operating-system-questions-answers

1. What is an operating system?
a) collection of programs that manages hardware resources
b) system service provider to the application programs
c) interface between the hardware and application programs
d) all of the mentioned

Answer: d
Explanation: An Operating System acts as an intermediary between user/user applications/application programs and hardware. It is a program that manages hardware resources. It provides services to application programs.

2. To access the services of operating system, the interface is provided by the _____
a) System calls
b) API
c) Library
d) Assembly instructions

Answer: a
Explanation: To access services of the Operating System an interface is provided by the System Calls. Generally, these are functions written in C and C++. Open, Close, Read, Write are some of most prominently used system calls.

3. Which one of the following is not true?
a) kernel is the program that constitutes the central core of the operating system
b) kernel is the first part of operating system to load into memory during booting
c) kernel is made of various modules which can not be loaded in running operating system
d) kernel remains in the memory during the entire computer session

Answer: c
Explanation: Kernel is the first program which is loaded in memory when OS is loading as well as it remains in memory till OS is running. Kernel is the core part of the OS which is responsible for managing resources, allowing multiple processes to use the resources and provide services to various processes. Kernel modules can be loaded and unloaded in run-time i.e. in running OS.

4. Which one of the following error will be handle by the operating system?
a) power failure
b) lack of paper in printer
c) connection failure in the network
d) all of the mentioned

Answer: d
Explanation: All the mentioned errors are handled by OS. The OS is continuously monitoring all of its resources. Also, the OS is constantly detecting and correcting errors.

5. What is the main function of the command interpreter?
a) to get and execute the next user-specified command
b) to provide the interface between the API and application program
c) to handle the files in operating system
d) none of the mentioned

Answer: a
Explanation: The main function of command interpreter is to get and execute the next user-specified command. Command Interpreter checks for valid command and then runs that command else it will throw an error.

6. In Operating Systems, which of the following is/are CPU scheduling algorithms?
a) Round Robin
b) Shortest Job First

c) Priority
d) All of the mentioned

Answer: d
Explanation: In Operating Systems, CPU scheduling algorithms are:
i) First Come First Served scheduling
ii) Shortest Job First scheduling
iii) Priority scheduling
iv) Round Robin scheduling
v) Multilevel Queue scheduling
vi) Multilevel Feedback Queue scheduling
All of these scheduling algorithms have their own advantages and disadvantages.

7. If a process fails, most operating system write the error information to a _____
a) log file
b) another running process
c) new file
d) none of the mentioned

Answer: a
Explanation: If a process fails, most operating systems write the error information to a log file. Log file is examined by the debugger, to find out what is the actual cause of that particular problem. Log file is useful for system programmers for correcting errors.

8. Which facility dynamically adds probes to a running system, both in user processes and in the kernel?
a) DTrace
b) DLocate
c) DMap
d) DAdd

Answer: a
Explanation: A facility that dynamically adds probes to a running system, both in user process and in the kernel is called DTrace. This is very much useful in troubleshooting kernels in real-time.

9. Which one of the following is not a real time operating system?
a) VxWorks
b) QNX
c) RTLinux
d) Palm OS

Answer: d
Explanation: VxWorks, QNX & RTLinux are real-time operating systems. Palm OS is a mobile operating system. Palm OS is developed for Personal Digital Assistants (PDAs).

10. The OS X has _____
a) monolithic kernel
b) hybrid kernel
c) microkernel
d) monolithic kernel with modules

Answer: b
Explanation: OS X has a hybrid kernel. Hybrid kernel is a combination of two different kernels. OS X is developed by Apple and originally it is known as Mac OS X.

1. The systems which allow only one process execution at a time, are called _____
a) uniprogramming systems
b) uniprocessing systems
c) unitasking systems

d) none of the mentioned

Answer: b
Explanation: Those systems which allows more than one process execution at a time, are called multiprogramming systems. Uniprocessing means only one processor.

2. In operating system, each process has its own _____
a) address space and global variables
b) open files
c) pending alarms, signals and signal handlers
d) all of the mentioned

Answer: d
Explanation: In Operating Systems, each process has its own address space which contains code, data, stack and heap segments or sections. Each process also has a list of files which is opened by the process as well as all pending alarms, signals and various signal handlers.

3. In Unix, Which system call creates the new process?
a) fork
b) create
c) new
d) none of the mentioned

Answer: a
Explanation: In UNIX, a new process is created by fork() system call. fork() system call returns a process ID which is generally the process id of the child process created.

4. A process can be terminated due to _____
a) normal exit
b) fatal error
c) killed by another process
d) all of the mentioned

Answer: d
Explanation: A process can be terminated normally by completing its task or because of fatal error or killed by another process or forcefully killed by a user. When the process completes its task without any error then it exits normally. The process may exit abnormally because of the occurrence of fatal error while it is running. The process can be killed or terminated forcefully by another process.

5. What is the ready state of a process?
a) when process is scheduled to run after some execution
b) when process is unable to run until some task has been completed
c) when process is using the CPU
d) none of the mentioned

Answer: a
Explanation: Ready state of the process means process has all necessary resources which are required for execution of that process when CPU is allocated. Process is ready for execution but waiting for the CPU to be allocated.

6. What is interprocess communication?
a) communication within the process
b) communication between two process
c) communication between two threads of same process
d) none of the mentioned

Answer: b
Explanation: Interprocess Communication (IPC) is a communication mechanism that allows processes to communicate with each other and synchronise their actions without using the same address space. IPC can be achieved using shared

memory and message passing.

7. A set of processes is deadlock if _____
a) each process is blocked and will remain so forever
b) each process is terminated
c) all processes are trying to kill each other
d) none of the mentioned

Answer: a
Explanation: Deadlock is a situation which occurs because process A is waiting for one resource and holds another resource (blocking resource). At the same time another process B demands blocking a resource as it is already held by a process A, process B is waiting state unless and until process A releases occupied resource.

8. A process stack does not contain _____
a) Function parameters
b) Local variables
c) Return addresses
d) PID of child process

Answer: d
Explanation: Process stack contains Function parameters, Local variables and Return address. It does not contain the PID of child process.

9. Which system call can be used by a parent process to determine the termination of child process?
a) wait
b) exit
c) fork
d) get

Answer: a
Explanation: wait() system call is used by the parent process to determine termination of child process. The parent process uses wait() system call and gets the exit status of the child process as well as the pid of the child process which is terminated.

10. The address of the next instruction to be executed by the current process is provided by the _____
a) CPU registers
b) Program counter
c) Process stack
d) Pipe

Answer: b
Explanation: The address of the next instruction to be executed by the current process is provided by the Program Counter. After every instruction is executed, the Program Counter is incremented by 1 i.e. address of the next instruction to be executed. CPU fetches instruction from the address denoted by Program Counter and execute it.

1. A Process Control Block(PCB) does not contain which of the following?
a) Code
b) Stack
c) Bootstrap program
d) Data

Answer: c
Explanation: Process Control Block (PCB) contains information related to a process such as Process State, Program Counter, CPU Register, etc. Process Control Block is also known as Task Control Block. Bootstrap program is a program which runs initially when the system or computer is booted or rebooted.

2. The number of processes completed per unit time is known as _____
a) Output

b) Throughput
c) Efficiency
d) Capacity

Answer: b
Explanation: The number of processes completed per unit time is known as Throughput. Suppose there are 4 processes A, B, C & D they are taking 1, 3, 4 & 7 units of time respectively for their executions. For 10 units of time, throughput is high if process A, B & C are running first as 3 processes can execute. If process C runs first then throughput is low as maximum only 2 processes can execute. Throughput is low for processes which take a long time for execution. Throughput is high for processes which take a short time for execution.

3. The state of a process is defined by _____
a) the final activity of the process
b) the activity just executed by the process
c) the activity to next be executed by the process
d) the current activity of the process

Answer: d
Explanation: The state of a process is defined by the current activity of the process. A process state changes when the process executes. The process states are as New, Ready, Running, Wait, Terminated.

4. Which of the following is not the state of a process?
a) New
b) Old
c) Waiting
d) Running

Answer: b
Explanation: There is no process state such as old. When a process is created then the process is in New state. When the process gets the CPU for its execution then the process is in Running state. When the process is waiting for an external event then the process is in a Waiting state.

5. What is a Process Control Block?
a) Process type variable
b) Data Structure
c) A secondary storage section
d) A Block in memory

Answer: b
Explanation: A Process Control Block (PCB) is a data structure. It contains information related to a process such as Process State, Program Counter, CPU Register, etc. Process Control Block is also known as Task Control Block.

6. The entry of all the PCBs of the current processes is in _____
a) Process Register
b) Program Counter
c) Process Table
d) Process Unit

Answer: c
Explanation: The entry of all the PCBs of the current processes is in Process Table. The Process Table has the status of each and every process that is created in OS along with their PIDs.

7. What is the degree of multiprogramming?
a) the number of processes executed per unit time
b) the number of processes in the ready queue
c) the number of processes in the I/O queue
d) the number of processes in memory

Answer: d
Explanation: Multiprogramming means the number of processes are in the ready states. To increase utilization of CPU, Multiprogramming is one of the most important abilities of OS. Generally, a single process cannot use CPU or I/O at all time, whenever CPU or I/O is available another process can use it. By doing this CPU utilization is increased.

8. A single thread of control allows the process to perform _____
a) only one task at a time
b) multiple tasks at a time
c) only two tasks at a time
d) all of the mentioned

Answer: a
Explanation: A single thread of control allows the process to perform only one task at a time. In the case of multi-core, multiple threads can be run simultaneously and can perform multiple tasks at a time.

9. What is the objective of multiprogramming?
a) Have a process running at all time
b) Have multiple programs waiting in a queue ready to run
c) To increase CPU utilization
d) None of the mentioned

Answer: c
Explanation: The objective of multiprogramming is to increase CPU utilization. Generally, a single process cannot use CPU or I/O at all time, whenever CPU or I/O is available another process can use it. Multiprogramming offers this ability to OS by keeping multiple programs in a ready queue.

1. Which of the following do not belong to queues for processes?
a) Job Queue
b) PCB queue
c) Device Queue
d) Ready Queue

Answer: b
Explanation: PCB queue does not belong to queues for processes. PCB is a process control block which contains information related to process. Each process is represented by PCB.

2. When the process issues an I/O request _____
a) It is placed in an I/O queue
b) It is placed in a waiting queue
c) It is placed in the ready queue
d) It is placed in the Job queue

Answer: a
Explanation: When the process issues an I/O request it is placed in an I/O queue. I/O is a resource and it should be used effectively and every process should get access to it. There might be multiple processes which requested for I/O. Depending on scheduling algorithm I/O is allocated to any particular process and after completing I/O operation, I/O access is returned to the OS.

3. What will happen when a process terminates?
a) It is removed from all queues
b) It is removed from all, but the job queue
c) Its process control block is de-allocated
d) Its process control block is never de-allocated

Answer: a
Explanation: When a process terminates, it removes from all queues. All allocated resources to that particular process are deallocated and all those resources are returned back to OS.

4. What is a long-term scheduler?
a) It selects processes which have to be brought into the ready queue
b) It selects processes which have to be executed next and allocates CPU
c) It selects processes which heave to remove from memory by swapping
d) None of the mentioned

Answer: a
Explanation: A long-term scheduler selects processes which have to be brought into the ready queue. When processes enter the system, they are put in the job queue. Long-term scheduler selects processes from the job queue and puts them in the ready queue. It is also known as Job Scheduler.

5. If all processes I/O bound, the ready queue will almost always be _____ and the Short term Scheduler will have a _____ to do.
a) full, little
b) full, lot
c) empty, little
d) empty, lot

Answer: c
Explanation: If all processes are I/O bound, the ready queue will almost empty and the short-term scheduler will have a little to do. I/O bound processes spend more time doing I/O than computation.

