CS604 Operating System

Update MCQS For Quiz-4 File

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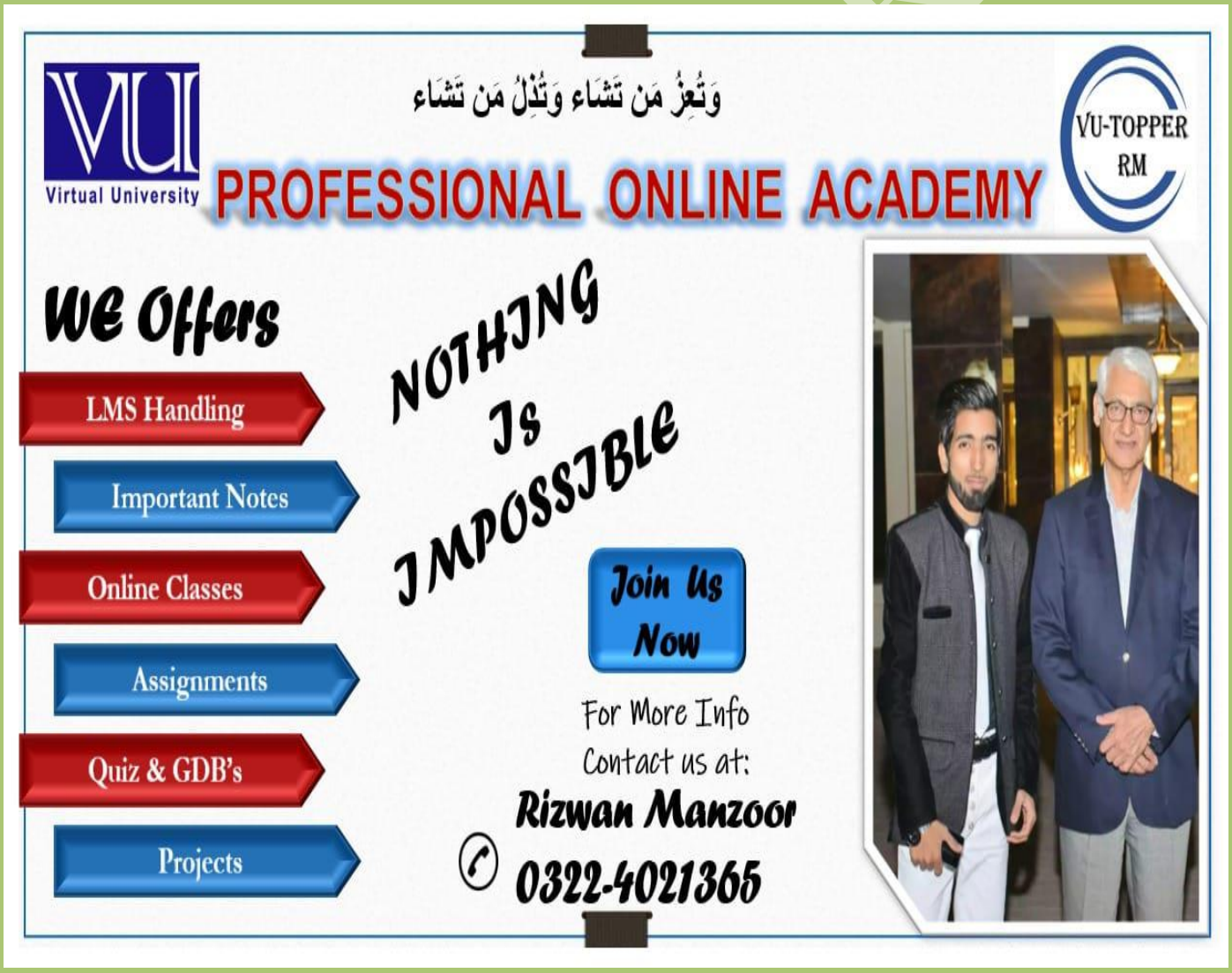
85% To 100% Marks



بری صحبت سے تنہائی بہتر ہے اور تنہائی سے نیک صحبت بہتر ہے

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For some page replacement algorithms, the page fault rate may increase as the number of allocated frames _____.

