

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

In the Name of Allāh, the Most Gracious, the Most Merciful

### Paper Pattern

MCQS 40 each 1 mark  
Short 4 each 2 marks  
Short 4 each 3 marks  
long 4 each 5 marks

Question No : 1 of 52

Marks: 1 (Budgeted Time 1 Min)

A computer system that allows only one user to use the computer at a given time is known as a -----

Answer ( Please select your correct option )

[WWW.VirtualAcademyLive.com](http://WWW.VirtualAcademyLive.com)

☐

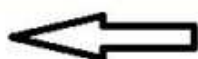
Batch systems

☐

Multi programmed systems

☒

single-user system



☐

Time-sharing systems

Made by: Waqar Siddhu

Question No : 2 of 52

Marks: 1 (Budgeted Time 1 Min)

You can terminate a foreground process by pressing -----

Answer ( Please select your correct option )

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☐

<Ctrl-A>

☒

<Ctrl-C>



☐

<Ctrl-Z>

☐

None of the given options

Made by: Waqar Siddhu



Question No : 3 of 52

Marks: 1 (Budgeted Time 1 Min)

The priorities of processes in the -----Group remain fixed whereas the priorities of processes in the -----Group are recalculated every second.

Answer ( Please select your correct option )

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☐ Kernel, Kernel

☐ User, Kernel

☐ User, User

☒ Kernel, User

Made by: Waqar Siddhu

Question No : 4 of 52

Marks: 1 (Budgeted Time 1 Min)

-----processes may want only to read the content of the shared object.

Answer ( Please select your correct option )

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☐ Mutex

☐ Writers

☒ Readers

☐ None of the given options

Made by: Waqar Siddhu

Question No : 5 of 52

Marks: 1 (Budgeted Time 1 Min)

An arrow from resource to process shows an instance of the resource has been ----- to the process.

Answer ( Please select your correct option )

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☒ Allocated

☐ Waiting

☐ Requesting

☐ None of the given options

Made by: Waqar Siddhu



Question No : 6 of 52

Marks: 1 (Budgeted Time 1 Min)

What do we name to an address that is generated by the CPU?

Answer ( Please select your correct option )

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☒ Logical address



☐ Physical address

☐ Binary addresses

☐ None of the given options

Made by: Waqar Siddhu

Question No : 7 of 52

Marks: 1 (Budgeted Time 1 Min)

The set of all physical addresses corresponding to the logical addresses is a ----- of the process

Answer ( Please select your correct option )

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☐ Logical address space

☒ Physical address space



☐ Process address space

☐ None of the given options

Made by: Waqar Siddhu

Question No : 8 of 52

Marks: 1 (Budgeted Time 1 Min)

The run-time mapping from virtual to physical addresses is done by a piece of hardware in the CPU, called the -----

Answer ( Please select your correct option )

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☐ Registers

☐ None of the given options

☐ CPU Scheduler

☒ Memory management unit (MMU)



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Question No : 9 of 52

Marks: 1 (Budgeted Time 1 Min)

A page table needed for keeping track of pages of the page table is called -----

Answer ( Please select your correct option )

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☐ 2-level paging

☐ Page directory

☐ Page size

☐ Page table size

Made by: Waqar Siddhu

Question No : 10 of 52

Marks: 1 (Budgeted Time 1 Min)

Each page is a power of ----- bytes long in paging scheme.

Answer ( Please select your correct option )

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☒ 2

☐ 3

☐ 4

☐ 5

Made by: Waqar Siddhu

Question No : 11 of 52

Marks: 1 (Budgeted Time 1 Min)

\_\_\_\_\_ is based on the locality of reference concept— the least frequently used page is not in the current locality

Answer ( Please select your correct option )

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☐ Least Frequently Used algorithm

☐ Page Buffering Algorithm

☐ None of the given options

☐ Most Frequently Used algorithm

Made by: Waqar Siddhu



Question No : 12 of 52

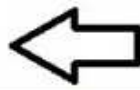
Marks: 1 (Budgeted Time 1 Min)

In \_\_\_\_\_ allocation scheme free frames are equally divided among processes

Answer ( Please select your correct option )

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- ☐ Fixed Allocation
- ☐ Propotional Allocation
- ☐ Priority Allocation
- ☐ None of the given options



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Question No : 13 of 52

Marks: 1 (Budgeted Time 1 Min)

\_\_\_\_\_ is created by the system when a symbolic link is created to an existing file, allowing you to rename the existing file and share it without duplicating its contents

Answer ( Please select your correct option )

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- ☐ Directory
- ☐ Character-special file
- ☐ Ordinary File
- ☐ Link File



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Question No : 14 of 52

Marks: 1 (Budgeted Time 1 Min)

The \_\_\_\_\_ method requires each file to occupy a set of contiguous blocks on the disk.