6. What is a medium-term scheduler?
a) It selects which process has to be brought into the ready queue
b) It selects which process has to be executed next and allocates CPU
c) It selects which process to remove from memory by swapping
d) None of the mentioned

Answer: c
Explanation: A medium-term scheduler selects which process to remove from memory by swapping. The medium-term scheduler swapped out the process and later swapped in. Swapping helps to free up memory.

7. What is a short-term scheduler?
a) It selects which process has to be brought into the ready queue
b) It selects which process has to be executed next and allocates CPU
c) It selects which process to remove from memory by swapping
d) None of the mentioned

Answer: b
Explanation: A short-term scheduler selects a process which has to be executed next and allocates CPU. Short-term scheduler selects a process from the ready queue. It selects processes frequently.

8. The primary distinction between the short term scheduler and the long term scheduler is _____
a) The length of their queues
b) The type of processes they schedule
c) The frequency of their execution
d) None of the mentioned

Answer: c
Explanation: The primary distinction between the short-term scheduler and the long-term scheduler is the frequency of their execution. The short-term scheduler executes frequently while the long-term scheduler executes much less frequently.

9. The only state transition that is initiated by the user process itself is _____
a) block
b) wakeup
c) dispatch
d) none of the mentioned

Answer: a
Explanation: The only state transition that is initiated by the user process itself is block. Whenever a user process initiates an I/O request it goes into block state unless and until the I/O request is not completed.

10. In a time-sharing operating system, when the time slot given to a process is completed, the process goes from the running state to the _____
a) Blocked state
b) Ready state
c) Suspended state
d) Terminated state

Answer: b
Explanation: In a time-sharing operating system, when the time slot given to a process is completed, the process goes from the running state to the Ready State. In a time-sharing operating system unit time is defined for sharing CPU, it is called a time quantum or time slice. If a process takes less than 1 time quantum, then the process itself releases the CPU.

11. In a multiprogramming environment _____
a) the processor executes more than one process at a time
b) the programs are developed by more than one person
c) more than one process resides in the memory
d) a single user can execute many programs at the same time

Answer: c
Explanation: In a multiprogramming environment more than one process resides in the memory. Whenever a CPU is available, one process amongst all present in memory gets the CPU for execution. Multiprogramming increases CPU utilization.

12. Suppose that a process is in "Blocked" state waiting for some I/O service. When the service is completed, it goes to the _____
a) Running state
b) Ready state
c) Suspended state
d) Terminated state

Answer: b
Explanation: Suppose that a process is in "Blocked" state waiting for some I/O service. When the service is completed, it goes to the ready state. Process never goes directly to the running state from the waiting state. Only processes which are in ready state go to the running state whenever CPU allocated by operating system.

13. The context of a process in the PCB of a process does not contain _____
a) the value of the CPU registers
b) the process state
c) memory-management information
d) context switch time

Answer: d
Explanation: The context of a process in the PCB of a process does not contain context switch time. When switching CPU from one process to another, the current context of the process needs to be saved. It includes values of the CPU registers, process states, memory-management information.

14. Which of the following need not necessarily be saved on a context switch between processes?
a) General purpose registers
b) Translation lookaside buffer
c) Program counter
d) All of the mentioned

Answer: b
Explanation: Translation Look-aside Buffer (TLB) need not necessarily be saved on a context switch between processes.

A special, small, fast-lookup hardware cache is called Translation Look-aside Buffer. TLB used to reduce memory access time.

15. Which of the following does not interrupt a running process?
a) A device
b) Timer
c) Scheduler process
d) Power failure

Answer: c
Explanation: Scheduler process does not interrupt a running process. Scheduler process selects an available process from a pool of available processes and allocates CPU to it.

1. Which process can be affected by other processes executing in the system?
a) cooperating process
b) child process
c) parent process
d) init process

Answer: a
Explanation: A cooperating process can be affected by other processes executing in the system. Also it can affect other processes executing in the system. A process shares data with other processes, such a process is known as a cooperating process.

2. When several processes access the same data concurrently and the outcome of the execution depends on the particular order in which the access takes place is called _____
a) dynamic condition
b) race condition
c) essential condition
d) critical condition

Answer: b
Explanation: When several processes access the same data concurrently and the outcome of the execution depends on the particular order in which access takes place is called race condition.

3. If a process is executing in its critical section, then no other processes can be executing in their critical section. What is this condition called?
a) mutual exclusion
b) critical exclusion
c) synchronous exclusion
d) asynchronous exclusion

Answer: a
Explanation: If a process is executing in its critical section, then no other processes can be executed in their critical section. This condition is called Mutual Exclusion. Critical section of the process is shared between multiple processes. If this section is executed by more than one or all of them concurrently then the outcome of this is not as per desired outcome. For this reason the critical section of the process should not be executed concurrently.

4. Which one of the following is a synchronization tool?
a) thread
b) pipe
c) semaphore
d) socket

Answer: c
Explanation: Semaphore is a synchronization tool. Semaphore is a mechanism which synchronizes or controls access of threads on critical resources. There are two types of semaphores i) Binary Semaphore ii) Counting Semaphore.

5. A semaphore is a shared integer variable _____
a) that can not drop below zero
b) that can not be more than zero
c) that can not drop below one
d) that can not be more than one

Answer: a
Explanation: A semaphore is a shared integer variable that can not drop below zero. In binary semaphore, if the value of the semaphore variable is zero that means there is a process that uses a critical resource and no other process can access the same critical resource until it is released. In Counting semaphore, if the value of the semaphore variable is zero that means there is no resource available.

6. Mutual exclusion can be provided by the _____
a) mutex locks
b) binary semaphores
c) both mutex locks and binary semaphores
d) none of the mentioned

Answer: c
Explanation: Mutual exclusion can be provided by both mutex locks and binary semaphore. Mutex is a short form of ***Mut****ual* ***Ex****clusion. Binary semaphore also provides a mechanism for mutual exclusion. Binary semaphore behaves similar to mutex locks.*

7. When high priority task is indirectly preempted by medium priority task effectively inverting the relative priority of the two tasks, the scenario is called _____
a) priority inversion
b) priority removal
c) priority exchange
d) priority modification

Answer: a
Explanation: When a high priority task is indirectly preempted by a medium priority task effectively inverting the relative priority of the two tasks, the scenario is called priority inversion.

8. Process synchronization can be done on _____
a) hardware level
b) software level
c) both hardware and software level
d) none of the mentioned

Answer: c
Explanation: Process synchronization can be done on both hardware and software level. Critical section problems can be resolved using hardware synchronisation. But this method is not simple for implementation so software synchronization is mostly used.

9. A monitor is a module that encapsulates _____
a) shared data structures
b) procedures that operate on shared data structure
c) synchronization between concurrent procedure invocation
d) all of the mentioned

Answer: d
Explanation: A monitor is a module that encapsulates shared data structures, procedures that operate on shared data structure, synchronization between concurrent procedure invocation.

10. To enable a process to wait within the monitor _____
a) a condition variable must be declared as condition
b) condition variables must be used as boolean objects

c) semaphore must be used
d) all of the mentioned

Answer: a
Explanation: To enable a process to wait within the monitor a condition variable must be declared as condition.

1. Restricting the child process to a subset of the parent's resources prevents any process from _____
a) overloading the system by using a lot of secondary storage
b) under-loading the system by very less CPU utilization
c) overloading the system by creating a lot of sub-processes
d) crashing the system by utilizing multiple resources

Answer: c
Explanation: Restricting the child process to a subset of the parent's resources prevents any process from overloading the system by creating a lot of sub-processes. A process creates a child process, child process requires certain resources to complete its task. A child process can demand required resources directly from the system, but by doing this system will be overloaded. So to avoid overloading of the system, the parent process shares its resources among children.

2. A parent process calling _____ system call will be suspended until children processes terminate.
a) wait
b) fork
c) exit
d) exec

Answer: a
Explanation: A parent process calling wait system call will be suspended until children processes terminate. A parameter is passed to wait system call which will obtain exit status of child as well as wait system call returns PID of terminated process.

3. Cascading termination refers to termination of all child processes if the parent process terminates _____
a) Normally
b) Abnormally
c) Normally or abnormally
d) None of the mentioned

Answer: c
Explanation: Cascading termination refers to termination of all child processes if the parent process terminates Normally or Abnormally. Some systems don't allow child processes to exist if the parent process has terminated. Cascading termination is normally initiated by the operating system.

4. With _____ only one process can execute at a time; meanwhile all other process are waiting for the processor. With _____ more than one process can be running simultaneously each on a different processor.
a) Multiprocessing, Multiprogramming
b) Multiprogramming, Uniprocessing
c) Multiprogramming, Multiprocessing
d) Uniprogramming, Multiprocessing

Answer: d
Explanation: With Uniprogramming only one process can execute at a time; meanwhile all other processes are waiting for the processor. With Multiprocessing more than one process can run simultaneously each on different processors. The Uniprogramming system has only one program inside the core while the Multiprocessing system has multiple processes inside multiple cores. The core is one which executes instructions and stores data locally into registers.

5. In UNIX, each process is identified by its _____
a) Process Control Block
b) Device Queue
c) Process Identifier
d) None of the mentioned

Answer: c
Explanation: In Unix, each process is identified by its Process Identifier or PID. The PID provides unique value to each process in the system so that each process can be identified uniquely.

6. In UNIX, the return value for the fork system call is _____ for the child process and _____ for the parent process.
a) A Negative integer, Zero
b) Zero, A Negative integer
c) Zero, A nonzero integer
d) A nonzero integer, Zero

Answer: c
Explanation: In Unix, the return value of the fork system call is Zero for the child process and Non-zero value for parent process. A fork system call returns the PID of a newly created (child) process to the parent and returns Zero to that newly created (child) process.

7. The child process can _____
a) be a duplicate of the parent process
b) never be a duplicate of the parent process
c) cannot have another program loaded into it
d) never have another program loaded into it

Answer: a
Explanation: The child process can be a duplicate of the parent process. The child process created by fork consists of a copy of the address space of the parent process.

8. The child process completes execution, but the parent keeps executing, then the child process is known as _____
a) Orphan
b) Zombie
c) Body
d) Dead

Answer: b
Explanation: The child process completes execution, but the parent keeps executing, then the child process is known as Zombie. When a child process terminates, its resources get deallocated but its entry in the Process Control Block (PCB) remains there until its parent calls wait system call.

1. What is Interprocess communication?
a) allows processes to communicate and synchronize their actions when using the same address space
b) allows processes to communicate and synchronize their actions
c) allows the processes to only synchronize their actions without communication
d) none of the mentioned

Answer: b
Explanation: Interprocess Communication allows processes to communicate and synchronize their actions. Interprocess Communication (IPC) mechanism is used by cooperating processes to exchange data and information.
There are two models of IPC:
→ Shared Memory
→ Message Passing

2. Message passing system allows processes to _____
a) communicate with each other without sharing the same address space
b) communicate with one another by resorting to shared data
c) share data
d) name the recipient or sender of the message

Answer: a
Explanation: Message Passing system allows processes to communicate with each other without sharing the same

address space.

3. Which of the following two operations are provided by the IPC facility?
a) write & delete message
b) delete & receive message
c) send & delete message
d) receive & send message

Answer: d
Explanation: Two operations provided by the IPC facility are receive and send messages. Exchange of data takes place in cooperating processes.

4. Messages sent by a process _____
a) have to be of a fixed size
b) have to be a variable size
c) can be fixed or variable sized
d) none of the mentioned

Answer: c
Explanation: Messages sent by a process can be fixed or variable size. If the message size of the process is fixed then system level implementation is straightforward but it makes the task of programming more difficult. If the message size of the process is variable then system level implementation is more complex but it makes the task of programming simpler.

5. The link between two processes P and Q to send and receive messages is called _____
a) communication link
b) message-passing link
c) synchronization link
d) all of the mentioned

Answer: a
Explanation: The link between two processes P and Q to send and receive messages is called communication link. Two processes P and Q want to communicate with each other; there should be a communication link that must exist between these two processes so that both processes can able to send and receive messages using that link.