A. Constant
B. Increased Page 202
C. Decreased
D. All of the given

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

A. Fixed Allocation
B. Priority Allocation
C. Proportional Allocation Page 205
D. None of the given options

In a UNIX system,_____ system call can be used to request the operating system to memory map an opened file.

A. fork ( )
B. exec( )
C. read( )
D. mmap( ) Page 195

----------refers to the situation when free memory space exists to load a process in the memory but the space is not contiguous.

A. Swapping
B. Segmentation
C. Internal fragmentation
D. External Fragmentation Page 162

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

A. Decreases
B. Increases Page 208
C. None of the given options

D. sometimes increases and sometimes decreases

----------holds the smallest legal physical memory address for a process

A. Index register
B. Limit register
C. Base register Page 10
D. Stack pointers register

A process is _____if it is spending more time on paging

A. Paging
B. Thrashing Page 207
C. Fixed Allocation
D. Demand paging

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

A. 3
B. 5
C. 4
D. 2 Page 167

An optimal page-replacement algorithm has the lowest page fault rate of all algorithms.

True Page 199
False

Segmentation is a memory management scheme that supports _____?

A. None of the given
B. System's view of memory
C. Hardware's view of memory
D. Programmer's view of memory Page 175

This _____ algorithm is based on the locality of reference concept.

A. All of above
B. Page Buffering Algorithm
C. Least Frequently Used (LFU) **Page 203**
D. Most Frequently Used (MFU)

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

A. Stack
B. Assembly
C. Segmentation **Page 175**
D. Fragmentation

Overlays are implemented by the _____

A. Shell
B. Kernel
C. Programmer **Page 156**
D. Operating system

In _____ scheme free frames are equally divided among processes.

A. Fixed Allocation **Page 204**
B. Priority Allocation
C. Proportional Allocation
D. None of the given options

We want a page replacement algorithm with the _____ page-fault rate.

A. Lowest **Page 198**
B. Normal
C. Highest
D. None of the given

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

A. Paging
B. Overlays Page 156
C. Swapping
D. Fragmentation

In _____ page replacement algorithm we will replace the page that has not been used for the longest period of time.

A. LRU Page 202
B. FIFO
C. Counter based
D. Least Frequently Used

When the process tries to access locations that are not in memory, the hardware traps the operating system. This is called as _____.

A. Paging
B. Page Fault Page 188
C. Segmentation
D. Page replacement

The term pager is used in connection with _____.

A. Paging
B. Segmentation
C. Demand Paging Page 186
D. Paged Segmentation

The size of pages and frames are same in logical memory and physical memory respectively.

True Page 165
False

In paged segmentation, we divide every segment in a process into _____ pages.

Fixed size **Page 182**

Variable size

The size of a page is defined by _____.

A. CPU

B. Page Table

C. Logical Memory

D. Physical Memory

In Swapping technique of Memory Management, the total amount transfer time is directly proportional to the _____.

A. space on main memory

B. amount of memory swapped

C. all the given options are correct

D. amount of space on backing store

Optimal Page Replacement Algorithm provides a benchmark in assessing other page replacement algorithms.

A. True

B. False

The frame that has been modified during execution of a process is usually called _____ frame.

A. Dirty

B. Ideal

C. Clean

D. Overwritten

The major criterion in the selection of a particular algorithm is that we want to _____

A. increase efficiency.

B. minimize the number of page faults.
C. reduce running time of page replacement algorithm.
D. maximize the number of page faults.

