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بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِيْمِ

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)

1 KB or 1 kilobyte is equivalent to ------

Answer (Please select your correct option)

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- 10 bytes
- 1000 bytes
- 1024 bytes
- 10000 bytes

Made by: Waqar Siddhu

Question No : 2 of 52 Marks: 1 (Budgeted Time 1 Min)

A ----------system collects physically separate, possibly heterogeneous, systems into a single coherent system, providing the user with access to the various resources that the system maintains

A distributed system collects physically separate, possibly heterogeneous, systems into a single coherent system, providing the user with access to the various resources that the system maintains.

Answer (Please select your correct option)

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- Distributed — correct — page 13
- Real-time
- Single user
- Time-sharing

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Question No : 3 of 52 Marks: 1 (Budgeted Time 1 Min)

Preemptive ----------scheduling is sometimes called **shortest-remaining-time-first** scheduling.

Preemptive SJF scheduling is sometimes called shortestremaining-time-first scheduling.

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Answer (Please select your correct option)

- First-Come-First-Served (FCFS)
- Round-Robin
- Sorted Job First (SJF)

correct

- Priority

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Question No : 4 of 52 Marks: 1 (Budgeted Time 1 Min)

The semaphore empty is initialized to the value ---------; the semaphore full is initialized to the value --------.

The semaphore empty is initialized to the value n; the semaphore full is initialized to the value 0.

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Answer (Please select your correct option)

- 0,n
- n,0

correct

- n,n
- 0,0

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Question No : 5 of 52 Marks: 1 (Budgeted Time 1 Min)

A ----------is a region of code where shared resources are accessed.

Whereas resource sharing is one of the major advantages of threads

page 70

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Answer (Please select your correct option)

- deadlock
- critical region
- process
- thread

correct

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Question No : 6 of 52 Marks: 1 (Budgeted Time 1 Min)

In ---------- technique, memory is divided into several fixed-size partitions.

Multiprogramming with Fixed Tasks (MFT)
In this technique, memory is divided into several fixed-size partitions.

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Answer (Please select your correct option)

- Swapping
- Overlays
- Multiprogramming with Fixed Tasks (MFT)

  correct
- Multiprogramming with Variable Tasks (MVT)

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Question No : 7 of 52 Marks: 1 (Budgeted Time 1 Min)

Every ----------generated by the CPU is divided into two parts: a page number (p) and a page offset (d).

Every logical address generated by the CPU is divided into two parts: a page number (p) and a page offset (d).

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Answer (Please select your correct option)

- Page
- Process address space
- Physical address
- Logical address

  correct

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Question No : 8 of 52 Marks: 1 (Budgeted Time 1 Min)

If validation bit is 0, it indicates a/an --------- state of segment.

Validation bit : if the validation bit is 0, it indicates an illegal segment

page 178

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Answer (Please select your correct option)

- protected
- shared
- legal
- illegal

  correct

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Question No : 9 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

This algorithm is based on the locality of reference concept— the least frequently used page is not in the current locality. LFU

page 204

Answer (Please select your correct option)

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- Least Frequently Used algorithm

  correct
- Page Buffering Algoritm
- None of the given options
- Most Frequently Used algorithm

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Question No : 10 of 52 Marks: 1 (Budgeted Time 1 Min)

In _____ allocation scheme number of frames allocated to a process is proportional to its size .

Proportional Allocation
Number of frames allocated to a process is proportional to its size in this scheme.

page 205

Answer (Please select your correct option)

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

  correct
- Priority Allocation

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Question No : 11 of 52 Marks: 1 (Budgeted Time 1 Min)

In case of thrashing if CPU utilization is too low the operating system _____ the degree of multiprogramming

if CPU utilization is too low, the operating system increases the degree of multiprogramming by introducing one or more new processes to the system.

page 208

Answer (Please select your correct option)

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- Increases

  correct
- Decreases
- Increases or Decreases
- None of the given options

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Question No : 12 of 52 Marks: 1 (Budgeted Time 1 Min)

_____ enable processes to communicate with each other

FIFO enable processes to communicate with each other.

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Answer (Please select your correct option)

- Directory
- FIFO

correct

- Link File
- Ordinary File

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Question No : 13 of 52 Marks: 1 (Budgeted Time 1 Min)

When a _____link is created, a directory entry for the existing file is created

When a hard link is created, a directory entry for the existing file is created—there is still only one file.

page 225

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Answer (Please select your correct option)

- Soft
- Hard

correct

- Soft or Hard
- Soft or Hard

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Question No : 14 of 52 Marks: 1 (Budgeted Time 1 Min)

In _____, each file is a linked list of disk blocks: blocks may be scattered anywhere on the disk.

Linked Allocation
Each file is a linked list of disk blocks: blocks may be scattered anywhere on the disk.

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Answer (Please select your correct option)

- Indexed Allocation
- Contiguous Allocation
- Linked Allocation

correct

- None of the given options

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Question No : 15 of 52 Marks: 1 (Budgeted Time 1 Min)

Shared libraries and kernel modules are stored in _____ directory

/lib Shared libraries and kernel modules are stored in this directory

page 23

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Answer (Please select your correct option)

- /bin
- /dev
- /boot
- /lib

correct

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Question No : 16 of 52 Marks: 1 (Budgeted Time 1 Min)

The problem of Deadlocks can be solved by _____ method(s).