Answer ( Please select your correct option )

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- ☐ Contiguous Allocation
- ☐ Linked Allocation
- ☐ Indexed Allocation
- ☐ None of the given options



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Question No : 15 of 52

Marks: 1 (Budgeted Time 1 Min)

In the \_\_\_\_\_ algorithm the disk arm starts at one end of the disk, and moves toward the other end, servicing requests as it reaches each cylinder, until it gets to the other end of the disk

**Scan**

In the Scan algorithm the disk arm starts at one end of the disk, and moves toward the other end, servicing requests as it reaches each cylinder, until it gets to the other end of the disk.

Answer ( Please select your correct option )

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Scan



SSIF

Look

C-Look

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Question No : 16 of 52

Marks: 1 (Budgeted Time 1 Min)

In Linux directory structure, there is \_\_\_\_\_ root directory.

Answer ( Please select your correct option )

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2

3

4

1



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Question No : 17 of 52

Marks: 1 (Budgeted Time 1 Min)

The integer value of \_\_\_\_\_ semaphores can not be greater than 1.

Answer ( Please select your correct option )

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Bounded buffer

Counting

Binary

Mutex



Made by: Waqar Siddhu



Question No : 18 of 52

Marks: 1 (Budgeted Time 1 Min)

The main memory is usually divided into partitions, one for \_\_\_\_\_ and other for \_\_\_\_\_.

Answer ( Please select your correct option )

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☒ Operating System, User processes

☐

☐ Operating system, CPU

☐

☐ Processes, Virtual Memory

☐

☐ Base Register, Limit Register

☐

Made by: Waqar Siddhu

Question No : 19 of 52

Marks: 1 (Budgeted Time 1 Min)

Assume a logical address space of 16 pages of 1024 words, each mapped into a physical memory of 32 frames. Each word consists of 2 bytes. What will be the total number of bits required for p (page number)?

Answer ( Please select your correct option )

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☒ 4 bits

☐

☐ 8 bits

☐

☐ 16 bits

☐

☐ 32 bits

☐

Made by: Waqar Siddhu

Question No : 20 of 52

Marks: 1 (Budgeted Time 1 Min)

Assume a logical address space of 16 pages of 1024 words, each mapped into a physical memory of 32 frames. Each word consists of 2 bytes. What will be the total number of bits required for f (frames)?

Answer ( Please select your correct option )

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☒ 5

☐

☐ 6

☐

☐ 7

☐

☐ 8

☐

Made by: Waqar Siddhu



Question No : 21 of 52

Marks: 1 (Budgeted Time 1 Min)

In the Scan algorithm the disk \_\_\_\_\_ starts at one end of the disk, and moves toward the other end, servicing requests as it reaches each cylinder, until it gets to the other end of the disk.

Answer ( Please select your correct option )

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☒ arm

☐ cylinder

☐ head

☐ non of these

Made by: Waqar Siddhu

Question No : 22 of 52

Marks: 1 (Budgeted Time 1 Min)

Segmentation is a memory management scheme that supports \_\_\_\_\_

Answer ( Please select your correct option )

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☒ Programmer's view of memory

☐ System's view of memory

☐ Hardware's view of memory

☐ None of the given

Made by: Waqar Siddhu

Question No : 23 of 52

Marks: 1 (Budgeted Time 1 Min)

A \_\_\_\_\_ is a piece of code in a cooperating process in which the process may updates shared data (variable, file, database, etc.).

Answer ( Please select your correct option )

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☒ critical section



☐ critical region

☐ monitor

☐ all of the given are correct

Made by: Waqar Siddhu



Question No : 24 of 52

Marks: 1 (Budgeted Time 1 Min)

The next layer above the hardware layer in the layered approach of Operating System is----- layer

Answer ( Please select your correct option )

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- ☐ User interface
- ☒ Kernel not sure
- ☐ Hardware
- ☐ None of the given options

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Question No : 25 of 52

Marks: 1 (Budgeted Time 1 Min)

Priority of a process is ----- to the priority number of the process.