The main criteria for Page Replacement in Optimal Page Replacement Algorithm is to
A. replace that page which will not be used for the longest period of time.
B. replace the page which is biggest in size
C. replace the page which is smaller in size
D. replace that page which will be required most frequently in the execution of a process

A program can not execute unless whole or necessary part of it resides in the main memory.
A. True
B. False

ST in logical addressing stands for _____ .
A. Smart Trap
B. Segment Table
C. None of the Given
D. String Table

The main objective of LRU Page Replacement Algorithm is to
A. replace the page which is used urgently
B. replace that page which was used most previously
C. replace that page which is referenced most frequently
D. replace the page which is replaced most recently

_____ is caused due to un-used space in fixed size blocks/ pages.
A. MVT

B. Paging
C. External fragmentation
D. Internal fragmentation

How does a logical-address space is represented?
Through Segments
Through Critical section

FIFO Page Replacement Algorithm has the lowest page fault rate
A. True
B. False

Following statement is NOT true about Virtual memory.
A. Virtual memory makes the task of programming easier because the programmer need not worry about the amount of physical memory,
B. Virtual memory makes the processes to stuck when the collective size of all the processes becomes greater than the size of main memory.
C. Virtual memory help in executing bigger programs even greater in size that of main memory.
D. Virtual memory also allows files and memory to be shared by several different processes through page sharing.

To eliminate external fragmentation in segmentation the scheme used is _____.
A. Fixed size paging scheme
B. Variable size partition scheme
C. Variable size paging scheme
D. Fixed size partition scheme

Assume a logical address space of 16 pages, each 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)?

A. 5
B. 8
C. 6
D. 7

Following schemes allow efficient implementations of page tables EXCEPT
A. Inverted Page Table
B. Binary Page Table
C. Hierarchical / Multilevel Paging
D. Hashed Page Table

_____is a variation of fork system call in several Unix operating system.
A. bfork ( )
B. vfork ( )
C. avfork ( )
D. wfork ( )

Logical address is defined by which tuple/tuples?
A. Indexed number and offset
B. Segment number and offset
C. Paging
D. Physical address

Following are the advantages of Virtual memory EXCEPT
A. Concept of memory mapped files
B. Low CPU consumption
C. Efficient process creation
D. Running large sized processes

LRU page replacement algorithm can be implemented by
A. all of the given options

B. stack
C. linked list
D. counter

Preventing the condition of _____ to happen, deadlocks can be prevented to happen.

A. Monitors
B. Circular wait Page 136 ok
C. Critical section
D. Critical region

While a process executes its critical section, other entering processes loop in a continual fashion in their entry sections, thus causing _____.

A. Bounded waiting
B. Busy waiting ok
C. Race condition
D. Mutual exclusion

Secondary Storage memory devices have _____ memory.

A. Volatile
B. Temporary
C. Permanent and non volatile ok
D. None of the options is correct.

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

A. Linker
B. Loader
C. Complier Page 86 ok
D. Text editor

Using hardware solution to synchronization for complex problems, introduce a new synchronization tool know as _____.

A. Trap
B. Swap
C. TestAndSet
D. Semaphore Page 111 ok

When the address used in a program gets converted to an actual physical RAM address, it is called ----------
A. Loading
B. Execution
C. Compiling
D. Address Binding ok

Semaphore S is a/an _____ type of variable to use as synchronization tool.
A. Float
B. Integer Page 111 ok
C. Double
D. Boolean

We can use semaphores to deal with the number of _____process critical section problem.
A. N Page 102 ok
B. 2n
C. n-1
D. 1

Access of variable Semaphore is possible only through two atomic operation _____ and _____.
A. Lock, key
B. Boolean, integer
C. TestAndSet, Swap ok
D. Wait, signal

The situation in which no context switching is required in multiprocessor systems is referred to as _____ .

A. Spin lock ok
B. Scheduler
C. Busy Waiting
D. Interrupt

The wait operation of the semaphore basically works on the basic _____ system call.

A. hold()
B. block() ok
C. stop()
D. wait()

For undivided and uninterrupted testing and setting of semaphore, uni-processor systems tend to _____.

A. Use spinlock ok
B. Use signal
C. Disable interrupts
D. Use bakery algorithm

Cache is non-volatile memory.

False Page 153 ok
True

It is not possible to run a program whose size is greater than the size of the main memory.