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Answer (Please select your correct option)

- Deadlock prevention
- Deadlock avoidance
- Allowing deadlock and recovery
- All of the given

correct

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Question No : 17 of 52 Marks: 1 (Budgeted Time 1 Min)

In _____ page replacement algorithm oldest frame is replaced with another.

page 119

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Answer (Please select your correct option)

- LIFO
- FIFO

correct

- LRU
- Optimal

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Question No : 18 of 52 Marks: 1 (Budgeted Time 1 Min)

In Resource Allocation Graph, a _____ $P_i \rightarrow R_j$ indicates that process P_i may request resource R_j at some time in the future.

Resource Allocation Graph Algorithm
In addition to the request and assignment edges explained in the previous lectures, we introduce a new type of edge called a claim edge to resource allocation graphs. A claim edge Pi →Rj indicates that process Pi may request resource Rj at some time in the future. page 136

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Answer (Please select your correct option)

- Claim edge — correct
- Request edge
- Assignment edge
- Allocation edge

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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)**?

Assume a logical address space of 16 pages of 1024 words, each mapped into a physical memory of 32 frames. No. of bits needed for p = ceiling [log2 16] bits = 4 bits page 166

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Answer (Please select your correct option)

- 4 bits — correct
- 8 bits
- 16 bits
- 32 bits

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Question No : 20 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.
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. page 245

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Answer (Please select your correct option)

- arm — correct
- cylinder
- head
- non of these

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Question No : 21 of 52 Marks: 1 (Budgeted Time 1 Min)

Segmentation is a memory management scheme that supports _____

Segmentation is a memory management scheme that supports programmer's view of memory.

page 176

Answer (Please select your correct option)

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- Programmer's view of memory — correct
- System's view of memory
- Hardware's view of memory
- None of the given

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Question No : 22 of 52 Marks: 1 (Budgeted Time 1 Min)

_____is a variation of fork system call in several Unix operating system used for Virtual Memory.

vfork()
Several versions of UNIX provide a variation of the fork() system call—vfork() (for virtual memory fork).

page 194

Answer (Please select your correct option)

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- vfork ( ) — correct
- wfork ( )
- avfork ( )
- bfork ( )

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Question No : 23 of 52 Marks: 1 (Budgeted Time 1 Min)

The bottom layer in the layered approach of Operating System is----------

page 20

Answer (Please select your correct option)

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- User interface
- Hardware — correct
- Kernel
- None of the given options

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Question No : 24 of 52 Marks: 1 (Budgeted Time 1 Min)

Named pipes give a ----------flow of data by default

46 page

Answer (Please select your correct option)

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- half-duplex (one-way)

  correct

- full duplex(both-ways)
- both half-duplex and full duplex
- none of the given options

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Question No : 25 of 52 Marks: 1 (Budgeted Time 1 Min)

In _____ frame allocation scheme free frames are equally divided among processes

Fixed allocation
In this scheme free frames are equally divided among processes

page 205

Answer (Please select your correct option)

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- Fixed

  correct

- Proportional
- Priority
- All of the given

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Question No : 26 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

  correct

  cheking require

- Circular wait
- Mutual exclusion
- No preemption

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Question No : 27 of 52 Marks: 1 (Budgeted Time 1 Min)

---------- is a single program that produces an object file

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Answer (Please select your correct option)

- Linker
- Compiler

correct

- Loader
- Text editor

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Question No : 28 of 52 Marks: 1 (Budgeted Time 1 Min)

----------keeps in memory only those instructions and data that are needed at any given time.

The idea of overlays is to keep in memory only those instructions and data that are needed at any given time.

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Answer (Please select your correct option)

- Paging
- Swapping
- Overlays

correct

- Fragmentation

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Question No : 29 of 52 Marks: 1 (Budgeted Time 1 Min)

The address generated by the CPU, after any indexing or other addressing-mode arithmetic, is called a --------*address*, and the address it gets translated to by the MMU is calle a ---------*address*.

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Answer (Please select your correct option)

- Virtual, physical

correct

- Hexadecimal, Binary,
- Valid, invalid
- Physical, Virtual

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Question No : 30 of 52 Marks: 1 (Budgeted Time 1 Min)

_____ is/are a memory management scheme that supports programmer's view of memory.

page 176

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Answer (Please select your correct option)

- Paging
- Segmentation

  correct
- All of the given options
- Demand Paging

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Question No : 31 of 52 Marks: 1 (Budgeted Time 1 Min)

A new process is created by the---------- system call

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Answer (Please select your correct option)

- exit
- fork

  correct

  midterm solve
- wait
- exec

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Question No : 32 of 52 Marks: 1 (Budgeted Time 1 Min)

The ---------- are used for communication between related or unrelated processes on the same system or unrelated processes on different systems.

BSD Socket: The BSD sockets are used for communication between related or unrelated processes on the same system or unrelated processes on different systems.