6. Which of the following are TRUE for direct communication?
a) A communication link can be associated with N number of process(N = max. number of processes supported by system)
b) A communication link is associated with exactly two processes
c) Exactly N/2 links exist between each pair of processes(N = max. number of processes supported by system)
d) Exactly two link exists between each pair of processes

Answer: b
Explanation: For direct communication, a communication link is associated with exactly two processes. One communication link must exist between a pair of processes.

7. In indirect communication between processes P and Q _____
a) there is another process R to handle and pass on the messages between P and Q
b) there is another machine between the two processes to help communication
c) there is a mailbox to help communication between P and Q
d) none of the mentioned

Answer: c
Explanation: In indirect communication between processes P and Q there is a mailbox to help communication between P and Q. A mailbox can be viewed abstractly as an object into which messages can be placed by processes and from which messages can be removed.

8. In the non blocking send _____

a) the sending process keeps sending until the message is received
b) the sending process sends the message and resumes operation
c) the sending process keeps sending until it receives a message
d) none of the mentioned

Answer: b
Explanation: In the non blocking send, the sending process sends the message and resumes operation. Sending process doesn't care about reception. It is also known as asynchronous send.

9. In the Zero capacity queue _____
a) the queue can store at least one message
b) the sender blocks until the receiver receives the message
c) the sender keeps sending and the messages don't wait in the queue
d) none of the mentioned

Answer: b
Explanation: In the Zero capacity queue the sender blocks until the receiver receives the message. Zero capacity queue has maximum capacity of Zero; thus message queue does not have any waiting message in it.

10. The Zero Capacity queue _____
a) is referred to as a message system with buffering
b) is referred to as a message system with no buffering
c) is referred to as a link
d) none of the mentioned

Answer: b
Explanation: The Zero capacity queue is referred to as a message system with no buffering. Zero capacity queue has maximum capacity of Zero; thus message queue does not have any waiting message in it.

11. Bounded capacity and Unbounded capacity queues are referred to as _____
a) Programmed buffering
b) Automatic buffering
c) User defined buffering
d) No buffering

Answer: b
Explanation: Bounded capacity and Unbounded capacity queues are referred to as Automatic buffering. Buffer capacity of the Bounded capacity queue is finite length and buffer capacity of the Unbounded queue is infinite.

1. Remote Procedure Calls are used _____
a) for communication between two processes remotely different from each other on the same system
b) for communication between two processes on the same system
c) for communication between two processes on separate systems
d) none of the mentioned

Answer: c
Explanation: None.

2. To differentiate the many network services a system supports _____ are used.
a) Variables
b) Sockets
c) Ports
d) Service names

Answer: c
Explanation: None.

3. RPC provides a(an) _____ on the client-side, a separate one for each remote procedure.

a) stub
b) identifier
c) name
d) process identifier

Answer: a
Explanation: None.

4. What is stub?
a) transmits the message to the server where the server side stub receives the message and invokes procedure on the server side
b) packs the parameters into a form transmittable over the network
c) locates the port on the server
d) all of the mentioned

Answer: d
Explanation: None.

5. To resolve the problem of data representation on different systems RPCs define _____
a) machine dependent representation of data
b) machine representation of data
c) machine-independent representation of data
d) none of the mentioned

Answer: c
Explanation: None.

6. What is the full form of RMI?
a) Remote Memory Installation
b) Remote Memory Invocation
c) Remote Method Installation
d) Remote Method Invocation

Answer: d
Explanation: None.

7. The remote method invocation _____
a) allows a process to invoke memory on a remote object
b) allows a thread to invoke a method on a remote object
c) allows a thread to invoke memory on a remote object
d) allows a process to invoke a method on a remote object

Answer: b
Explanation: None.

8. A process that is based on IPC mechanism which executes on different systems and can communicate with other processes using message based communication, is called _____
a) Local Procedure Call
b) Inter Process Communication
c) Remote Procedure Call
d) Remote Machine Invocation

Answer: c
Explanation: None.

1. The initial program that is run when the computer is powered up is called _____
a) boot program
b) bootloader

c) initializer
d) bootstrap program

Answer: d
Explanation: None.

2. How does the software trigger an interrupt?
a) Sending signals to CPU through bus
b) Executing a special operation called system call
c) Executing a special program called system program
d) Executing a special program called interrupt trigger program

Answer: b
Explanation: None.

3. What is a trap/exception?
a) hardware generated interrupt caused by an error
b) software generated interrupt caused by an error
c) user generated interrupt caused by an error
d) none of the mentioned

Answer: b
Explanation: None.

4. What is an ISR?
a) Information Service Request
b) Interrupt Service Request
c) Interrupt Service Routine
d) Information Service Routine

Answer: c
Explanation: None.

5. What is an interrupt vector?
a) It is an address that is indexed to an interrupt handler
b) It is a unique device number that is indexed by an address
c) It is a unique identity given to an interrupt
d) None of the mentioned

Answer: a
Explanation: None.

6. DMA is used for _____
a) High speed devices(disks and communications network)
b) Low speed devices
c) Utilizing CPU cycles
d) All of the mentioned

Answer: a
Explanation: None.

7. In a memory mapped input/output _____
a) the CPU uses polling to watch the control bit constantly, looping to see if a device is ready
b) the CPU writes one data byte to the data register and sets a bit in control register to show that a byte is available
c) the CPU receives an interrupt when the device is ready for the next byte
d) the CPU runs a user written code and does accordingly

Answer: b

Explanation: None.

8. In a programmed input/output(PIO) _____
a) the CPU uses polling to watch the control bit constantly, looping to see if a device is ready
b) the CPU writes one data byte to the data register and sets a bit in control register to show that a byte is available
c) the CPU receives an interrupt when the device is ready for the next byte
d) the CPU runs a user written code and does accordingly

Answer: a
Explanation: None.

9. In an interrupt driven input/output _____
a) the CPU uses polling to watch the control bit constantly, looping to see if a device is ready
b) the CPU writes one data byte to the data register and sets a bit in control register to show that a byte is available
c) the CPU receives an interrupt when the device is ready for the next byte
d) the CPU runs a user written code and does accordingly

Answer: c
Explanation: None.

10. In the layered approach of Operating Systems _____
a) Bottom Layer(0) is the User interface
b) Highest Layer(N) is the User interface
c) Bottom Layer(N) is the hardware
d) Highest Layer(N) is the hardware

Answer: b
Explanation: None.

11. How does the Hardware trigger an interrupt?
a) Sending signals to CPU through a system bus
b) Executing a special program called interrupt program
c) Executing a special program called system program
d) Executing a special operation called system call

Answer: a
Explanation: None.

12. Which operation is performed by an interrupt handler?
a) Saving the current state of the system
b) Loading the interrupt handling code and executing it
c) Once done handling, bringing back the system to the original state it was before the interrupt occurred
d) All of the mentioned

Answer: d
Explanation: None.

1. Which module gives control of the CPU to the process selected by the short-term scheduler?
a) dispatcher
b) interrupt
c) scheduler
d) none of the mentioned

Answer: a
Explanation: None.

2. The processes that are residing in main memory and are ready and waiting to execute are kept on a list called _____

a) job queue
b) ready queue
c) execution queue
d) process queue

Answer: b
Explanation: None.

3. The interval from the time of submission of a process to the time of completion is termed as _____
a) waiting time
b) turnaround time
c) response time
d) throughput

Answer: b
Explanation: None.

4. Which scheduling algorithm allocates the CPU first to the process that requests the CPU first?
a) first-come, first-served scheduling
b) shortest job scheduling
c) priority scheduling
d) none of the mentioned

Answer: a
Explanation: None.

5. In priority scheduling algorithm _____
a) CPU is allocated to the process with highest priority
b) CPU is allocated to the process with lowest priority
c) Equal priority processes can not be scheduled
d) None of the mentioned

Answer: a
Explanation: None.

6. In priority scheduling algorithm, when a process arrives at the ready queue, its priority is compared with the priority of _____
a) all process
b) currently running process
c) parent process
d) init process

Answer: b
Explanation: None.

7. Which algorithm is defined in Time quantum?
a) shortest job scheduling algorithm
b) round robin scheduling algorithm
c) priority scheduling algorithm
d) multilevel queue scheduling algorithm

Answer: b
Explanation: None.

8. Process are classified into different groups in _____
a) shortest job scheduling algorithm
b) round robin scheduling algorithm
c) priority scheduling algorithm

d) multilevel queue scheduling algorithm

Answer: d
Explanation: None.

9. In multilevel feedback scheduling algorithm _____
a) a process can move to a different classified ready queue
b) classification of ready queue is permanent
c) processes are not classified into groups
d) none of the mentioned

Answer: a
Explanation: None.

10. Which one of the following can not be scheduled by the kernel?
a) kernel level thread
b) user level thread
c) process
d) none of the mentioned

Answer: b
Explanation: User level threads are managed by thread library and the kernel is unaware of them.

1. CPU scheduling is the basis of _____
a) multiprocessor systems
b) multiprogramming operating systems
c) larger memory sized systems
d) none of the mentioned

Answer: b
Explanation: None.

2. With multiprogramming _____ is used productively.
a) time
b) space
c) money
d) all of the mentioned

Answer: a
Explanation: None.

3. What are the two steps of a process execution?
a) I/O & OS Burst
b) CPU & I/O Burst
c) Memory & I/O Burst
d) OS & Memory Burst

Answer: b
Explanation: None.

4. An I/O bound program will typically have _____
a) a few very short CPU bursts
b) many very short I/O bursts
c) many very short CPU bursts
d) a few very short I/O bursts

Answer: c
Explanation: None.

5. A process is selected from the _____ queue by the _____ scheduler, to be executed.
a) blocked, short term
b) wait, long term
c) ready, short term
d) ready, long term

Answer: c
Explanation: None.

6. In the following cases non – preemptive scheduling occurs?
a) When a process switches from the running state to the ready state
b) When a process goes from the running state to the waiting state
c) When a process switches from the waiting state to the ready state
d) All of the mentioned

Answer: b
Explanation: There is no other choice.

7. The switching of the CPU from one process or thread to another is called _____
a) process switch
b) task switch
c) context switch
d) all of the mentioned

Answer: d
Explanation: None.

8. What is Dispatch latency?
a) the speed of dispatching a process from running to the ready state
b) the time of dispatching a process from running to ready state and keeping the CPU idle
c) the time to stop one process and start running another one
d) none of the mentioned

Answer: c
Explanation: None.

9. Scheduling is done so as to _____
a) increase CPU utilization
b) decrease CPU utilization
c) keep the CPU more idle
d) none of the mentioned

Answer: a
Explanation: None.

10. Scheduling is done so as to _____
a) increase the throughput
b) decrease the throughput
c) increase the duration of a specific amount of work
d) none of the mentioned

Answer: a
Explanation: None.

11. What is Turnaround time?
a) the total waiting time for a process to finish execution
b) the total time spent in the ready queue
c) the total time spent in the running queue

d) the total time from the completion till the submission of a process

Answer: d
Explanation: None.

12. Scheduling is done so as to _____
a) increase the turnaround time
b) decrease the turnaround time
c) keep the turnaround time same
d) there is no relation between scheduling and turnaround time

Answer: b
Explanation: None.

13. What is Waiting time?
a) the total time in the blocked and waiting queues
b) the total time spent in the ready queue
c) the total time spent in the running queue
d) the total time from the completion till the submission of a process

Answer: b
Explanation: None.

14. Scheduling is done so as to _____
a) increase the waiting time
b) keep the waiting time the same
c) decrease the waiting time
d) none of the mentioned

Answer: c
Explanation: None.

15. What is Response time?
a) the total time taken from the submission time till the completion time
b) the total time taken from the submission time till the first response is produced
c) the total time taken from submission time till the response is output
d) none of the mentioned

Answer: b
Explanation: None.