A. 36 bits
B. 48 bits Page 185
C. 64 bits
D. 128 bits

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

A. Process address space
B. Logical address space
C. Physical address space Page 155 ok
D. None of the given options

Address Binding will be at _____ in Multiprogramming with Fixed Tasks (MFT)

A. Run time
B. Load time Page 160
C. Dynamic time
D. None of the given options

In memory management programmer's view of memory representation is called _____.

A. Offset
B. Segmentation Page 175
C. Logical address
D. Physical address

Intel is basically designed for following Operating Systems except _____.

A. Linux
B. OS/2
C. Windows
D. MULTICS Page 182

Intel 80386 used paged segmentation with _____ level paging.

A. One
B. Two Page 185
C. Four
D. Three

The logical address of Intel 80386 is _____.

A. 36 bits
B. 48 bits Page 185
C. 64 bitts
D. 128 bits

A _____ system is similar to a paging system with swapping

A. Page fault
B. Demand paging Page 186
C. Context switching
D. None of the given options

The segment table maps the _____ to physical addresses.

A. Page addresses
B. Shared page addresses
C. One-dimensional logical addresses
D. Two-dimensional logical addresses Page 175

Which of the following is correct definition for signal operation?

A. signal(S) {while(S<=0);// no opS--;}
B. signal(S) {S++;}
C. signal(S) {while(S>=0);// no opS--;} ok
D. signal(S) {S--;}

Possible side effects of _____deadlocks are low device utilization and reduced system throughput.

A. Ignoring
B. Avoiding
C. Recovering
D. Preventing ok

Which of the following is correct definition for wait operation?

A. **wait(S) { while(S<=0);// no o S--; Page 108 ok**
B. wait(S) { S++; }
C. wait(S) { while(S>=0) ;// no op S--; }
D. wait(S) { S--; }

The ----------scheme is not applicable to a resource allocation system with multiple instances of each resource type.

A. **Wait for graph Page 145 ok**
B. None of the given options
C. Resource allocation graph
D. Both Resource-allocation and wait-for graph

Semaphores are used to synchronize _____ processes.

A. Tough
B. Parallel
C. Running
D. **Concurrent ok**

Following is not the classical problem of synchronization.

A. Bounded buffer problem
B. Reader writer problem
C. Dining philosophers problem
D. **Counting Semaphore problem Page 118 ok**

In Resource Allocation Graph, a _____Pi --->Rj indicates that process Pi may request resource Rj at some time in the future.

A. **Claim edge Page 138**
B. Request edge
C. Allocation edge
D. Assignment edge

_____ is used in the detection and recovery mechanism to handle deadlocks.

A. Circular Graph
B. Wait-for Graph Page 144 ok
C. Claim Edge Graph
D. Resource allocation Graph

Typically monitor, a high level synchronization tool is characterized by _____ and _____.
A. Signal, wait
B. Local variables, semaphores
C. Global variable,local variable
D. Local data, programmer defined operators Page 125 ok

In order to remove the problem like busy waiting, some high level synchronization constructs are defined. What are they?
Critical regions and Monitors Page 124 ok
Critical regions and Semaphores

The integer value of _____ semaphores can not be greater than 1.
A. Mutex
B. Binary Page 117 ok
C. Counting
D. Bounded buffer

Banker's algorithm is used for _____
A. Deadlock removal
B. Deadlock detection
C. Deadlock prevention
D. Deadlock avoidance Page 140 ok

_____ is an integer variable accessible through wait and signal which are atomic operations.
A. Signal
B. Mutex

C. Semaphore Page 111 ok
D. Busy waiting

The _____requires that once a writer is ready, that writer performs its write as soon as possible. In other words, if a writer is waiting to access the object, no new readers may start reading.
A. first readers-writers problem
B. third readers-writers problem
C. fourth readers-writers problem
D. second readers-writers problem Page 116 ok

A state is _____ if the system can allocate resources for each process in some order and still avoid a deadlock.
A. Safe Page 134 ok
B. Unsafe
C. Mutual
D. Starvation

_____ algorithm is used in Deadlock avoidance.
A. Bakery
B. Banker's Page 139 ok
C. Safe Sequence
D. Mutual exclusion

Binary semaphore whose integer value cannot be can be _____simpler to implement.
A. >1 Page 114 ok
B. <1
C. <=1
D. >=1

Deadlock _____ provides a set of methods for ensuring that at least one of the necessary conditions cannot hold.