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Answer (Please select your correct option)

- None of the given
- SSD socket
- DSD socket
- BSD sockets

  correct

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Question No : 33 of 52 Marks: 1 (Budgeted Time 1 Min)

_____ wastes CPU cycles and hence a problem in real multiprogramming system.

Busy waiting wastes CPU cycles that some other process may be able to use productively.

page 111

Answer (Please select your correct option)

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- Busy waiting

  correct
- Semaphore
- Critical section
- Mutex

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Question No : 34 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

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Question No : 35 of 52 Marks: 1 (Budgeted Time 1 Min)

In ..... system, the user space contains one process at a time because only one process is executing at a given time.

In case of a batch system, the user space contains one process at a time because only one process is executing at a given time.

page 5

Answer (Please select your correct option)

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- Multi programmed
- Batch

  correct
- Time-sharing system
- None of the given

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Question No : 36 of 52 Marks: 1 (Budgeted Time 1 Min)

Which one of the following is the correct syntax to copy file1 to file2?

page 27

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Answer (Please select your correct option)

- cp file2, file1
- cp file1/file2

correct

- cp file2 file1
- cp file1 file2

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Question No : 37 of 52 Marks: 1 (Budgeted Time 1 Min)

_____ points to the smallest memory address of a process.

limit registers are used
to point to the smallest memory address of a process

159 page

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Answer (Please select your correct option)

- Limit register

correct

- Base register
- Stack pointer
- None of the given

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Question No : 38 of 52 Marks: 1 (Budgeted Time 1 Min)

A wait operation on a semaphore should not occur within a critical section controlled by that semaphore because

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Answer (Please select your correct option)

- A deadlock will occur
- A semaphore is not a shared variable
- A signal on a semaphore is always given from outside the critical section
- None of the given

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Question No : 39 of 52 Marks: 1 (Budgeted Time 1 Min)

_____ page replacement algorithm suffers from Belady's anamoly.

Example for the FIFO page replacement algorithm
The problem with this algorithm is that it suffers from Belady's anomaly:

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Answer (Please select your correct option)

- LRU
- MRU
- FIFO
- LIFO

correct

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Question No : 40 of 52 Marks: 1 (Budgeted Time 1 Min)

_____ is a high speed cache used to hold recently referenced page table entries a part of paged virtual memory

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Answer (Please select your correct option)

- Translation Look aside buffer
- Inverse page table
- Segmented page table
- All the above

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Question No : 41 of 52 Marks: 2 (Budgeted Time 4 Min)

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

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Answer (Please click here to Add Answer)

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Question No : 42 of 52 Marks: 2 (Budgeted Time 4 Min)

Which anamoly is involved in FIFO page replacement?

Answer (Please click here to Add Answer)

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Question No : 43 of 52 Marks: 2 (Budgeted Time 4 Min)

The problem with using an acyclic-graph structure is ensuring that there are no cycles. What is the solution?

Answer (Please click here to Add Answer)

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Question No : 44 of 52 Marks: 2 (Budgeted Time 4 Min)

The main purpose of the computer system is to run different programs, why we run these programs?

Answer (Please click here to Add Answer)

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Question No : 45 of 52 Marks: 3 (Budgeted Time 6 Min)

What is the difference between a physical address and a virtual address?

Answer (Please click here to Add Answer)

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Question No : 46 of 52 Marks: 3 (Budgeted Time 6 Min)

What is Mounting? Name two types of mounting. Give your answer with respect to File System?

Answer (Please click here to Add Answer)

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Question No : 47 of 52 Marks: 3 (Budgeted Time 6 Min)

How vfork system call differes from fork system call?

Answer (Please click here to Add Answer)

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Question No : 48 of 52 Marks: 3 (Budgeted Time 6 Min)

Consider this algorithm for mutual exclusion.

```
Process 1{                      Process 2 {
while true {                    while true {
    while (turn == 1)               while (turn == 2)
        ; /* do nothing */            ; /* do nothing */
```

Answer (Please click here to Add Answer)

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Question No : 49 of 52 Marks: 5 (Budgeted Time 10 Min)

Briefly explain that how a Page Fault occurs and who is resoponsible to handle Page Fault?

Answer (Please click here to Add Answer)

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Question No : 50 of 52 Marks: 5 (Budgeted Time 10 Min)

In case of file protection, what should the file owner/creator be able to control? And what operations need to be controlled?

Answer (Please click here to Add Answer)

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Question No : 51 of 52 — **Marks: 5 (Budgeted Time 10 Min)**

Analyze that how an operating system protects the CPU.

Answer (Please click here to Add Answer)

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Question No : 52 of 52 — **Marks: 5 (Budgeted Time 10 Min)**

Let us consider a page size of 16 bytes and process address space of 32 pages and physical address space of 64 frames. Calculate the following.

a) Size of logical address i.e. Number of bits needed to uniquely identify a page in this address space of 16 pages.

b) Logical address in bits for (18, 10). Where 'p' and 'd' are 18 and 10 respectively.

Answer (Please click here to Add Answer)

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