1. Round robin scheduling falls under the category of _____
a) Non-preemptive scheduling
b) Preemptive scheduling
c) All of the mentioned
d) None of the mentioned

Answer: b
Explanation: None.

2. With round robin scheduling algorithm in a time shared system _____
a) using very large time slices converts it into First come First served scheduling algorithm
b) using very small time slices converts it into First come First served scheduling algorithm
c) using extremely small time slices increases performance
d) using very small time slices converts it into Shortest Job First algorithm

Answer: a
Explanation: All the processes will be able to get completed.

3. The portion of the process scheduler in an operating system that dispatches processes is concerned with _____
a) assigning ready processes to CPU
b) assigning ready processes to waiting queue
c) assigning running processes to blocked queue
d) all of the mentioned

Answer: a
Explanation: None.

4. Complex scheduling algorithms _____
a) are very appropriate for very large computers
b) use minimal resources
c) use many resources
d) all of the mentioned

Answer: a
Explanation: Large computers are overloaded with a greater number of processes.

5. What is FIFO algorithm?
a) first executes the job that came in last in the queue
b) first executes the job that came in first in the queue
c) first executes the job that needs minimal processor
d) first executes the job that has maximum processor needs

Answer: b
Explanation: None.

6. The strategy of making processes that are logically runnable to be temporarily suspended is called _____
a) Non preemptive scheduling
b) Preemptive scheduling
c) Shortest job first
d) First come First served

Answer: b
Explanation: None.

7. What is Scheduling?
a) allowing a job to use the processor
b) making proper use of processor
c) all of the mentioned
d) none of the mentioned

Answer: a
Explanation: None.

8. There are 10 different processes running on a workstation. Idle processes are waiting for an input event in the input queue. Busy processes are scheduled with the Round-Robin time sharing method. Which out of the following quantum times is the best value for small response times, if the processes have a short runtime, e.g. less than 10ms?
a) tQ = 15ms
b) tQ = 40ms
c) tQ = 45ms
d) tQ = 50ms

Answer: a
Explanation: None.

9. Orders are processed in the sequence they arrive if _____ rule sequences the jobs.

a) earliest due date
b) slack time remaining
c) first come, first served
d) critical ratio

Answer: c
Explanation: None.

10. Which of the following algorithms tends to minimize the process flow time?
a) First come First served
b) Shortest Job First
c) Earliest Deadline First
d) Longest Job First

Answer: b
Explanation: None.

11. Under multiprogramming, turnaround time for short jobs is usually _____ and that for long jobs is slightly _____
a) Lengthened; Shortened
b) Shortened; Lengthened
c) Shortened; Shortened
d) Shortened; Unchanged

Answer: b
Explanation: None.

a) I only
b) I and III only
c) II and III only
d) I, II and III

Answer: d
Explanation: I) Shortest remaining time first scheduling is a preemptive version of shortest job scheduling. It may cause starvation as shorter processes may keep coming and a long CPU burst process never gets CPU.
II) Preemption may cause starvation. If priority based scheduling with preemption is used, then a low priority process may never get CPU.
III) Round Robin Scheduling improves response time as all processes get CPU after a specified time.

1. Which is the most optimal scheduling algorithm?
a) FCFS – First come First served
b) SJF – Shortest Job First
c) RR – Round Robin
d) None of the mentioned

Answer: b
Explanation: None.

2. The real difficulty with SJF in short term scheduling is _____
a) it is too good an algorithm
b) knowing the length of the next CPU request
c) it is too complex to understand
d) none of the mentioned

Answer: b
Explanation: None.

3. The FCFS algorithm is particularly troublesome for _____

a) time sharing systems
b) multiprogramming systems
c) multiprocessor systems
d) operating systems

Answer: b
Explanation: In a time sharing system, each user needs to get a share of the CPU at regular intervals.

4. Consider the following set of processes, the length of the CPU burst time given in milliseconds.

Process	Burst time
P1	6
P2	8
P3	7
P4	3

Assuming the above process being scheduled with the SJF scheduling algorithm.
a) The waiting time for process P1 is 3ms
b) The waiting time for process P1 is 0ms
c) The waiting time for process P1 is 16ms
d) The waiting time for process P1 is 9ms

Answer: a
Explanation: None.

5. Preemptive Shortest Job First scheduling is sometimes called _____
a) Fast SJF scheduling
b) EDF scheduling – Earliest Deadline First
c) HRRN scheduling – Highest Response Ratio Next
d) SRTN scheduling – Shortest Remaining Time Next

Answer: d
Explanation: None.

6. An SJF algorithm is simply a priority algorithm where the priority is _____
a) the predicted next CPU burst
b) the inverse of the predicted next CPU burst
c) the current CPU burst
d) anything the user wants

Answer: a
Explanation: The larger the CPU burst, the lower the priority.

7. Choose one of the disadvantages of the priority scheduling algorithm?
a) it schedules in a very complex manner
b) its scheduling takes up a lot of time
c) it can lead to some low priority process waiting indefinitely for the CPU
d) none of the mentioned

Answer: c
Explanation: None.

8. What is 'Aging'?
a) keeping track of cache contents
b) keeping track of what pages are currently residing in memory
c) keeping track of how many times a given page is referenced
d) increasing the priority of jobs to ensure termination in a finite time

Answer: d

Explanation: None.

9. A solution to the problem of indefinite blockage of low – priority processes is _____
a) Starvation
b) Wait queue
c) Ready queue
d) Aging

Answer: d
Explanation: None.

a) i only
b) i and iii only
c) ii and iii only
d) i, ii and iii

Answer: d
Explanation: None.

11. Which of the following scheduling algorithms gives minimum average waiting time?
a) FCFS
b) SJF
c) Round – robin
d) Priority

Answer: b
Explanation: None.

1. Concurrent access to shared data may result in _____
a) data consistency
b) data insecurity
c) data inconsistency
d) none of the mentioned

Answer: c
Explanation: None.

2. A situation where several processes access and manipulate the same data concurrently and the outcome of the execution depends on the particular order in which access takes place is called _____
a) data consistency
b) race condition
c) aging
d) starvation

Answer: b
Explanation: None.

3. The segment of code in which the process may change common variables, update tables, write into files is known as _____
a) program
b) critical section
c) non – critical section
d) synchronizing

Answer: b
Explanation: None.

4. Which of the following conditions must be satisfied to solve the critical section problem?

a) Mutual Exclusion
b) Progress
c) Bounded Waiting
d) All of the mentioned

Answer: d
Explanation: None.

5. Mutual exclusion implies that _____
a) if a process is executing in its critical section, then no other process must be executing in their critical sections
b) if a process is executing in its critical section, then other processes must be executing in their critical sections
c) if a process is executing in its critical section, then all the resources of the system must be blocked until it finishes execution
d) none of the mentioned

Answer: a
Explanation: None.

6. Bounded waiting implies that there exists a bound on the number of times a process is allowed to enter its critical section _____
a) after a process has made a request to enter its critical section and before the request is granted
b) when another process is in its critical section
c) before a process has made a request to enter its critical section
d) none of the mentioned

Answer: a
Explanation: None.

7. A minimum of _____ variable(s) is/are required to be shared between processes to solve the critical section problem.
a) one
b) two
c) three
d) four

Answer: b
Explanation: None.

8. In the bakery algorithm to solve the critical section problem _____
a) each process is put into a queue and picked up in an ordered manner
b) each process receives a number (may or may not be unique) and the one with the lowest number is served next
c) each process gets a unique number and the one with the highest number is served next
d) each process gets a unique number and the one with the lowest number is served next

Answer: b
Explanation: None.

1. An un-interruptible unit is known as _____
a) single
b) atomic
c) static
d) none of the mentioned

Answer: b
Explanation: None.

2. TestAndSet instruction is executed _____
a) after a particular process

b) periodically
c) atomically
d) none of the mentioned

Answer: c
Explanation: None.

3. Semaphore is a/an _____ to solve the critical section problem.
a) hardware for a system
b) special program for a system
c) integer variable
d) none of the mentioned

Answer: c
Explanation: None.

4. What are the two atomic operations permissible on semaphores?
a) wait
b) stop
c) hold
d) none of the mentioned

Answer: a
Explanation: None.

5. What are Spinlocks?
a) CPU cycles wasting locks over critical sections of programs
b) Locks that avoid time wastage in context switches
c) Locks that work better on multiprocessor systems
d) All of the mentioned

Answer: d
Explanation: None.

6. What is the main disadvantage of spinlocks?
a) they are not sufficient for many process
b) they require busy waiting
c) they are unreliable sometimes
d) they are too complex for programmers

Answer: b
Explanation: None.

7. The wait operation of the semaphore basically works on the basic _____ system call.
a) stop()
b) block()
c) hold()
d) wait()

Answer: b
Explanation: None.

8. The signal operation of the semaphore basically works on the basic _____ system call.
a) continue()
b) wakeup()
c) getup()
d) start()

Answer: b
Explanation: None.

9. If the semaphore value is negative _____
a) its magnitude is the number of processes waiting on that semaphore
b) it is invalid
c) no operation can be further performed on it until the signal operation is performed on it
d) none of the mentioned

Answer: a
Explanation: None.

10. The code that changes the value of the semaphore is _____
a) remainder section code
b) non – critical section code
c) critical section code
d) none of the mentioned

Answer: c
Explanation: None.

11. The following program consists of 3 concurrent processes and 3 binary semaphores. The semaphores are initialized as S0 = 1, S1 = 0, S2 = 0.

```
Process P0
while(true)
{
    wait(S0);
    print '0';
    release(S1);
    release(S2);
}

Process P1
wait(S1);
release(S0);

Process P2
wait(S2);
release(S0);
```

How many times will P0 print '0'?
a) At least twice
b) Exactly twice
c) Exactly thrice
d) Exactly once

Answer: a
Explanation: None.

12. Each process Pi, i = 0,1,2,3,……,9 is coded as follows.

```
repeat
 P(mutex)
 {Critical Section}
 V(mutex)
 forever
```

The code for P10 is identical except that it uses V(mutex) instead of P(mutex). What is the largest number of processes that can be inside the critical section at any moment (the mutex being initialized to 1)?
a) 1
b) 2

c) 3
d) None of the mentioned

Answer: c
Explanation: Any one of the 9 processes can get into critical section after executing P(mutex) which decrements the mutex value to 0. At this time P10 can enter critical section by incrementing the value to 1. Now any of the 9 processes can enter the critical section by again decrementing the mutex value to 0. None of the remaining processes can get into their critical sections.

13. Two processes, P1 and P2, need to access a critical section of code. Consider the following synchronization construct used by the processes.

```
Process P1 :
while(true)
{
w1 = true;
while(w2 == true);
Critical section
w1 = false;
}
Remainder Section

Process P2 :
while(true)
{
w2 = true;
while(w1 == true);
Critical section
w2 = false;
}
Remainder Section
```

Here, w1 and w2 have shared variables, which are initialized to false. Which one of the following statements is TRUE about the above construct?
a) It does not ensure mutual exclusion
b) It does not ensure bounded waiting
c) It requires that processes enter the critical section in strict alternation
d) It does not prevent deadlocks but ensures mutual exclusion

Answer: d
Explanation: None.

1. What will happen if a non-recursive mutex is locked more than once?
a) Starvation
b) Deadlock
c) Aging
d) Signaling

Answer: b
Explanation: If a thread which had already locked a mutex, tries to lock the mutex again, it will enter into the waiting list of that mutex, which results in a deadlock. It is because no other thread can unlock the mutex.

2. What is a semaphore?
a) is a binary mutex
b) must be accessed from only one process
c) can be accessed from multiple processes
d) none of the mentioned

Answer: c
Explanation: None.

3. What are the two kinds of semaphores?
a) mutex & counting
b) binary & counting
c) counting & decimal
d) decimal & binary

Answer: b
Explanation: None.

4. What is a mutex?
a) is a binary mutex
b) must be accessed from only one process
c) can be accessed from multiple processes
d) none of the mentioned

Answer: b
Explanation: None.