A. Handling
B. Avoidance
C. Recovery
D. Prevention Page 132 ok

The condition in which a set {P0, P1… Pn} of waiting processes must exist such that P0 is waiting for a resource that is held by P1, P1 is waiting for a resource that is held by P2, and so on, Pn-1 is waiting for a resource held by Pn, and Pn is waiting for a resource held by P0. This condition is known as _____.

A. Circular wait Page 131 ok
B. Hold and wait
C. No preemption
D. Mutual exclusion

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

A. All of the given Page 132 ok
B. Deadlock avoidance
C. Deadlock prevention
D. Allowing deadlock to occur, then detect and recover

The integer value of _____ semaphores can range over an unrestricted integer domain.

A. Mutex
B. Binary
C. Counting Page 117 ok
D. Bounded buffer

If the system can allocate resources to each process in some order and still avoid a deadlock then it is said to be in _____ state.

A. Safe Page 134 ok
B. Mutual
C. Un-Safe

D. Starvation

Wrong use of wait and signal operations (in context with semaphores) can cause _____ problem(s).

A. Deadlock
B. Mutual Exclusion
C. Bounded Waiting
D. All of the given options are correct. ok

Deadlock can be deal with _____ways.

A. 1
B. 2
C. 3 Page 132 ok
D. 4

The condition where a set of blocked processes each holding a resource and waiting to acquire a resource held by another process in the set, is termed as _____.

Deadlock Page 130 ok
Starvation

If a system is not in a safe state, there can be NO deadlocks.

False Pagen 137 ok
True

Deadlock detection and recovery technique is exactly similar to deadlock avoidance technique to handle deadlock in the system.

True ok
False

A dashed line is used to represent a _____ in Resource Allocation Graph.

A. Claim edge Page 136 ok

B. Request edge
C. Allocation edge
D. Assignment edge

Removing the possibility of deadlock in dining philosopher problem does not ensure the _____ problem will not occur.

A. Starvation Page 123
B. Critical Section
C. Bounded Buffer
D. Mutual Exclusion

In deadlock detection and recovery algorithm, a deadlock exists in the system if and only if the wait for graph contains a _____.

A. Node
B. Edge
C. Cycle Page 147 ok
D. Graph

The process of holding at least one resource and waiting to acquire additional resources that are currently being held by other processes is known as _____.

A. Circular wait
B. Hold and wait Page 131 ok
C. No preemption
D. Mutual exclusion

Variable names are ---------- addresses.

A. Relative
B. Physical
C. Symbolic
D. Relocatable Google ok

In Resource Allocation Graph, a _____Pi --->Rj indicates that process Pi may request resource Rj at some time in the future.

A. Claim edge **Page 138**
B. Request edge
C. Allocation edge
D. Assignment edge

The _____ protection scheme guards against a process trying to access a page that does not belong to its address space.

A. Hybrid
B. Primary **Page 169**
C. Tertiary
D. Secondary

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)?

A. 4 bits **Page 166**
B. 8 bits
C. 16 bits
D. 32 bits

Address Binding will be _____ in Multiprogramming with Variable Tasks (MVT)

A. Fixed
B. Static
C. Variable
D. Dynamic

The system maintains a _____ of all processes whose memory images are on the backing store or in memory and are ready to run.

