system is in deadlock it implies that each process is holding one resource and is waiting for one more. since there are 3 processes and 4 resources one process must be able to obtain 2 resources. this process requires no more resources and therefore it will return its execution when done so therefore a deadlock cannot occur
- 2.
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 - b) we found a safe sequence which can handle all requests of all processes so deadlock wont occur
safe sequence <A,B,C,D>

We will have to reject the request because when we accept 1 more instance there will be a deadlock which occurs |



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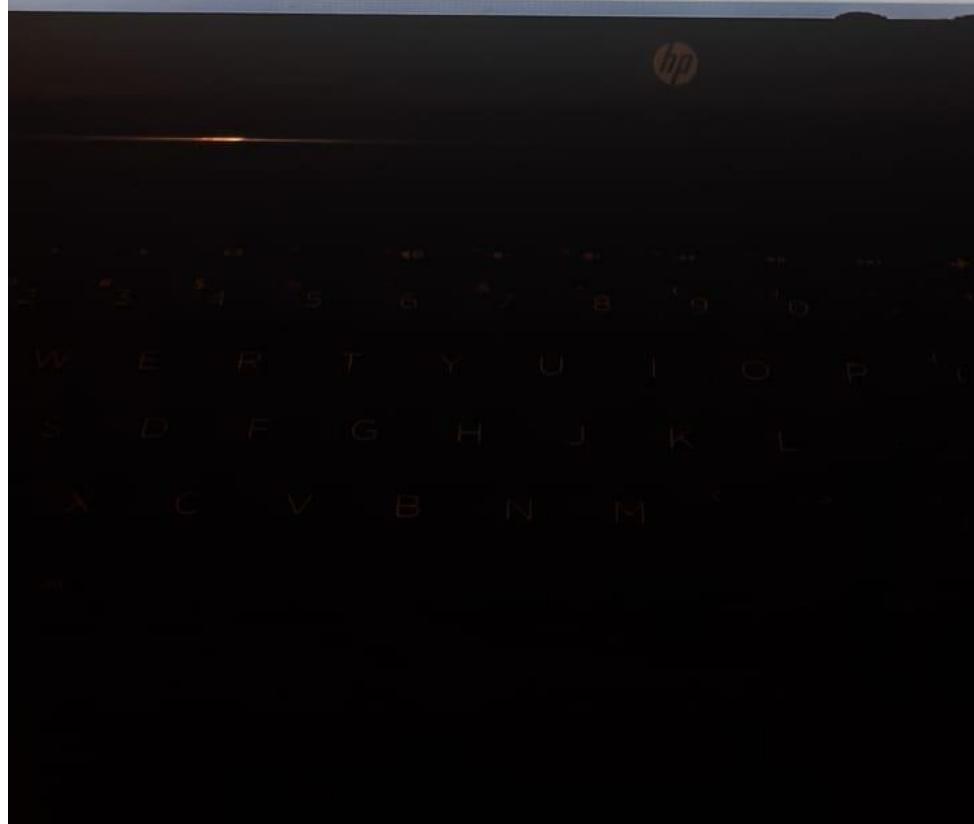
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A computer has 4TB virtual memory and 512MB RAM. If the page size is 8KB. Find the number of bits for physical address.

Select one:

- a. 13 bits
- b. 29 bits
- c. 20 bits
- d. 42 bits
- e. 10 bits

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Select one:

- a. 13 bits
- b. 29 bits
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Consider the following C program.

Assume variables *i* and *pid*, and constant *N* have been properly defined, and/or initialized and there is no syntax error.

```
int main ()  
{  
    for(i =0; i < N; i++) {  
        pid=fork ();  
    }  
}
```

For *N*=5, How many processes are created when the program is executed?

Select one:

- a. 31
- b. 32
- c. 33
- d. 15
- e. 16

Consider the following C program.

Assume variables *i* and *pid*, and constant *N* have been properly defined, and/or initialized and there is no syntax error.

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Select one:

- a. 31
- b. 32
- c. 33
- d. 15
- e. 16

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Disk requests come in the disk driver (0 to 999 cylinders) for cylinders 400, 200, 100, 500, 800, and 300, in that order. A seek takes 10 ms per cylinder moved. Assuming the arm is initially at cylinder 600, and moving toward larger cylinder number for a disk with 1000 cylinders, how much seek time is needed for C-LOOK algorithm:

Select one:

- a. 9000ms
- b. 17980ms
- c. 1298ms
- d. 12000ms
- e. 12980ms

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Disk requests come in the disk driver (0 to 999 cylinders) for cylinders 400, 200, 100, 500, 800, and 300, in that order. A seek takes 10 ms per cylinder moved. Assuming the arm is initially at cylinder 600, and moving toward larger cylinder number for a disk with 1000 cylinders, how much seek time is needed for C-LOOK algorithm:

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[Next page](#)

Moodle

Marked out of 5.00

Flag question

a) How many bits are there in the physical address?

b) How many bits are there in the virtual address?

c) How many pages are there in the system?