5. At a particular time of computation the value of a counting semaphore is 7.Then 20 P operations and 15 V operations were completed on this semaphore. The resulting value of the semaphore is? (GATE 1987)
a) 42
b) 2
c) 7
d) 12

Answer: b
Explanation: P represents Wait and V represents Signal. P operation will decrease the value by 1 every time and V operation will increase the value by 1 every time.

6. A binary semaphore is a semaphore with integer values _____
a) 1
b) -1
c) 0.8
d) 0.5

Answer: a
Explanation: None.

7. The following pair of processes share a common variable X.

```
Process A
int Y;
A1: Y = X*2;
A2: X = Y;

Process B
int Z;
B1: Z = X+1;
B2: X = Z;
```

Answer: c
Explanation: Here are the possible ways in which statements from A and B can be interleaved.
A1 A2 B1 B2: X = 11
A1 B1 A2 B2: X = 6
A1 B1 B2 A2: X = 10
B1 A1 B2 A2: X = 10
B1 A1 A2 B2: X = 6
B1 B2 A1 A2: X = 12.

8. The program follows to use a shared binary semaphore T.

```
Process A
int Y;
A1: Y = X*2;
A2: X = Y;
signal(T);

Process B
int Z;
B1: wait(T);
B2: Z = X+1;
X = Z;
```

Answer: a
Explanation: The semaphore T ensures that all the statements from A finish execution before B begins. So now there is only one way in which statements from A and B can be interleaved:
A1 A2 B1 B2: X = 11.

9. Semaphores are mostly used to implement _____
a) System calls
b) IPC mechanisms
c) System protection
d) None of the mentioned

Answer: b
Explanation: None.

10. Spinlocks are intended to provide _____ only.
a) Mutual Exclusion
b) Bounded Waiting
c) Aging
d) Progress

Answer: b
Explanation: None.

1. The bounded buffer problem is also known as _____
a) Readers – Writers problem
b) Dining – Philosophers problem
c) Producer – Consumer problem
d) None of the mentioned

Answer: c
Explanation: None.

2. In the bounded buffer problem, there are the empty and full semaphores that _____
a) count the number of empty and full buffers
b) count the number of empty and full memory spaces
c) count the number of empty and full queues
d) none of the mentioned

Answer: a
Explanation: None.

3. In the bounded buffer problem _____
a) there is only one buffer
b) there are n buffers (n being greater than one but finite)
c) there are infinite buffers
d) the buffer size is bounded

Answer: b

Explanation: None.

4. To ensure difficulties do not arise in the readers – writers problem _____ are given exclusive access to the shared object.
a) readers
b) writers
c) readers and writers
d) none of the mentioned

Answer: b
Explanation: None.

5. The dining – philosophers problem will occur in case of _____
a) 5 philosophers and 5 chopsticks
b) 4 philosophers and 5 chopsticks
c) 3 philosophers and 5 chopsticks
d) 6 philosophers and 5 chopsticks

Answer: a
Explanation: None.

6. A deadlock free solution to the dining philosophers problem _____
a) necessarily eliminates the possibility of starvation
b) does not necessarily eliminate the possibility of starvation
c) eliminates any possibility of any kind of problem further
d) none of the mentioned

Answer: b
Explanation: None.

In this situation :
a) a deadlock will occur
b) processes will starve to enter critical section
c) several processes maybe executing in their critical section
d) all of the mentioned

Answer: c
Explanation: None.

a) a deadlock will occur
b) processes will starve to enter critical section
c) several processes maybe executing in their critical section
d) all of the mentioned

Answer: a
Explanation: None.

9. Consider the methods used by processes P1 and P2 for accessing their critical sections whenever needed, as given below. The initial values of shared boolean variables S1 and S2 are randomly assigned. (GATE 2010)

```
signal(mutex);
.....
critical section
.....
wait(mutex);
```

Which of the following statements describes properties achieved?
a) Mutual exclusion but not progress
b) Progress but not mutual exclusion

c) Neither mutual exclusion nor progress
d) Both mutual exclusion and progress

Answer: d
Explanation: None.

1. A monitor is a type of _____
a) semaphore
b) low level synchronization construct
c) high level synchronization construct
d) none of the mentioned

Answer: c
Explanation: None.

2. A monitor is characterized by _____
a) a set of programmer defined operators
b) an identifier
c) the number of variables in it
d) all of the mentioned

Answer: a
Explanation: None.

3. A procedure defined within a _____ can access only those variables declared locally within the _____ and its formal parameters.
a) process, semaphore
b) process, monitor
c) semaphore, semaphore
d) monitor, monitor

Answer: d
Explanation: None.

4. The monitor construct ensures that _____
a) only one process can be active at a time within the monitor
b) n number of processes can be active at a time within the monitor (n being greater than 1)
c) the queue has only one process in it at a time
d) all of the mentioned

Answer: a
Explanation: None.

5. What are the operations that can be invoked on a condition variable?
a) wait & signal
b) hold & wait
c) signal & hold
d) continue & signal

Answer: a
Explanation: None.

6. Which is the process of invoking the wait operation?
a) suspended until another process invokes the signal operation
b) waiting for another process to complete before it can itself call the signal operation
c) stopped until the next process in the queue finishes execution
d) none of the mentioned

Answer: a
Explanation: None.

7. If no process is suspended, the signal operation _____
a) puts the system into a deadlock state
b) suspends some default process execution
c) nothing happens
d) the output is unpredictable

Answer: c
Explanation: None.

1. A collection of instructions that performs a single logical function is called _____
a) transaction
b) operation
c) function
d) all of the mentioned

Answer: a
Explanation: None.

2. A terminated transaction that has completed its execution successfully is _____ otherwise it is _____
a) committed, destroyed
b) aborted, destroyed
c) committed, aborted
d) none of the mentioned

Answer: c
Explanation: None.

3. The state of the data accessed by an aborted transaction must be restored to what it was just before the transaction started executing. This restoration is known as _____ of transaction.
a) safety
b) protection
c) roll – back
d) revert – back

Answer: c
Explanation: None.

4. Write ahead logging is a way _____
a) to ensure atomicity
b) to keep data consistent
c) that records data on stable storage
d) all of the mentioned

Answer: d
Explanation: None.

5. In the write ahead logging a _____ is maintained.
a) a memory
b) a system
c) a disk
d) a log record

Answer: d
Explanation: None.

6. An actual update is not allowed to a data item _____
a) before the corresponding log record is written out to stable storage
b) after the corresponding log record is written out to stable storage
c) until the whole log record has been checked for inconsistencies
d) all of the mentioned

Answer: a
Explanation: None.

7. The undo and redo operations must be _____ to guarantee correct behaviour, even if a failure occurs during recovery process.
a) idempotent
b) easy
c) protected
d) all of the mentioned

Answer: a
Explanation: Idempotent – Multiple executions of an operation have the same result as does one execution.

8. The system periodically performs checkpoints that consists of the following operation(s) _____
a) Putting all the log records currently in main memory onto stable storage
b) putting all modified data residing in main memory onto stable storage
c) putting a log record onto stable storage
d) all of the mentioned

Answer: d
Explanation: None.

9. Consider a transaction T1 that committed prior to checkpoint. The <T1 commits> record appears in the log before the <checkpoint> record. Any modifications made by T1 must have been written to the stable storage either with the checkpoint or prior to it. Thus at recovery time _____
a) There is a need to perform an undo operation on T1
b) There is a need to perform a redo operation on T1
c) There is no need to perform an undo and redo operation on T1
d) All of the mentioned

Answer: c
Explanation: None.

10. Serializable schedules are ones where _____
a) concurrent execution of transactions is equivalent to the transactions executed serially
b) the transactions can be carried out one after the other
c) a valid result occurs after execution transactions
d) none of the mentioned

Answer: a
Explanation: None.

11. A locking protocol is one that _____
a) governs how locks are acquired
b) governs how locks are released
c) governs how locks are acquired and released
d) none of the mentioned

Answer: c
Explanation: None.

12. The two phase locking protocol consists of _____

a) growing & shrinking phase
b) shrinking & creation phase
c) creation & growing phase
d) destruction & creation phase

Answer: a
Explanation: None.

13. The growing phase is a phase in which?
a) A transaction may obtain locks, but does not release any
b) A transaction may obtain locks, and releases a few or all of them
c) A transaction may release locks, but does not obtain any new locks
d) A transaction may release locks, and does obtain new locks

Answer: a
Explanation: None.

14. The shrinking phase is a phase in which?
a) A transaction may obtain locks, but does not release any
b) A transaction may obtain locks, and releases a few or all of them
c) A transaction may release locks, but does not obtain any new locks
d) A transaction may release locks, and does obtain new locks

Answer: c
Explanation: None.Answer: b
Explanation: None.

1. What is a reusable resource?
a) that can be used by one process at a time and is not depleted by that use
b) that can be used by more than one process at a time
c) that can be shared between various threads
d) none of the mentioned

Answer: a
Explanation: None.

2. Which of the following condition is required for a deadlock to be possible?
a) mutual exclusion
b) a process may hold allocated resources while awaiting assignment of other resources
c) no resource can be forcibly removed from a process holding it
d) all of the mentioned

Answer: d
Explanation: None.

3. A system is in the safe state if _____
a) the system can allocate resources to each process in some order and still avoid a deadlock
b) there exist a safe sequence
c) all of the mentioned
d) none of the mentioned

Answer: a
Explanation: None.

4. The circular wait condition can be prevented by _____
a) defining a linear ordering of resource types
b) using thread
c) using pipes

d) all of the mentioned

Answer: a
Explanation: None.

5. Which one of the following is the deadlock avoidance algorithm?
a) banker's algorithm
b) round-robin algorithm
c) elevator algorithm
d) karn's algorithm

Answer: a
Explanation: None.

6. What is the drawback of banker's algorithm?
a) in advance processes rarely know how much resource they will need
b) the number of processes changes as time progresses
c) resource once available can disappear
d) all of the mentioned

Answer: d
Explanation: None.

7. For an effective operating system, when to check for deadlock?
a) every time a resource request is made
b) at fixed time intervals
c) every time a resource request is made at fixed time intervals
d) none of the mentioned

Answer: c
Explanation: None.

8. A problem encountered in multitasking when a process is perpetually denied necessary resources is called _____
a) deadlock
b) starvation
c) inversion
d) aging

Answer: b
Explanation: None.

9. Which one of the following is a visual (mathematical) way to determine the deadlock occurrence?
a) resource allocation graph
b) starvation graph
c) inversion graph
d) none of the mentioned

Answer: a
Explanation: None.

10. To avoid deadlock _____
a) there must be a fixed number of resources to allocate
b) resource allocation must be done only once
c) all deadlocked processes must be aborted
d) inversion technique can be used

Answer: a

Explanation: None.

1. The number of resources requested by a process _____
a) must always be less than the total number of resources available in the system
b) must always be equal to the total number of resources available in the system
c) must not exceed the total number of resources available in the system
d) must exceed the total number of resources available in the system

Answer: c
Explanation: None.

2. The request and release of resources are _____
a) command line statements
b) interrupts
c) system calls
d) special programs

Answer: c
Explanation: None.

3. What are Multithreaded programs?
a) lesser prone to deadlocks
b) more prone to deadlocks
c) not at all prone to deadlocks
d) none of the mentioned

Answer: b
Explanation: Multiple threads can compete for shared resources.

4. For a deadlock to arise, which of the following conditions must hold simultaneously?
a) Mutual exclusion
b) No preemption
c) Hold and wait
d) All of the mentioned

Answer: d
Explanation: None.

5. For Mutual exclusion to prevail in the system _____
a) at least one resource must be held in a non sharable mode
b) the processor must be a uniprocessor rather than a multiprocessor
c) there must be at least one resource in a sharable mode
d) all of the mentioned

Answer: a
Explanation: If another process requests that resource (non – shareable resource), the requesting process must be delayed until the resource has been released.

