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Time taken	21 mins 25 secs
Marks	18.05/30.10
Grade	17.99 out of 30.00 (60%)

Question 1

Incorrect

Mark 0.00 out of 0.40

The paging system in a **memory management** system provides for dynamic mapping between a virtual address used in a program and

Select one:

- ☒ a. A virtual address in main memory
- ✖

☐ b. A real address in main memory
- ☐ c. A real address in a program
- ☐ d. None of the above

Your answer is incorrect.
The correct answer is: A real address in main memory

Question 2

Correct

Mark 0.35 out of 0.35

An operating system controls the execution of applications and acts as an interface between applications and the computer hardware.

Select one:

- ☒ True ✔
- ☐ False

The correct answer is 'True'.

Question 3

Incorrect

Mark 0.00 out of 0.40

The Dining Philosopher's Problem is a standard test case for evaluating approaches to implementing

Select one:

- ☐ a. Deadlock
- ☐ b. Starvation
- ☐ c. Synchronization
- ☒ d. All of the above



Your answer is incorrect.

The correct answer is: Synchronization

Question 4

Correct

Mark 0.35 out of 0.35

In a multiprogramming system, main memory is divided into multiple sections: one for the operating system (resident monitor, kernel) and one for the set of processes currently being executed.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 5

Correct

Mark 0.35 out of 0.35

In indirect addressing, as applied to message passing, messages are sent to a temporary shared data structure typically known as a mailbox.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 6

Correct

Mark 0.35 out of 0.35

In a memory system employing paging, the chunks of a process (called frames) can be assigned to available chunks of memory (called pages).

Select one:

- ☐ True
- ☒ False ✓

The correct answer is 'False'.

Question 7

Incorrect

Mark 0.00 out of 0.40

The concept of virtual memory is based on one or both of two basic techniques

Select one:

- ☒ a. Overlaying and Relocation
 - a. Overlaying and relocation
 - a. Overlaying and relocation
 - a. Overlaying and relocation
 - a. Overlaying and relocation



- ☐ b. Segmentation and Paging
- ☐ c. Segmentation and Partitioning
- ☐ d. None of the above

Your answer is incorrect.

The correct answer is: Segmentation and Paging

Question 8

Correct

Mark 0.35 out of 0.35

All deadlocks involve conflicting needs for resources by two or more processes.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 9

Incorrect

Mark 0.00 out of 0.35

In the Highest Response Ratio Next (HRRN) scheduling policy, longer jobs are favored, because they yield a larger ratio from the smaller denominator in the equation.

Select one:

- ☒ True ✗
- ☐ False

The correct answer is 'False'.

Question 10

Incorrect

Mark 0.00 out of 0.35

In Dynamic Scheduling, the operating system leaves all scheduling decisions to the application.

Select one:

- ☒ True ✗
- ☐ False

The correct answer is 'False'.

Question 11

Incorrect

Mark 0.00 out of 0.35

In the Dynamic Partitioning technique of memory management, the best-fit placement algorithm is usually the best performer of the available algorithms.

Select one:

- ☒ True ✖
- ☐ False

The correct answer is 'False'.

Question 12

Correct

Mark 0.35 out of 0.35

In the first computers, users interacted directly with the hardware and operating systems did not exist.

Select one:

- ☒ True ✔
- ☐ False

The correct answer is 'True'.

Question 13

Correct

Mark 0.40 out of 0.40

One approach to deadlock avoidance is called

Select one:

- ☐ a. Process Termination Denial
- ☒ b. Resource Allocation Denial ✔
- ☐ c. Hold and wait
- ☐ d. None of the above

Your answer is correct.

The correct answer is: Resource Allocation Denial

Question 14

Correct

Mark 0.35 out of 0.35

In the Dynamic Partitioning technique of memory management, compaction refers to shifting the processes into a contiguous block, resulting in all the free memory aggregated into in a single block.