Answer ( Please select your correct option )

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- ☐ Directly proportional
- ☐ Equal
- ☐ Inversely proportional
- ☐ Greater

Made by: Waqar Siddhu

Question No : 26 of 52

Marks: 1 (Budgeted Time 1 Min)

----- is the operating system's attempt to improve the computer system's utilization and throughput.

Answer ( Please select your correct option )

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- ☐ Exec
- ☐ Fork
- ☒ Demand Paging
- ☐ Thrashing



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Question No : 27 of 52

Marks: 1 (Budgeted Time 1 Min)

----- automatically holds for printers and other non-sharables

Answer ( Please select your correct option )

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☒ Hold and wait

☐

☐ Circular wait

☐

☐ Mutual exclusion

☐

☐ No preemption

☐

Made by: Waqar Siddhu

Question No : 28 of 52

Marks: 1 (Budgeted Time 1 Min)

The main disadvantage of semaphore is -----

Answer ( Please select your correct option )

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☐ Context switching

☐

☒ Busy waiting

☐

☐ Synchronization

☐

☐ None of the given options

☐

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Question No : 29 of 52

Marks: 1 (Budgeted Time 1 Min)

\_\_\_\_\_ states that as a process executes it moves from locality to locality.

Answer ( Please select your correct option )

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☐ Working Set Model

☐

☐ Page Fault Frequency

☐

☒ Locality of Reference

☐

☐ None of the given options

☐

Made by: Waqar Siddhu



Question No : 30 of 52

Marks: 1 (Budgeted Time 1 Min)

\_\_\_\_\_ is a way to establish a connection between the file to be shared and the directory entries of the users who want to have access to this file.

Answer ( Please select your correct option )

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☐ Link



☐

☐ Directory

☐

☐ Common Group

☐

☐ Access Permission

☐

Made by: Waqar Siddhu

Question No : 31 of 52

Marks: 1 (Budgeted Time 1 Min)

A parent process calling \_\_\_\_\_ system call will be suspended until children process terminates.

Answer ( Please select your correct option )

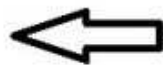
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☐ wait

☐

☐ fork

☐



☐ exit

☐

☐ exec

☐

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Question No : 32 of 52

Marks: 1 (Budgeted Time 1 Min)

High-level synchronization construct that allows the safe sharing of an abstract data type among concurrent processes is called a -----

Answer ( Please select your correct option )

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☒ Read/Write Lock

☐

☐ Swap

☐

☐ Semaphore

☐

☐ Monitor

☐

Made by: Waqar Siddhu



Question No : 33 of 52

Marks: 1 (Budgeted Time 1 Min)

\_\_\_\_\_ is the name of the technique that is designed to get rid of deadlocks by changing the specifications of the system.

Answer ( Please select your correct option )

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☐ Deadlock avoidance

☐ Deadlock prevention

☐ Deadlock

☐ Deadlock free

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Question No : 34 of 52

Marks: 1 (Budgeted Time 1 Min)

In which of the following operations, the scheduler is not called into play?

Answer ( Please select your correct option )

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☐ Process requests for I/O.

☐ Process finishes execution.

☐ Process finishes its time allotted.

☒ All of the given

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Question No : 35 of 52

Marks: 1 (Budgeted Time 1 Min)

"Only one process may use a resource at a time" best describes which one of the following?

Answer ( Please select your correct option )

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☐ Circular wait

☐ Hold and wait

☐ No preemption

☐ Mutual Exclusion

Made by: Waqar Siddhu



Question No : 36 of 52

Marks: 1 (Budgeted Time 1 Min)

Which of the following is NOT a valid deadlock prevention scheme?

Answer ( Please select your correct option )

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☐ Release all resources before requesting a new resource

☐ Number the resources uniquely and never request a lower numbered resource than the last one requested.

☐ Never request a resource after releasing any resource

☐ Request and all required resources be allocated before execution.

**Made by: Waqar Siddhu**

Question No : 37 of 52

Marks: 1 (Budgeted Time 1 Min)

\_\_\_\_\_ page replacement algorithm suffers from Belady's anomaly.