6. For a Hold and wait condition to prevail _____
a) A process must be not be holding a resource, but waiting for one to be freed, and then request to acquire it
b) A process must be holding at least one resource and waiting to acquire additional resources that are being held by other processes
c) A process must hold at least one resource and not be waiting to acquire additional resources
d) None of the mentioned

Answer: b
Explanation: None.

7. Deadlock prevention is a set of methods _____
a) to ensure that at least one of the necessary conditions cannot hold
b) to ensure that all of the necessary conditions do not hold
c) to decide if the requested resources for a process have to be given or not
d) to recover from a deadlock

Answer: a
Explanation: None.

8. For non sharable resources like a printer, mutual exclusion _____
a) must exist
b) must not exist
c) may exist
d) none of the mentioned

Answer: a
Explanation: A printer cannot be simultaneously shared by several processes.

9. For sharable resources, mutual exclusion _____
a) is required
b) is not required
c) may be or may not be required
d) none of the mentioned

Answer: b
Explanation: They do not require mutually exclusive access, and hence cannot be involved in a deadlock.

10. To ensure that the hold and wait condition never occurs in the system, it must be ensured that _____
a) whenever a resource is requested by a process, it is not holding any other resources
b) each process must request and be allocated all its resources before it begins its execution
c) a process can request resources only when it has none
d) all of the mentioned

Answer: d
Explanation: c – A process may request some resources and use them. Before it can can request any additional resources, however it must release all the resources that it is currently allocated.

11. The disadvantage of a process being allocated all its resources before beginning its execution is _____
a) Low CPU utilization
b) Low resource utilization
c) Very high resource utilization
d) None of the mentioned

Answer: b
Explanation: None.

12. To ensure no preemption, if a process is holding some resources and requests another resource that cannot be immediately allocated to it _____
a) then the process waits for the resources be allocated to it
b) the process keeps sending requests until the resource is allocated to it
c) the process resumes execution without the resource being allocated to it
d) then all resources currently being held are preempted

Answer: d
Explanation: None.

13. One way to ensure that the circular wait condition never holds is to _____
a) impose a total ordering of all resource types and to determine whether one precedes another in the ordering

b) to never let a process acquire resources that are held by other processes
c) to let a process wait for only one resource at a time
d) all of the mentioned

Answer: a
Explanation: None.

1. Each request requires that the system consider the _____ to decide whether the current request can be satisfied or must wait to avoid a future possible deadlock.
a) resources currently available
b) processes that have previously been in the system
c) resources currently allocated to each process
d) future requests and releases of each process

Answer: a
Explanation: None.

2. Given a priori information about the _____ number of resources of each type that maybe requested for each process, it is possible to construct an algorithm that ensures that the system will never enter a deadlock state.
a) minimum
b) average
c) maximum
d) approximate

Answer: c
Explanation: None.

3. A deadlock avoidance algorithm dynamically examines the _____ to ensure that a circular wait condition can never exist.
a) resource allocation state
b) system storage state
c) operating system
d) resources

Answer: a
Explanation: Resource allocation states are used to maintain the availability of the already and current available resources.

4. A state is safe, if _____
a) the system does not crash due to deadlock occurrence
b) the system can allocate resources to each process in some order and still avoid a deadlock
c) the state keeps the system protected and safe
d) all of the mentioned

Answer: b
Explanation: None.

5. A system is in a safe state only if there exists a _____
a) safe allocation
b) safe resource
c) safe sequence
d) all of the mentioned

Answer: c
Explanation: None.

6. All unsafe states are _____
a) deadlocks

b) not deadlocks
c) fatal
d) none of the mentioned

Answer: b
Explanation: None.

7. A system has 12 magnetic tape drives and 3 processes : P0, P1, and P2. Process P0 requires 10 tape drives, P1 requires 4 and P2 requires 9 tape drives.

```
Process
P0
P1
P2

Maximum needs (process-wise: P0 through P2 top to bottom)
10
4
9

Currently allocated (process-wise)
5
2
2
```

Which of the following sequence is a safe sequence?
a) P0, P1, P2
b) P1, P2, P0
c) P2, P0, P1
d) P1, P0, P2

Answer: d
Explanation: None.

8. If no cycle exists in the resource allocation graph _____
a) then the system will not be in a safe state
b) then the system will be in a safe state
c) all of the mentioned
d) none of the mentioned

Answer: b
Explanation: None.

9. The resource allocation graph is not applicable to a resource allocation system _____
a) with multiple instances of each resource type
b) with a single instance of each resource type
c) single & multiple instances of each resource type
d) none of the mentioned

Answer: a
Explanation: None.

10. The Banker's algorithm is _____ than the resource allocation graph algorithm.
a) less efficient
b) more efficient
c) equal
d) none of the mentioned

Answer: a
Explanation: None.

11. The data structures available in the Banker's algorithm are _____
a) Available
b) Need
c) Allocation
d) All of the mentioned

Answer: d
Explanation: None.

12. The content of the matrix Need is _____
a) Allocation – Available
b) Max – Available
c) Max – Allocation
d) Allocation – Max

Answer: c
Explanation: None.

13. A system with 5 processes P0 through P4 and three resource types A, B, C have A with 10 instances, B with 5 instances, and C with 7 instances. At time t0, the following snapshot has been taken:

```
Process
P0
P1
P2
P3
P4

Allocation (process-wise : P0 through P4 top TO bottom)
A   B   C
0   1   0
2   0   0
3   0   2
2   1   1
0   0   2

MAX (process-wise: P0 through P4 top TO bottom)
A   B   C
7   5   3
3   2   2
9   0   2
2   2   2
4   3   3

Available
A   B   C
3   3   2
```

The sequence <P1, P3, P4, P2, P0> leads the system to _____
a) an unsafe state
b) a safe state
c) a protected state
d) a deadlock

Answer: b
Explanation: None.

1. The wait-for graph is a deadlock detection algorithm that is applicable when _____
a) all resources have a single instance
b) all resources have multiple instances
c) all resources have a single 7 multiple instances
d) all of the mentioned

Answer: a
Explanation: None.

2. An edge from process Pi to Pj in a wait for graph indicates that _____
a) Pi is waiting for Pj to release a resource that Pi needs
b) Pj is waiting for Pi to release a resource that Pj needs
c) Pi is waiting for Pj to leave the system
d) Pj is waiting for Pi to leave the system

Answer: a
Explanation: None.

3. If the wait for graph contains a cycle _____
a) then a deadlock does not exist
b) then a deadlock exists
c) then the system is in a safe state
d) either deadlock exists or system is in a safe state

Answer: b
Explanation: None.

4. If deadlocks occur frequently, the detection algorithm must be invoked _____
a) rarely
b) frequently
c) rarely & frequently
d) none of the mentioned

Answer: b
Explanation: None.

5. What is the disadvantage of invoking the detection algorithm for every request?
a) overhead of the detection algorithm due to consumption of memory
b) excessive time consumed in the request to be allocated memory
c) considerable overhead in computation time
d) all of the mentioned

Answer: c
Explanation: None.

6. A deadlock eventually cripples system throughput and will cause the CPU utilization to _____
a) increase
b) drop
c) stay still
d) none of the mentioned

Answer: b
Explanation: None.

7. Every time a request for allocation cannot be granted immediately, the detection algorithm is invoked. This will help identify _____
a) the set of processes that have been deadlocked
b) the set of processes in the deadlock queue
c) the specific process that caused the deadlock
d) all of the mentioned

Answer: a
Explanation: None.

8. A computer system has 6 tape drives, with 'n' processes competing for them. Each process may need 3 tape drives. The maximum value of 'n' for which the system is guaranteed to be deadlock free is?
a) 2
b) 3
c) 4
d) 1

Answer: a
Explanation: None.

9. A system has 3 processes sharing 4 resources. If each process needs a maximum of 2 units then, deadlock _____
a) can never occur
b) may occur
c) has to occur
d) none of the mentioned

Answer: a
Explanation: None.

10. 'm' processes share 'n' resources of the same type. The maximum need of each process doesn't exceed 'n' and the sum of all their maximum needs is always less than m+n. In this setup, deadlock _____
a) can never occur
b) may occur
c) has to occur
d) none of the mentioned

Answer: a
Explanation: None.

1. A deadlock can be broken by _____
a) abort one or more processes to break the circular wait
b) abort all the process in the system
c) preempt all resources from all processes
d) none of the mentioned

Answer: a
Explanation: None.

2. The two ways of aborting processes and eliminating deadlocks are _____
a) Abort all deadlocked processes
b) Abort all processes
c) Abort one process at a time until the deadlock cycle is eliminated
d) All of the mentioned

Answer: c
Explanation: None.

3. Those processes should be aborted on occurrence of a deadlock, the termination of which?
a) is more time consuming
b) incurs minimum cost
c) safety is not hampered
d) all of the mentioned

Answer: b
Explanation: None.

4. The process to be aborted is chosen on the basis of the following factors?

a) priority of the process
b) process is interactive or batch
c) how long the process has computed
d) all of the mentioned

Answer: d
Explanation: None.

5. Cost factors for process termination include _____
a) Number of resources the deadlock process is not holding
b) CPU utilization at the time of deadlock
c) Amount of time a deadlocked process has thus far consumed during its execution
d) All of the mentioned

Answer: c
Explanation: None.

6. If we preempt a resource from a process, the process cannot continue with its normal execution and it must be _____
a) aborted
b) rolled back
c) terminated
d) queued

Answer: b
Explanation: None.

7. To _____ to a safe state, the system needs to keep more information about the states of processes.
a) abort the process
b) roll back the process
c) queue the process
d) none of the mentioned

Answer: b
Explanation: None.

8. If the resources are always preempted from the same process _____ can occur.
a) deadlock
b) system crash
c) aging
d) starvation

Answer: d
Explanation: None.

9. What is the solution to starvation?
a) the number of rollbacks must be included in the cost factor
b) the number of resources must be included in resource preemption
c) resource preemption be done instead
d) all of the mentioned

Answer: a
Explanation: None.

1. What is Address Binding?
a) going to an address in memory
b) locating an address with the help of another address
c) binding two addresses together to form a new address in a different memory space

d) a mapping from one address space to another

Answer: d
Explanation: None.

2. Binding of instructions and data to memory addresses can be done at _____
a) Compile time
b) Load time
c) Execution time
d) All of the mentioned

Answer: d
Explanation: None.

3. If the process can be moved during its execution from one memory segment to another, then binding must be _____
a) delayed until run time
b) preponed to compile time
c) preponed to load time
d) none of the mentioned

Answer: a
Explanation: None.

4. What is Dynamic loading?
a) loading multiple routines dynamically
b) loading a routine only when it is called
c) loading multiple routines randomly
d) none of the mentioned

Answer: b
Explanation: None.

5. What is the advantage of dynamic loading?
a) A used routine is used multiple times
b) An unused routine is never loaded
c) CPU utilization increases
d) All of the mentioned

Answer: b
Explanation: None.

6. The idea of overlays is to _____
a) data that are needed at any given time
b) enable a process to be larger than the amount of memory allocated to it
c) keep in memory only those instructions
d) all of the mentioned

Answer: d
Explanation: None.

7. The _____ must design and program the overlay structure.
a) programmer
b) system architect
c) system designer
d) none of the mentioned

Answer: a

Explanation: None.

8. The _____ swaps processes in and out of the memory.
a) Memory manager
b) CPU
c) CPU manager
d) User

Answer: a
Explanation: None.

9. If a higher priority process arrives and wants service, the memory manager can swap out the lower priority process to execute the higher priority process. When the higher priority process finishes, the lower priority process is swapped back in and continues execution. This variant of swapping is sometimes called?
a) priority swapping
b) pull out, push in
c) roll out, roll in
d) none of the mentioned

Answer: c
Explanation: None.

10. If binding is done at assembly or load time, then the process _____ be moved to different locations after being swapped out and in again.
a) can
b) must
c) can never
d) may

Answer: c
Explanation: None.