Select one:

- ☒ True ✔
- ☐ False

The correct answer is 'True'.

Question 15

Correct

Mark 0.35 out of 0.35

The long-term scheduler is invoked whenever an event occurs that may lead to the suspension or preemption of the currently running process.

Select one:

- ☐ True
- ☒ False ✓

The correct answer is 'False'.

Question 16

Correct

Mark 0.35 out of 0.35

Although deadlock can potentially exist without it, the condition known as Circular Wait is required for deadlock to actually take place

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 17

Incorrect

Mark 0.00 out of 0.40

A problem with the largely obsolete Fixed Partitioning memory management technique is that of:

Select one:

- ☐ a. Allowing only a fixed number of Processes
- ☐ b. Inefficient use of memory
- ☒ c. Internal Fragmentation ✗
- ☐ d. All of the above

Your answer is incorrect.

The correct answer is: All of the above

Question 18

Incorrect

Mark 0.00 out of 0.40

One difficulty with the Shortest Process Next (SPN) scheduling technique is:

Select one:

- ☐ a. The need to know or estimate required processing times for each process
- ☒ b. The starvation of longer processes ✗
- ☐ c. The lack of preemption
- ☐ d. All of the above

Your answer is incorrect.

The correct answer is: All of the above

Question 19

Correct

Mark 0.35 out of 0.35

In a multithreaded environment, a process is defined as the unit of resource allocation and a unit of protection.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 20

Incorrect

Mark 0.00 out of 0.40

The Reader/Writer problem requires that certain conditions be satisfied, such as

Select one:

- ☒ a. Readers may read from the file while writers are writing to it

✗

- ☐ b. Multiple writers may write to the file simultaneously

- ☐ c. Any number of readers may simultaneously read from the file

- ☐ d. None of the above

Your answer is incorrect.

The correct answer is: Any number of readers may simultaneously read from the file

Question 21

Incorrect

Mark 0.00 out of 0.40

Typically, the swapping-in function for processes is based on the need to manage:

Select one:

- ☒ a. Process priorities ✗
- ☐ b. Virtual Memory
- ☐ c. The degree of multiprogramming
- ☐ d. None of the above

Your answer is incorrect.

The correct answer is: The degree of multiprogramming

Question 22

Incorrect

Mark 0.00 out of 0.40

In the Five-State Process Model, the following represents a valid state transition

Select one:

- ☐ a. Running to Blocked
- ☐ b. New to Running
- ☒ c. New to Blocked
- ✖
- ☐ d. All of the above

Your answer is incorrect.

The correct answer is: Running to Blocked

Question 23

Incorrect

Mark 0.00 out of 0.40

Which of the following major line of computer system development created problems in timing and synchronization that contributed to the development of the concept of the process?

Select one:

- ☐ a. Multiprogramming batch operation systems
- ☐ b. Time sharing systems
- ☒ c. Real time transaction systems
- ✖
- ☐ d. All of the above

Your answer is incorrect.

The correct answer is: All of the above

Question 24

Correct

Mark 0.35 out of 0.35

The Shortest Remaining Time (SRT) scheduling policy is a preemptive version of the Shortest Process Next (SPN) scheduling policy.

Select one:

- ☒ True ✔
- ☐ False

The correct answer is 'True'.

Question 25

Correct

Mark 0.35 out of 0.35

The problem of internal fragmentation can be lessened in a system employing a fixed-partition memory management scheme by using unequal size partitions.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 26

Correct

Mark 0.40 out of 0.40

The scheduling strategy where each process in the queue is given a certain amount of time, in turn, to execute and then returned to the queue, unless blocked is referred to as

Select one:

- ☐ a. Prioritization
- ☒ b. Round-Robin ✓
- ☐ c. LIFO
- ☐ d. All of the above

Your answer is correct.

The correct answer is: Round-Robin

Question 27

Correct

Mark 0.35 out of 0.35

The Shortest Process Next (SPN) scheduling policy is often used for time-sharing and transaction processing environments because of the lack of preemption.