Calculate the effective memory access time for the system

a) 256mb
 $2^8 * 2^{20} = 2^{28} = 28$ bytes
28 bits

b) 4GB
 $2^2 * 2^{30} = 2^{32}$ bytes
32 bits

c) $V/M = p + d$
 $32 = p + 14$
 $p = 18$
 2^{18}

(\checkmark) 32 bits

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Moodle

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28 bits ✓

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32 bits ✓

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 $V/M = p + d$
 $32 = p + 14$
 $p = 18$
 2^{18} ✓

(d) on C 7/20

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Question 34
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Flag question

A system is using a counting semaphore (S) to make the access controlling for a shared resource (R). The semaphore value is initialized as $S=5$. The number of processes running in the system is 20.

- Write a solution for the above access controlling problem using the two atomic operations in semaphore for each process.
- What is the value of S , when the first process access the shared resource R ?
- What would be the value of S when the process is blocked first time to access the resource R ?
- If the value of $S=2$, how many processes are blocked in access to shared resource (R)?

a) wait(S)
// access the resource
signal(S)

b). 4 ✓
c). 4
d). 0

4

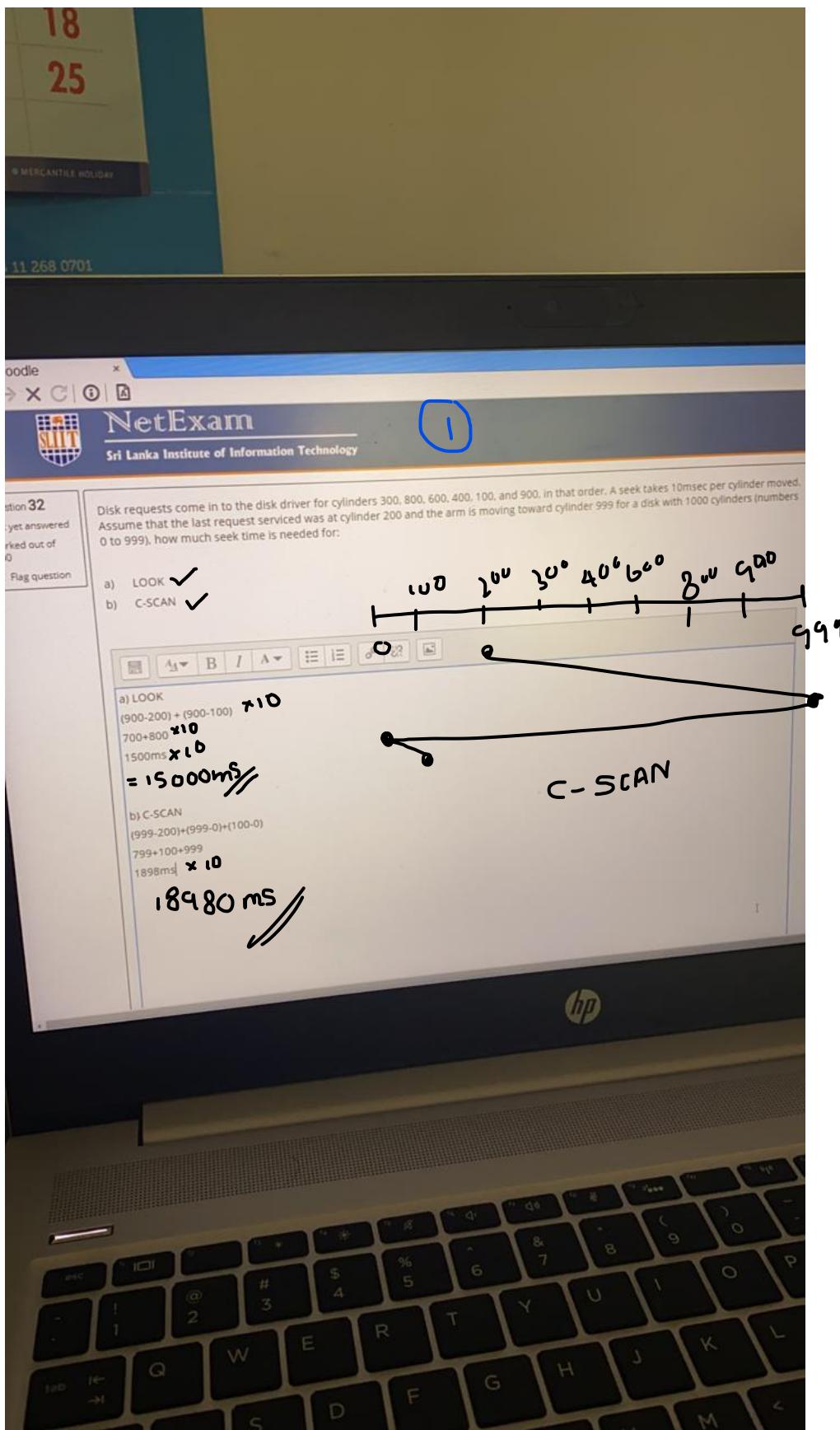
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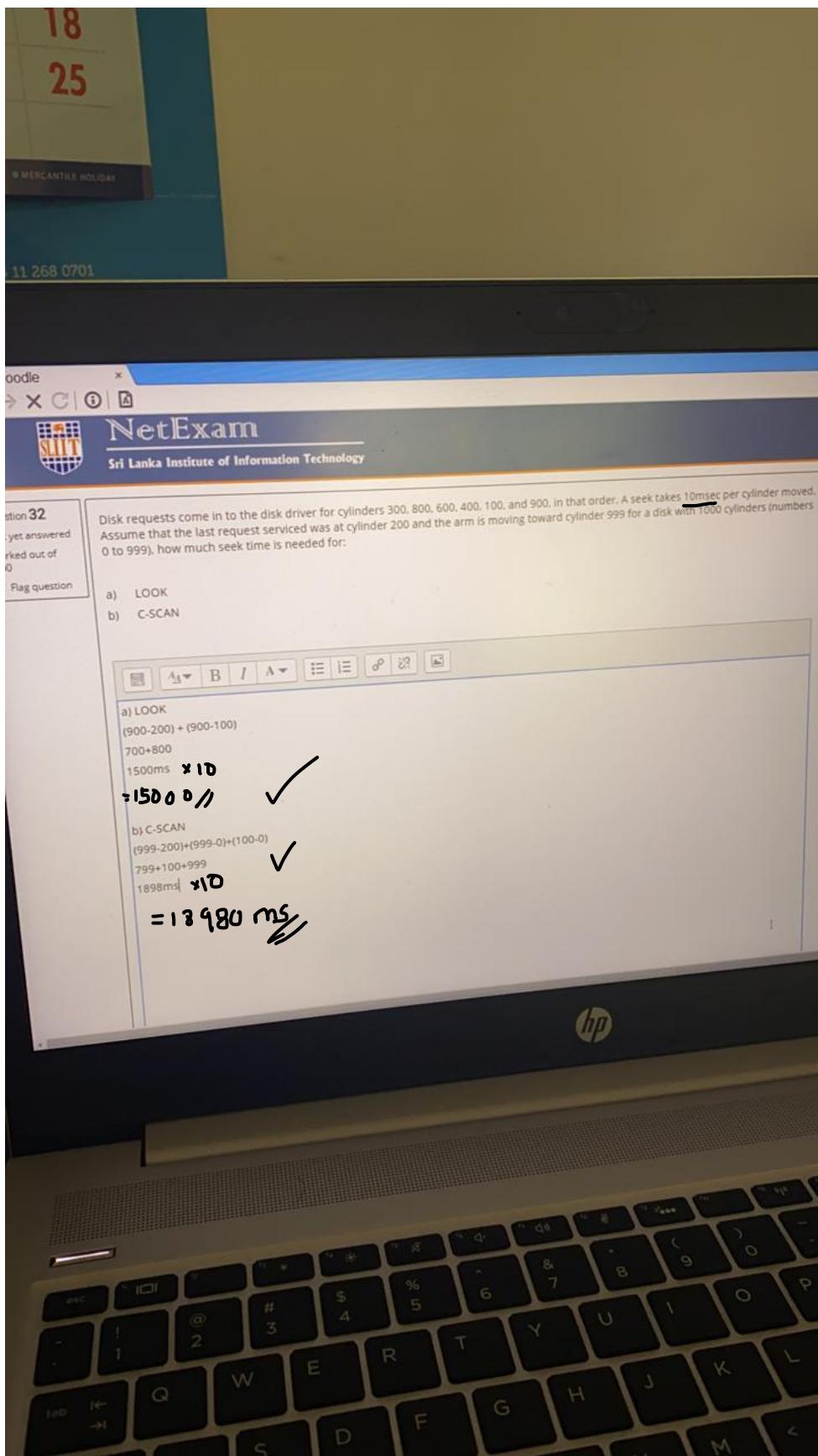
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a) wait(S)
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signal(S)

b) $S = 4$

c) $S = 0$

d) 3

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Question 32
Not yet answered
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Disk requests come in to the disk driver for cylinders 300, 800, 600, 400, 100, and 900, in that order. A seek takes 10msec per cylinder moved. Assume that the last request serviced was at cylinder 200 and the arm is moving toward cylinder 999 for a disk with 1000 cylinders (numbers 0 to 999), how much seek time is needed for:

a) LOOK
b) C-SCAN

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Question 31
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A system has 3 processes and 4 different resources, is there any possibility to have a deadlock situation in this system and explain your answer.