A. Que
B. List

C. Ready que **Page 157**
D. Environment

In_____, the library files are linked at load time.
Static Linking **ok**
Dynamic Linking

Main Memory is _____ memory.
A. Virtual
B. Volatile **ok**
C. Permanent
D. Non-volatile

Object files and libraries are combined by a ---------- program to produce the executable binary
A. Linker
B. Loader **ok**
C. Compiler
D. Text editor

Memory protection in paging is achieved by associating _____ with each page. This bit indicates whether the page is in the process address space or not.
A. paging table
B. counting bits
C. segment table
D. Protection bits **Page 169**

_____ consists of a large array of words or bytes, each with its own address.
A. Data
B. Stream
C. Memory **Page 150** **ok**

D. Hard disk

Logical memory is divided into blocks of the same size, called_____ .

A. Pages **Page 162**
B. Table
C. Frame
D. Page size

_____ is constrained by factors like quantum for RR scheduler and pending I/O for swapped out process.

A. Rollin
B. Rollout
C. Kernel
D. Swapping **Page 157**

---------- register contains the size of the process

A. Base register
B. Index register
C. Limit register **Page 13**
D. Stack pointers register

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

A. Logical address **Page 152** **ok**
B. Binary addresses
C. Physical address
D. None of the given options

What do we name to an address that is loaded into the memory-address register of the memory?

A. Logical address
B. Physical address **Page 155** **ok**
C. Binary addresses

D. None of the given options

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

A. Page size
B. 2-level paging
C. Page directory Page 173
D. Page table size

In pages segmentation, the logical address is legal if d is _____segment length.

A. Equal to
B. Less than Page 180
C. Greater than
D. Greater than or equal to

The collection of processes that is waiting on the disk to be brought into the memory for execution forms the --------

A. Output queue
B. Input queue Page 151 ok
C. None of the given options
D. Both input and output queue

----------points to the page table

A. Page offset
B. Translation look-aside buffers
C. Page-table base register (PTBR)
D. Page-table length register (PRLR)

Physical memory is broken down into fixed-sized blocks, called---------- and Logical memory is divided into blocks of the same size, called ----------

A. Pages, frame

B. Frames, holes
C. Frames, pages Page 165
D. Holes, segments

External Fragmentation takes place in _____
A. Paging
B. Multi-tasking
C. Multiprogramming with Fixed Tasks (MFT)
D. Multiprogramming with Variable Tasks (MVT) Page 163

Addresses generated relative to part of program, not to start of physical memory are
A. Virtual
B. Physical
C. Symbolic
D. Relocatable ok

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 called a ---------address.
A. Valid, invalid
B. Physical, Virtual
C. Virtual, physical Page 153
D. Hexadecimal, Binary

In ---------- technique, memory is divided into several fixed-size partitions.
A. Overlays
B. Swapping
C. Multiprogramming with Fixed Tasks (MFT) Page 160
D. Multiprogramming with Variable Tasks (MVT)

_____is the separation of user logical memory from physical memory.

A. Rom
B. Virtual Memory Page 185
C. Physical memory
D. None of the given options

In Overlay technique, we can overload any part of the program with the part of the program required needed recently.
True
False

If there exists a logical address space of 16 pages of 1024 words, each mapped into a physical memory of _____ frames.

A. 16
B. 32 Page 165
C. 48
D. 64

----------is the process of mapping a name to an address.

A. Routing
B. Binding
C. Memory Page 194 ok
D. Addressing

_____ is caused due to un-used space in physical memory.

A. MVT
B. Paging
C. External fragmentation
D. Internal fragmentation

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

A. Page
B. Logical address **Page 163**
C. Physical address
D. Process address space

_____ is commonly implemented as demand paging.
A. Paging
B. Virtual Memory **Page 185**
C. Physical Memory
D. Logical Addressing

The main memory is usually divided into partitions, one for _____ and other for _____ .
A. Operating system, CPU
B. Processes, Virtual Memory
C. Base Register, Limit Register
D. Operating System, User processes

The run-time mapping from virtual to physical addresses is done by a piece of hardware in the CPU, called the ----------
A. Registers
B. CPU Scheduler
C. None of the given options
D. Memory management unit (MMU) **Page 155** **ok**