Select one:

- ☐ True
- ☒ False ✓

The correct answer is 'False'.

Question 28

Correct

Mark 0.40 out of 0.40

Which of the following scheduling policies allow the O/S to interrupt the currently running process and move it to the Ready state?

Select one:

- ☒ a. Preemptive ✓
- ☐ b. Non-Preemptive
- ☐ c. First-come-first-served
- ☐ d. None of the above

Your answer is correct.

The correct answer is: Preemptive

Question 29

Correct

Mark 0.40 out of 0.40

A condition of policy that must be present for a deadlock to be possible is

Select one:

- ☐ a. Mutual exclusion
- ☐ b. Hold and wait
- ☐ c. No preemption
- ☒ d. All of the above



Your answer is correct.

The correct answer is: All of the above

Question 30

Correct

Mark 0.40 out of 0.40

In the Dynamic Partitioning technique of **memory management**, the placement algorithm that chooses the block that is closest in size to the request is called:

Select one:

- ☒ a. Best-fit ✓
- ☐ b. First-Fit
- ☐ c. Next-Fit
- ☐ d. All of the above

Your answer is correct.

The correct answer is: Best-fit

Question 31

Incorrect

Mark 0.00 out of 0.35

The primary difference between the Two-State Process Model and the Five-State Process Model is that the latter splits the Running state into two new states: Ready and Blocked.

Select one:

- ☒ True ✗
- ☐ False

The correct answer is 'False'.

Question 32

Correct

Mark 0.35 out of 0.35

The basic unit of dispatching in an operating system is usually referred to as a thread or lightweight process.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.


Question 33

Incorrect

Mark 0.00 out of 0.40

The problem of internal fragmentation can be lessened in systems employing a fixed-partition memory management scheme by using:

Select one:

- ☐ a. Random size partitions
- ☒ b. Equal size partitions
- 
- ☐ c. Unequal size partitions
- ☐ d. None of the Above

Your answer is incorrect.

The correct answer is: Unequal size partitions

Question 34

Correct

Mark 0.40 out of 0.40

Which of the following scheduling policies require prior knowledge or estimation of process length:

Select one:

- ☐ a. Shortest Remaining Time (SRT)
- ☐ b. Shortest Process Next (SPN)
- ☐ c. Highest Response Ratio Next (HRRN)
- ☒ d. All of the above ✓

Your answer is correct.

The correct answer is: All of the above

Question 35

Incorrect

Mark 0.00 out of 0.40

A semaphore that does not specify the order in which processes are removed from the queue is called a:

Select one:

- ☐ a. Weak semaphore
- ☐ b. Strong semaphore
- ☒ c. Binary semaphore
- ✖
- ☐ d. None of the above

Your answer is incorrect.

The correct answer is: Weak semaphore

Question 36

Incorrect

Mark 0.00 out of 0.35

In a pure User-Level Thread (ULT) facility, all of the work of thread management is done by the application, but the kernel is aware of the existence of threads.

Select one:

- ☒ True ✖
- ☐ False

The correct answer is 'False'.

Question 37

Incorrect

Mark 0.00 out of 0.40

A conservative strategy for dealing with deadlocks that involves limiting access to resources and imposing restrictions on processes is called:

Select one:

- ☐ a. Deadlock Prevention
- ☐ b. Deadlock Avoidance
- ☒ c. Deadlock Detection ✖
- ☐ d. None of the above

Your answer is incorrect.

The correct answer is: Deadlock Prevention

Question 38

Correct

Mark 0.40 out of 0.40

In the Dynamic Partitioning technique of memory management, the phenomenon that results in unused blocks of memory outside of existing partitions is called:

Select one:

- ☐ a. Internal fragmentation
- ☒ b. External fragmentation ✓
- ☐ c. Compaction
- ☐ d. None of the above

Your answer is correct.