Answer ( Please select your correct option )

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☐ LRU

☐ MRU

☐ FIFO

☐ LIFO

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Question No : 38 of 52

Marks: 1 (Budgeted Time 1 Min)

A page fault occurs

Answer ( Please select your correct option )

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☐ when the page is in the memory

☐ when the process enters the blocked state

☐ when the process is in the ready state

☐ when the page is not in the memory

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Question No : 39 of 52

Marks: 1 (Budgeted Time 1 Min)

The mechanism that brings a page into memory only when it is needed is called \_\_\_\_\_

Answer ( Please select your correct option )

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- ☐ Segmentation
- ☐ Fragmentation
- ☐ Demand Paging
- ☐ Page Replacement

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Question No : 40 of 52

Marks: 1 (Budgeted Time 1 Min)

\_\_\_\_\_ occurs in a dynamic memory allocation system when many of the free blocks are too small to satisfy any request

Answer ( Please select your correct option )

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- ☐ Segmentation
- ☐ Virtual memory
- ☐ Page fault
- ☐ Fragmentation

**Made by: Waqar Siddhu**

Question No : 41 of 52

Marks: 2 (Budgeted Time 4 Min)

When a process is rolled out of memory, it loses its ability to use the CPU (at least for a while). Describe another situation where a process loses its ability to use the CPU, but where the process does not get rolled out.

Answer ( Please [click here](#) to Add Answer )

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Normal Arial 12 B I U

**Made by: Waqar Siddhu**



Question No : 42 of 52

Marks: 2 (Budgeted Time 4 Min)

Define Indexed Allocation as a Space Allocation Method.

Answer ( Please [click here](#) to Add Answer )

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Made by: Waqar Siddhu

Question No : 43 of 52

Marks: 2 (Budgeted Time 4 Min)

Consider a process with its segment 15 having 5096 bytes. The process generates a logical address (15,3921). What page does the logical address refer to?

Answer ( Please [click here](#) to Add Answer )

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Made by: Waqar Siddhu

Question No : 44 of 52

Marks: 2 (Budgeted Time 4 Min)

Preemptive Shortest Job First scheduling algorithm is best algorithm for minimizing the waiting time for the processes. How can you calculate the average waiting time in preemptive Shortest Job First scheduling algorithm?

Answer ( Please [click here](#) to Add Answer )

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Question No : 45 of 52

Marks: 3 (Budgeted Time 6 Min)

What does a Page Table entry contain?

Answer ( [Please click here to Add Answer](#) )

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Question No : 46 of 52

Marks: 3 (Budgeted Time 6 Min)

Write the names of three commonly used methods for file space allocation?

Answer ( [Please click here to Add Answer](#) )

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Question No : 47 of 52

Marks: 3 (Budgeted Time 6 Min)

List any three criterion when the fork() system call fails to complete its task?

Answer ( [Please click here to Add Answer](#) )

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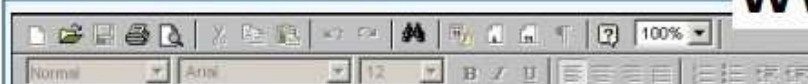
Question No : 48 of 52

Marks: 3 (Budgeted Time 6 Min)

Do overlays increase a burden on a programmer as compare to virtual memory? Give reason to support your answer.

Answer ( Please [click here](#) to Add Answer )

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Question No : 49 of 52

Marks: 5 (Budgeted Time 10 Min)

What steps needed for page replacement?

Answer ( Please [click here](#) to Add Answer )

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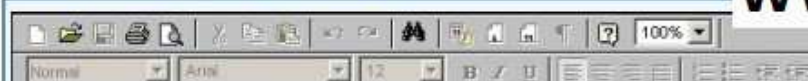
Question No : 50 of 52

Marks: 5 (Budgeted Time 10 Min)

If a process does not have "enough" pages, the page-fault rate is very high. This leads to low CPU utilization. The operating system needs to increase the degree of multiprogramming because it monitors the CPU utilization. When another process added, will it increase the throughput of the system?

Answer ( Please [click here](#) to Add Answer )

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Question No : 51 of 52

Marks: 5 (Budgeted Time 10 Min)

Do you feel that is there any preemptive version of Shortest-Job-First (SJF) available? If yes then elaborate the working and performance (in terms of average waiting time) of that preemptive version as compare to non preemptive version, if not, then give reason to support your answer?

Answer ( Please [click here](#) to Add Answer )

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Question No : 52 of 52

Marks: 5 (Budgeted Time 10 Min)

Out of MVT (Multiprogramming with Variable Tasks) and MFT (Multiprogramming with Fixed Tasks), which one do you think is best suited to cause internal fragmentation and which one is best suited to cause external fragmentation?  
Also differentiate briefly between MVT and MFT.

Answer ( Please [click here](#) to Add Answer )

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