11. In a system that does not support swapping _____
a) the compiler normally binds symbolic addresses (variables) to relocatable addresses
b) the compiler normally binds symbolic addresses to physical addresses
c) the loader binds relocatable addresses to physical addresses
d) binding of symbolic addresses to physical addresses normally takes place during execution

Answer: a
Explanation: None.

12. Which of the following is TRUE?
a) Overlays are used to increase the size of physical memory
b) Overlays are used to increase the logical address space
c) When overlays are used, the size of a process is not limited to the size of the physical memory
d) Overlays are used whenever the physical address space is smaller than the logical address space

Answer: c
Explanation: None.

1. The address generated by the CPU is referred to as _____
a) Physical address
b) Logical address
c) Neither physical nor logical
d) None of the mentioned

Answer: b
Explanation: None.

2. The address loaded into the memory address register of the memory is referred to as _____
a) Physical address
b) Logical address
c) Neither physical nor logical
d) None of the mentioned

Answer: a
Explanation: None.

3. The run time mapping from virtual to physical addresses is done by a hardware device called the _____
a) Virtual to physical mapper
b) Memory management unit
c) Memory mapping unit
d) None of the mentioned

Answer: b
Explanation: None.

4. The base register is also known as the _____
a) basic register
b) regular register
c) relocation register
d) delocation register

Answer: c
Explanation: None.

5. The size of a process is limited to the size of _____
a) physical memory
b) external storage
c) secondary storage
d) none of the mentioned

Answer: a
Explanation: None.

6. If execution time binding is being used, then a process _____ be swapped to a different memory space.
a) has to be
b) can never
c) must
d) may

Answer: d
Explanation: None.

7. Swapping requires a _____
a) motherboard
b) keyboard
c) monitor
d) backing store

Answer: d
Explanation: None.

8. The backing store is generally a _____
a) fast disk
b) disk large enough to accommodate copies of all memory images for all users
c) disk to provide direct access to the memory images

d) all of the mentioned

Answer: d
Explanation: None.

9. The _____ consists of all processes whose memory images are in the backing store or in memory and are ready to run.
a) wait queue
b) ready queue
c) cpu
d) secondary storage

Answer: b
Explanation: None.

10. The _____ time in a swap out of a running process and swap in of a new process into the memory is very high.
a) context – switch
b) waiting
c) execution
d) all of the mentioned

Answer: a
Explanation: None.

11. The major part of swap time is _____ time.
a) waiting
b) transfer
c) execution
d) none of the mentioned

Answer: b
Explanation: None.

12. Swapping _____ be done when a process has pending I/O, or has to execute I/O operations only into operating system buffers.
a) must
b) can
c) must never
d) maybe

Answer: c
Explanation: None.

13. Swap space is allocated _____
a) as a chunk of disk
b) separate from a file system
c) into a file system
d) all of the mentioned

Answer: a
Explanation: None.

1. CPU fetches the instruction from memory according to the value of _____
a) program counter
b) status register
c) instruction register
d) program status word

Answer: a
Explanation: None.

2. A memory buffer used to accommodate a speed differential is called _____
a) stack pointer
b) cache
c) accumulator
d) disk buffer

Answer: b
Explanation: None.

3. Which one of the following is the address generated by CPU?
a) physical address
b) absolute address
c) logical address
d) none of the mentioned

Answer: c
Explanation: None.

4. Run time mapping from virtual to physical address is done by _____
a) Memory management unit
b) CPU
c) PCI
d) None of the mentioned

Answer: a
Explanation: None.

5. Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called?
a) fragmentation
b) paging
c) mapping
d) none of the mentioned

Answer: b
Explanation: None.

6. The address of a page table in memory is pointed by _____
a) stack pointer
b) page table base register
c) page register
d) program counter

Answer: b
Explanation: None.

7. Program always deals with _____
a) logical address
b) absolute address
c) physical address
d) relative address

Answer: a
Explanation: None.

8. The page table contains _____
a) base address of each page in physical memory
b) page offset
c) page size
d) none of the mentioned

Answer: a
Explanation: None.

9. What is compaction?
a) a technique for overcoming internal fragmentation
b) a paging technique
c) a technique for overcoming external fragmentation
d) a technique for overcoming fatal error

Answer: c
Explanation: None.

10. Operating System maintains the page table for _____
a) each process
b) each thread
c) each instruction
d) each address

Answer: a
Explanation: None.

1. The main memory accommodates _____
a) operating system
b) cpu
c) user processes
d) all of the mentioned

Answer: a
Explanation: None.

2. What is the operating system?
a) in the low memory
b) in the high memory
c) either low or high memory (depending on the location of interrupt vector)
d) none of the mentioned

Answer: c
Explanation: None.

3. In contiguous memory allocation _____
a) each process is contained in a single contiguous section of memory
b) all processes are contained in a single contiguous section of memory
c) the memory space is contiguous
d) none of the mentioned

Answer: a
Explanation: None.

4. The relocation register helps in _____
a) providing more address space to processes
b) a different address space to processes
c) to protect the address spaces of processes

d) none of the mentioned

Answer: c
Explanation: None.

5. With relocation and limit registers, each logical address must be _____ the limit register.
a) less than
b) equal to
c) greater than
d) none of the mentioned

Answer: a
Explanation: None.

6. The operating system and the other processes are protected from being modified by an already running process because _____
a) they are in different memory spaces
b) they are in different logical addresses
c) they have a protection algorithm
d) every address generated by the CPU is being checked against the relocation and limit registers

Answer: d
Explanation: None.

7. Transient operating system code is code that _____
a) is not easily accessible
b) comes and goes as needed
c) stays in the memory always
d) never enters the memory space

Answer: b
Explanation: None.

8. Using transient code, _____ the size of the operating system during program execution.
a) increases
b) decreases
c) changes
d) maintains

Answer: c
Explanation: None.

9. When memory is divided into several fixed sized partitions, each partition may contain _____
a) exactly one process
b) at least one process
c) multiple processes at once
d) none of the mentioned

Answer: a
Explanation: None.

10. In fixed size partition, the degree of multiprogramming is bounded by _____
a) the number of partitions
b) the CPU utilization
c) the memory size
d) all of the mentioned

Answer: a

Explanation: None

11. The first fit, best fit and worst fit are strategies to select a _____
a) process from a queue to put in memory
b) processor to run the next process
c) free hole from a set of available holes
d) all of the mentioned

Answer: c
Explanation: None.

1. In internal fragmentation, memory is internal to a partition and _____
a) is being used
b) is not being used
c) is always used
d) none of the mentioned

Answer: b
Explanation: None.

2. A solution to the problem of external fragmentation is _____
a) compaction
b) larger memory space
c) smaller memory space
d) none of the mentioned

Answer: a
Explanation: None.

3. Another solution to the problem of external fragmentation problem is to _____
a) permit the logical address space of a process to be noncontiguous
b) permit smaller processes to be allocated memory at last
c) permit larger processes to be allocated memory at last
d) all of the mentioned

Answer: a
Explanation: None.

4. If relocation is static and is done at assembly or load time, compaction _____
a) cannot be done
b) must be done
c) must not be done
d) can be done

Answer: a
Explanation: None.

5. The disadvantage of moving all process to one end of memory and all holes to the other direction, producing one large hole of available memory is _____
a) the cost incurred
b) the memory used
c) the CPU used
d) all of the mentioned

Answer: a
Explanation: None.

6. _____ is generally faster than _____ and _____

a) first fit, best fit, worst fit
b) best fit, first fit, worst fit
c) worst fit, best fit, first fit
d) none of the mentioned

Answer: a
Explanation: None.

7. External fragmentation exists when?
a) enough total memory exists to satisfy a request but it is not contiguous
b) the total memory is insufficient to satisfy a request
c) a request cannot be satisfied even when the total memory is free
d) none of the mentioned

Answer: a
Explanation: None.

8. External fragmentation will not occur when?
a) first fit is used
b) best fit is used
c) worst fit is used
d) no matter which algorithm is used, it will always occur

Answer: d
Explanation: None.

9. Sometimes the overhead of keeping track of a hole might be _____
a) larger than the memory
b) larger than the hole itself
c) very small
d) all of the mentioned

Answer: b
Explanation: None.

10. When the memory allocated to a process is slightly larger than the process, then _____
a) internal fragmentation occurs
b) external fragmentation occurs
c) both internal and external fragmentation occurs
d) neither internal nor external fragmentation occurs

Answer: a
Explanation: None.

1. Physical memory is broken into fixed-sized blocks called _____
a) frames
b) pages
c) backing store
d) none of the mentioned

Answer: a
Explanation: None.

2. Logical memory is broken into blocks of the same size called _____
a) frames
b) pages
c) backing store
d) none of the mentioned

Answer: b
Explanation: None.

3. Every address generated by the CPU is divided into two parts. They are _____
a) frame bit & page number
b) page number & page offset
c) page offset & frame bit
d) frame offset & page offset

Answer: b
Explanation: None.

4. The _____ is used as an index into the page table.
a) frame bit
b) page number
c) page offset
d) frame offset

Answer: b
Explanation: None.

5. The _____ table contains the base address of each page in physical memory.
a) process
b) memory
c) page
d) frame

Answer: c
Explanation: None.

6. The size of a page is typically _____
a) varied
b) power of 2
c) power of 4
d) none of the mentioned

Answer: b
Explanation: None.

7. If the size of logical address space is 2 to the power of m, and a page size is 2 to the power of n addressing units, then the high order _____ bits of a logical address designate the page number, and the ____ low order bits designate the page offset.
a) m, n
b) n, m
c) m – n, m
d) m – n, n

Answer: d
Explanation: None.

8. With paging there is no _____ fragmentation.
a) internal
b) external
c) either type of
d) none of the mentioned

Answer: b
Explanation: None.

9. The operating system maintains a _____ table that keeps track of how many frames have been allocated, how many are there, and how many are available.
a) page
b) mapping
c) frame
d) memory

Answer: c
Explanation: None.

10. Paging increases the _____ time.
a) waiting
b) execution
c) context – switch
d) all of the mentioned

Answer: c
Explanation: None.

11. Smaller page tables are implemented as a set of _____
a) queues
b) stacks
c) counters
d) registers

Answer: d
Explanation: None.

12. The page table registers should be built with _____
a) very low speed logic
b) very high speed logic
c) a large memory space
d) none of the mentioned

Answer: b
Explanation: None.

13. For larger page tables, they are kept in main memory and a _____ points to the page table.
a) page table base register
b) page table base pointer
c) page table register pointer
d) page table base

Answer: a
Explanation: None.

14. For every process there is a _____
a) page table
b) copy of page table
c) pointer to page table
d) all of the mentioned

Answer: a
Explanation: None.

15. Time taken in memory access through PTBR is _____
a) extended by a factor of 3
b) extended by a factor of 2

c) slowed by a factor of 3
d) slowed by a factor of 2

Answer: d
Explanation: None.

1. Each entry in a translation lookaside buffer (TLB) consists of _____
a) key
b) value
c) bit value
d) constant

Answer: a
Explanation: None.

2. If a page number is not found in the TLB, then it is known as a _____
a) TLB miss
b) Buffer miss
c) TLB hit
d) All of the mentioned

Answer: a
Explanation: None.

3. An _____ uniquely identifies processes and is used to provide address space protection for that process.
a) address space locator
b) address space identifier
c) address process identifier
d) none of the mentioned

Answer: b
Explanation: None.

4. The percentage of times a page number is found in the TLB is known as _____
a) miss ratio
b) hit ratio
c) miss percent
d) none of the mentioned

Answer: b
Explanation: None.

5. Memory protection in a paged environment is accomplished by _____
a) protection algorithm with each page
b) restricted access rights to users
c) restriction on page visibility
d) protection bit with each page

Answer: d
Explanation: None.

6. When the valid – invalid bit is set to valid, it means that the associated page _____
a) is in the TLB
b) has data in it
c) is in the process's logical address space
d) is the system's physical address space

Answer: c

Explanation: None.