The correct answer is: External fragmentation

Question 39

Correct

Mark 0.40 out of 0.40

The page table for each process maintains:

Select one:

- ☒ a. The frame location for each page of the process ✓
- ☐ b. The page location for each frame of the process
- ☐ c. The physical memory location of the process
- ☐ d. None of the above

Your answer is correct.

The correct answer is: The frame location for each page of the process

Question 40

Correct

Mark 0.40 out of 0.40

Which of the following is true regarding the relationship between processes and threads

Select one:

- ☒ a. It takes far less time to create a new thread in an existing process than to create a new process ✓
- ☐ b. It takes less time to terminate a process than a thread
- ☐ c. It takes less time to switch between two different processes than to switch between two threads within the same process
- ☐ d. All of the above

Your answer is correct.

The correct answer is: It takes far less time to create a new thread in an existing process than to create a new process

Question 41

Incorrect

Mark 0.00 out of 0.35

Weak semaphores guarantee freedom from starvation, but strong semaphores do not.

Select one:

- ☒ True ✖
- ☐ False

The correct answer is 'False'.

Question 42

Correct

Mark 0.35 out of 0.35

The Dining Philosopher's Problem illustrates basic problems in deadlock and starvation.

Select one:

- ☒ True ✔
- ☐ False

The correct answer is 'True'.

Question 43

Correct

Mark 0.40 out of 0.40

Operating systems must evolve over time because

Select one:

- ☐ a. Hardware must be replaced when it fails
- ☐ b. Users will only purchase software that has a current copyright date
- ☒ c. New hardware is designed and implemented in the computer system ✔
- ☐ d. All of the above

Your answer is correct.

The correct answer is: New hardware is designed and implemented in the computer system

Question 44

Correct

Mark 0.35 out of 0.35

The principal function of the processor is to execute machine instructions residing in main memory.

Select one:

- ☒ True ✔
- ☐ False

The correct answer is 'True'.

Question 45

Correct

Mark 0.35 out of 0.35

Scheduling affects the performance of a system because it determines which processes will wait and which will progress.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 46

Incorrect

Mark 0.00 out of 0.40

The following requirement must be met by any facility or capability that is to provide support for mutual exclusion

Select one:

- ☐ a. Only one process at a time can be allowed into a critical code section
- ☒ b. A process remains in its critical code section for a finite time only
- ✗
- ☐ c. No assumptions can be made about relative process speeds
- ☐ d. All of the above

Your answer is incorrect.

The correct answer is: All of the above

Question 47

Correct

Mark 0.35 out of 0.35

A reusable resource is one that can be safely used by only one process at a time and is not depleted by that use.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 48

Incorrect

Mark 0.00 out of 0.40

A direct method of deadlock prevention is to prevent the occurrence of:

Select one:

- ☒ a. Mutual exclusion ✗
- ☐ b. Circular wait
- ☐ c. All of the above
- ☐ d. Hold and wait

Your answer is incorrect.

The correct answer is: Circular wait

Question 49

Incorrect

Mark 0.00 out of 0.35

Deadlock can be defined as the periodic blocking of a set of processes that either compete for system resources or communicate with each other.

Select one:

- ☒ True ✖
- ☐ False

The correct answer is 'False'.

Question 50

Correct

Mark 0.35 out of 0.35

Distributed processing can be defined as the management of multiple processes executing on multiple, distributed computer systems.

Select one:

- ☒ True ✔
- ☐ False

The correct answer is 'True'.

Question 51

Incorrect

Mark 0.00 out of 0.35

The concept of thread synchronization is required in multithreaded systems because threads of a single process share the process's process control block (PCB).

Select one:

- ☒ True ✖
- ☐ False

The correct answer is 'False'.

Question 52

Incorrect

Mark 0.00 out of 0.35

In the Resource Allocation Denial approach to Deadlock Avoidance, a safe state is defined as one in which all potential process sequences do not result in a deadlock.