Consider a system with 8 resources of the same type, and 3 processes with the following resource need and allocation.

Process	Allocation	Maximum Allocation	Need
A	3	4	1
B	1	3	2
C	1	3	2
D	2	5	3

available (2)

a) How many resources are available in the system now? (8 - 7)

b) Is the system in safe state or unsafe state? Explain your answer.

If the process D request one instance of the resource, can we accept it or reject it.

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Finish Time left MCQ S 1 9 16 17 18 25 26 STRUCTURE 31 32

NetExam
Sri Lanka Institute of Information Technology

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Finish Time left MCQ S 1 9 16 17 18 25 26 STRUCTURE 31 32



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A computer system has 256MB RAM (Random Access Memory) and 4GB virtual memory. The page size is 16KB. The memory access time is 200 ns and TLB (Translation Look aside Buffer) access time is 20ns. The system hit ratio is 50%.

- a) How many bits are there in the physical address?
- b) How many bits are there in the virtual address?
- c) How many pages are there in the system?

Calculate the effective memory access time for the system

A B A

a) $2^{28} = 28 \text{ bits}$

b) 32 bits

c) $32 - 14 = 18$

Pages 2^{18}

$EAT = (TLB + ma) d + (TLB + 2ma)(1 - \alpha)$
 $= (20 + 200) \frac{50}{100} + (20 + 2 \times 200) \left(1 - \frac{50}{100}\right)$
 $= 220 \times \frac{1}{2} + 420 \times \frac{1}{2}$
 $= 110 + 210$

$= \underline{\underline{320}}$



31
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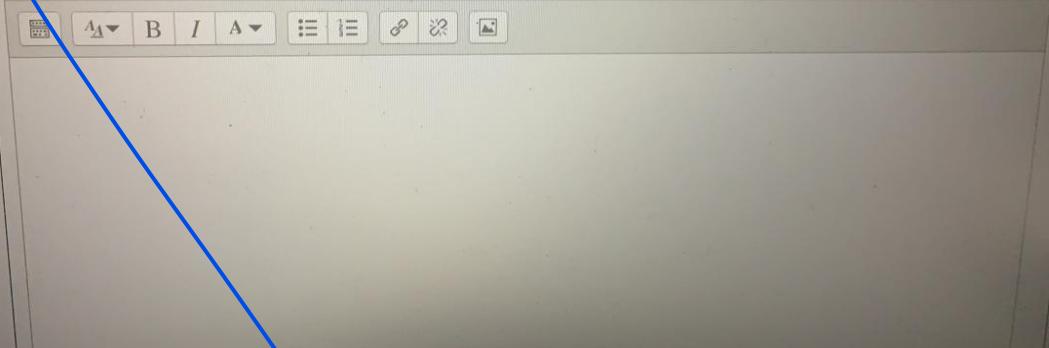
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Calculate the effective memory access time for the system



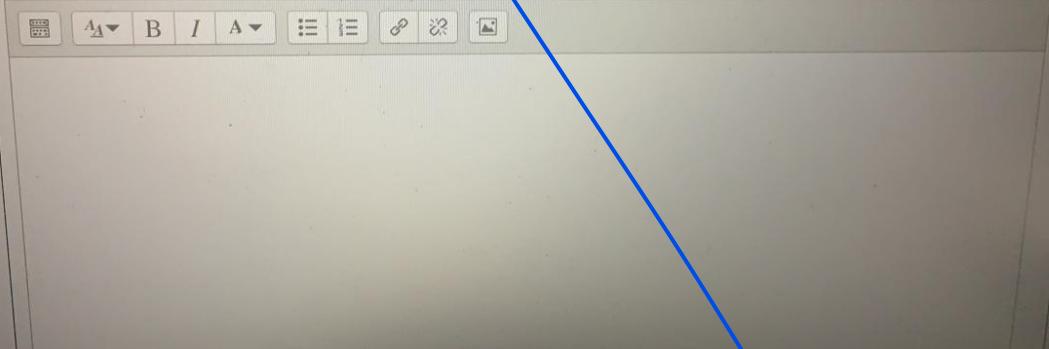
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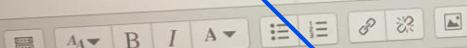
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