Select one:

- ☒ True ✖
- ☐ False

The correct answer is 'False'.

Question 53

Correct

Mark 0.35 out of 0.35

A major problem with the largely obsolete Fixed Partitioning memory management technique is that of external fragmentation.

Select one:

- ☐ True
- ☒ False ✔

The correct answer is 'False'.

Question 54

Correct

Mark 0.35 out of 0.35

In a system in which many processors are available, the primary concern shifts from ensuring maximum processor usage to providing the best average performance to all applications.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 55

Correct

Mark 0.35 out of 0.35

Uniprogramming typically provides better utilization of system resources than multiprogramming.

Select one:

- ☐ True
- ☒ False ✓

The correct answer is 'False'.

Question 56

Correct

Mark 0.40 out of 0.40

The basic Two-State Process Model defines two possible states for a process in relationship to the processor

Select one:

- ☐ a. Running and Executing
- ☒ b. Running and Not Running ✓
- ☐ c. Executing and Waiting
- ☐ d. None of the above

Your answer is correct.

The correct answer is: Running and Not Running

Question 57

Incorrect

Mark 0.00 out of 0.35

In the Dynamic Partitioning technique of memory management, the first-fit placement algorithm scans memory from the location of the last placement and chooses the first available block it finds that satisfies the request.

Select one:

- ☒ True ✗
- ☐ False

The correct answer is 'False'.

Question 58

Correct

Mark 0.40 out of 0.40

A typical way to overcome starvation of lower-priority processes in a priority-based scheduling system is to:

Select one:

- ☐ a. Change a process priority randomly
- ☒ b. Change a process priority with its age ✓
- ☐ c. Round-robin cycling of processes in a priority queue

Round-robin cycling of processes in a priority queue

- ☐ d. All of the Above

Your answer is correct.

The correct answer is: Change a process priority with its age

Question 59

Correct

Mark 0.35 out of 0.35

Round Robin is a scheduling technique is also known as time slicing, because each process is given a slice of time before being preempted.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 60

Correct

Mark 0.35 out of 0.35

The main objective of short-term scheduling is to allocate processor time in such a way as to optimize one or more aspects of system behavior.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 61

Correct

Mark 0.35 out of 0.35

The concept of virtual memory is based on one or both of two basic techniques: segmentation and paging.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 62

Correct

Mark 0.35 out of 0.35

Message passing provides both synchronization and communication, which are fundamental requirements for interacting processes.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 63

Correct

Mark 0.35 out of 0.35

In a uniprocessor machine, concurrent processes cannot be overlapped; they can only be interleaved.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 64

Correct

Mark 0.40 out of 0.40

A task that, unless it meets its deadline may cause undesirable damage or a fatal error to the system, is called a(n):

Select one:

- ☒ a. Hard real-time task ✓
- ☐ b. Soft real-time task
- ☐ c. Aperiodic task
- ☐ d. None of the above

Your answer is correct.

The correct answer is: Hard real-time task

Question 65

Correct

Mark 0.35 out of 0.35

The principal responsibility of the operating system is to control the execution of processes

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 66

Correct

Mark 0.40 out of 0.40

In a Process Model that implements two suspend states, a valid state transition is represented by

Select one:

- ☐ a. Ready/Suspend to Ready
- ☐ b. Running to Ready/Suspend
- ☐ c. Ready to Ready/Suspend
- ☒ d. All of the above



Your answer is correct.

The correct answer is: All of the above

Question 67

Incorrect

Mark 0.00 out of 0.40

The principle objective of a time sharing, multiprogramming system is to

Select one:

- ☒ a. Maximize response time
- ☐ b. Maximize processor use
- ☐ c. Provide exclusive access to hardware
- ☐ d. None of the above



Your answer is incorrect.

The correct answer is: None of the above

Question 68

Correct

Mark 0.40 out of 0.40

In the Dynamic Partitioning technique of memory management, the placement algorithm that scans memory from the location of the last placement and chooses the next available block that large enough to satisfy the request is called:

Select one:

- ☐ a. Best-Fit
- ☐ b. First-Fit
- ☒ c. Next-Fit ✓
- ☐ d. All of the above

Your answer is correct.

The correct answer is: Next-Fit

Question 69

Correct

Mark 0.35 out of 0.35

One of the driving forces in operating system evolution is advancement in the underlying hardware technology.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 70

Incorrect

Mark 0.00 out of 0.35

The operating system typically runs in parallel with application programs, on it's own special O/S processor.

Select one:

- ☒ True ✗
- ☐ False

The correct answer is 'False'.

Question 71

Incorrect

Mark 0.00 out of 0.40

Concurrency plays a major part in which of the following specific contexts

Select one:

- ☒ a. Multiple applications ✗
- ☐ b. Structured applications
- ☐ c. O/S structure
- ☐ d. All of the above

Your answer is incorrect.

The correct answer is: All of the above


Question 72

Correct

Mark 0.40 out of 0.40

In a system employing message passing, when a message is sent to a shared temporary data structure, this general approach is known as

Select one:

- ☐ a. Direct addressing
- ☒ b. Indirect addressing
- 
- ☐ c. Blocking
- ☐ d. None of the above

Your answer is correct.

The correct answer is: Indirect addressing


Question 73

Correct

Mark 0.40 out of 0.40

In order to implement mutual exclusion on a critical resource for competing processes, only one program at a time should be allowed

Select one:

- ☒ a. In the critical section of the program
- 
- ☐ b. To perform message passing
- ☐ c. To Exhibit cooperation
- ☐ d. None of the above

Your answer is correct.

The correct answer is: In the critical section of the program


Question 74

Incorrect

Mark 0.00 out of 0.35

The short-term scheduler may limit the degree of multiprogramming to provide satisfactory service to the current set of processes

Select one:

- ☒ True 
- ☐ False

The correct answer is 'False'.

Question 75

Incorrect

Mark 0.00 out of 0.40

A primary objective of an operating system is

Select one:

- ☐ a. Convenience
- ☒ b. Efficiency ✖
- ☐ c. Ability to Evolve
- ☐ d. All of the above

Your answer is incorrect.

The correct answer is: All of the above

Question 76

Incorrect

Mark 0.00 out of 0.35

One problem with a pure priority scheduling scheme is that lower-priority processes may suffer deadlock

Select one:

- ☒ True ✖
- ☐ False

The correct answer is 'False'.

Question 77

Correct

Mark 0.35 out of 0.35

One of the most common approaches for recovery from deadlocked processes is to abort all deadlocked processes.

Select one:

- ☒ True ✔
- ☐ False

The correct answer is 'True'.

Question 78

Correct

Mark 0.35 out of 0.35

Starvation refers to the situation where competing processes are denied access to a resource due to scheduling problems.

Select one:

- ☒ True ✔
- ☐ False

The correct answer is 'True'.

Question 79

Correct

Mark 0.40 out of 0.40

The permanent blocking of a set of processes that either compete for system resources or communicate with each other is called

Select one:

- ☐ a. Starvation
- ☒ b. Deadlock
- ☐ c. Prioritization
- ☐ d. All of the above

Your answer is correct.

The correct answer is: Deadlock

Question 80

Incorrect

Mark 0.00 out of 0.35

Concurrency issues are a concern on multiprocessor systems, but do not impact uniprocessor systems.

Select one:

- ☒ True ✖
- ☐ False

The correct answer is 'False'.

Question 81

Incorrect

Mark 0.00 out of 0.35

First-come-first-served (FCFS) is a simple scheduling policy that tends to favor I/O-bound processes over processor bound processes.

Select one:

- ☒ True ✖
- ☐ False

The correct answer is 'False'.

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