7. Illegal addresses are trapped using the _____ bit.
a) error
b) protection
c) valid – invalid
d) access

Answer: c
Explanation: None.

8. When there is a large logical address space, the best way of paging would be _____
a) not to page
b) a two level paging algorithm
c) the page table itself
d) all of the mentioned

Answer: b
Explanation: None.

9. In a paged memory, the page hit ratio is 0.35. The required to access a page in secondary memory is equal to 100 ns. The time required to access a page in primary memory is 10 ns. The average time required to access a page is?
a) 3.0 ns
b) 68.0 ns
c) 68.5 ns
d) 78.5 ns

Answer: c
Explanation: None.

10. To obtain better memory utilization, dynamic loading is used. With dynamic loading, a routine is not loaded until it is called. For implementing dynamic loading _____
a) special support from hardware is required
b) special support from operating system is essential
c) special support from both hardware and operating system is essential
d) user programs can implement dynamic loading without any special support from hardware or operating system

Answer: d
Explanation: None.

11. In paged memory systems, if the page size is increased, then the internal fragmentation generally _____
a) becomes less
b) becomes more
c) remains constant
d) none of the mentioned

Answer: b
Explanation: None.

1. In segmentation, each address is specified by _____
a) a segment number & offset
b) an offset & value
c) a value & segment number
d) a key & value

Answer: a
Explanation: None.

2. In paging the user provides only _____ which is partitioned by the hardware into _____ and _____
a) one address, page number, offset
b) one offset, page number, address
c) page number, offset, address
d) none of the mentioned

Answer: a
Explanation: None.

3. Each entry in a segment table has a _____
a) segment base
b) segment peak
c) segment value
d) none of the mentioned

Answer: a
Explanation: None.

4. The segment base contains the _____
a) starting logical address of the process
b) starting physical address of the segment in memory
c) segment length
d) none of the mentioned

Answer: b
Explanation: None.

5. The segment limit contains the _____
a) starting logical address of the process
b) starting physical address of the segment in memory
c) segment length
d) none of the mentioned

Answer: c
Explanation: None.

6. The offset 'd' of the logical address must be _____
a) greater than segment limit
b) between 0 and segment limit
c) between 0 and the segment number
d) greater than the segment number

Answer: b
Explanation: None.

7. If the offset is legal _____
a) it is used as a physical memory address itself
b) it is subtracted from the segment base to produce the physical memory address
c) it is added to the segment base to produce the physical memory address
d) none of the mentioned

Answer: a
Explanation: None.

8. When the entries in the segment tables of two different processes point to the same physical location _____
a) the segments are invalid
b) the processes get blocked

c) segments are shared
d) all of the mentioned

Answer: c
Explanation: None.

9. The protection bit is 0/1 based on _____
a) write only
b) read only
c) read – write
d) none of the mentioned

Answer: c
Explanation: None.

10. If there are 32 segments, each of size 1Kb, then the logical address should have _____
a) 13 bits
b) 14 bits
c) 15 bits
d) 16 bits

Answer: a
Explanation: To specify a particular segment, 5 bits are required. To select a particular byte after selecting a page, 10 more bits are required. Hence 15 bits are required.

11. Consider a computer with 8 Mbytes of main memory and a 128K cache. The cache block size is 4 K. It uses a direct mapping scheme for cache management. How many different main memory blocks can map onto a given physical cache block?
a) 2048
b) 256
c) 64
d) 8

Answer: c
Explanation: None.

12. A multilevel page table is preferred in comparison to a single level page table for translating virtual address to physical address because _____
a) it reduces the memory access time to read or write a memory location
b) it helps to reduce the size of page table needed to implement the virtual address space of a process
c) it is required by the translation lookaside buffer
d) it helps to reduce the number of page faults in page replacement algorithms

Answer: b
Explanation: None.

1. If one or more devices use a common set of wires to communicate with the computer system, the connection is called _____
a) CPU
b) Monitor
c) Wirefull
d) Bus

Answer: d
Explanation: None.

2. A ____ a set of wires and a rigidly defined protocol that specifies a set of messages that can be sent on the wires.
a) port

b) node
c) bus
d) none of the mentioned

Answer: c
Explanation: None.

3. When device A has a cable that plugs into device B, and device B has a cable that plugs into device C and device C plugs into a port on the computer, this arrangement is called a _____
a) port
b) daisy chain
c) bus
d) cable

Answer: b
Explanation: None.

4. The _____ present a uniform device-access interface to the I/O subsystem, much as system calls provide a standard interface between the application and the operating system.
a) Devices
b) Buses
c) Device drivers
d) I/O systems

Answer: c
Explanation: None.

5. A _____ is a collection of electronics that can operate a port, a bus, or a device.
a) controller
b) driver
c) host
d) bus

Answer: a
Explanation: None.

6. An I/O port typically consists of four registers status, control, _____ and _____ registers.
a) system in, system out
b) data in, data out
c) flow in, flow out
d) input, output

Answer: b
Explanation: None.

7. The _____ register is read by the host to get input.
a) flow in
b) flow out
c) data in
d) data out

Answer: c
Explanation: None.

8. The _____ register is written by the host to send output.
a) status
b) control
c) data in

d) data out

Answer: d
Explanation: None.

9. The hardware mechanism that allows a device to notify the CPU is called _____
a) polling
b) interrupt
c) driver
d) controlling

Answer: b
Explanation: None.

10. The CPU hardware has a wire called _____ that the CPU senses after executing every instruction.
a) interrupt request line
b) interrupt bus
c) interrupt receive line
d) interrupt sense line

Answer: a
Explanation: None.

11. The _____ determines the cause of the interrupt, performs the necessary processing and executes a return from the interrupt instruction to return the CPU to the execution state prior to the interrupt.
a) interrupt request line
b) device driver
c) interrupt handler
d) all of the mentioned

Answer: c
Explanation: None.

12. In general the two interrupt request lines are _____
a) maskable & non maskable interrupts
b) blocked & non maskable interrupts
c) maskable & blocked interrupts
d) none of the mentioned

Answer: a
Explanation: None.

13. The _____ are reserved for events such as unrecoverable memory errors.
a) non maskable interrupts
b) blocked interrupts
c) maskable interrupts
d) none of the mentioned

Answer: a
Explanation: None.

1. The _____ can be turned off by the CPU before the execution of critical instruction sequences that must not be interrupted.
a) nonmaskable interrupt
b) blocked interrupt
c) maskable interrupt
d) none of the mentioned

Answer: c
Explanation: None.

2. The _____ is used by device controllers to request service.
a) nonmaskable interrupt
b) blocked interrupt
c) maskable interrupt
d) none of the mentioned

Answer: c
Explanation: None.

3. The interrupt vector contains _____
a) the interrupts
b) the memory addresses of specialized interrupt handlers
c) the identifiers of interrupts
d) the device addresses

Answer: b
Explanation: None.

4. Division by zero, accessing a protected or non existent memory address, or attempting to execute a privileged instruction from user mode are all categorized as _____
a) errors
b) exceptions
c) interrupt handlers
d) all of the mentioned

Answer: b
Explanation: None.

5. For large data transfers, _____ is used.
a) dma
b) programmed I/O
c) controller register
d) none of the mentioned

Answer: a
Explanation: None.

6. A character stream device transfers _____
a) bytes one by one
b) block of bytes as a unit
c) with unpredictable response times
d) none of the mentioned

Answer: a
Explanation: None.

7. A block device transfers _____
a) bytes one by one
b) block of bytes as a unit
c) with unpredictable response times
d) none of the mentioned

Answer: b
Explanation: None.

8. What is a dedicated device?
a) opposite to a sharable device
b) same as a sharable device
c) can be used concurrently by several processes
d) none of the mentioned

Answer: a
Explanation: None.

9. A keyboard is an example of a device that is accessed through a _____ interface.
a) block stream
b) set of blocks
c) character stream
d) none of the mentioned

Answer: c
Explanation: None.

10. In polling _____
a) busy – wait cycles wait for I/O from device
b) interrupt handler receives interrupts
c) interrupt-request line is triggered by I/O device
d) all of the mentioned

Answer: a
Explanation: None.

11. A non blocking system call _____
a) halts the execution of the application for an extended time
b) does not halt the execution of the application
c) does not block the interrupts
d) none of the mentioned

Answer: b
Explanation: None.

12. An asynchronous call _____
a) returns immediately, without waiting for the I/O to complete
b) does not return immediately and waits for the I/O to complete
c) consumes a lot of time
d) is too slow

Answer: a
Explanation: None.

1. Buffering is done to _____
a) cope with device speed mismatch
b) cope with device transfer size mismatch
c) maintain copy semantics
d) all of the mentioned

Answer: d
Explanation: None.

2. Caching is _____ spooling.
a) same as
b) not the same as
c) all of the mentioned

d) none of the mentioned

Answer: b
Explanation: None.

3. Caching _____
a) holds a copy of the data
b) is fast memory
c) holds the only copy of the data
d) holds output for a device

Answer: a
Explanation: None.

4. Spooling _____
a) holds a copy of the data
b) is fast memory
c) holds the only copy of the data
d) holds output for a device

Answer: c
Explanation: None.

5. The _____ keeps state information about the use of I/O components.
a) CPU
b) OS
c) kernel
d) shell

Answer: c
Explanation: None.

6. The kernel data structures include _____
a) process table
b) open file table
c) close file table
d) all of the mentioned

Answer: b
Explanation: None.

7. Windows NT uses a _____ implementation for I/O.
a) message – passing
b) draft – passing
c) secondary memory
d) cache

Answer: a
Explanation: None.

8. A _____ is a full duplex connection between a device driver and a user level process.
a) Bus
b) I/O operation
c) Stream
d) Flow

Answer: c
Explanation: None.

9. I/O is a _____ in system performance.
a) major factor
b) minor factor
c) does not matter
d) none of the mentioned

Answer: a
Explanation: None.

10. If the number of cycles spent busy – waiting is not excessive, then _____
a) interrupt driven I/O is more efficient than programmed I/O
b) programmed I/O is more efficient than interrupt driven I/O
c) both programmed and interrupt driven I/O are equally efficient
d) none of the mentioned

Answer: b
Explanation: None.

1. In real time operating system _____
a) all processes have the same priority
b) a task must be serviced by its deadline period
c) process scheduling can be done only once
d) kernel is not required

Answer: b
Explanation: None.

2. Hard real time operating system has _____ jitter than a soft real time operating system.
a) less
b) more
c) equal
d) none of the mentioned

Answer: a
Explanation: Jitter is the undesired deviation from the true periodicity.

3. For real time operating systems, interrupt latency should be _____
a) minimal
b) maximum
c) zero
d) dependent on the scheduling

Answer: a
Explanation: Interrupt latency is the time duration between the generation of interrupt and execution of its service.

4. In rate monotonic scheduling _____
a) shorter duration job has higher priority
b) longer duration job has higher priority
c) priority does not depend on the duration of the job
d) none of the mentioned

Answer: a
Explanation: None.

5. In which scheduling certain amount of CPU time is allocated to each process?
a) earliest deadline first scheduling
b) proportional share scheduling
c) equal share scheduling

d) none of the mentioned

Answer: b
Explanation: None.

6. The problem of priority inversion can be solved by _____
a) priority inheritance protocol
b) priority inversion protocol
c) both priority inheritance and inversion protocol
d) none of the mentioned

Answer: a
Explanation: None.

7. Time duration required for scheduling dispatcher to stop one process and start another is known as _____
a) process latency
b) dispatch latency
c) execution latency
d) interrupt latency

Answer: b
Explanation: None.

8. Time required to synchronous switch from the context of one thread to the context of another thread is called?
a) threads fly-back time
b) jitter
c) context switch time
d) none of the mentioned

Answer: c
Explanation: None.

9. Which one of the following is a real time operating system?
a) RTLinux
b) VxWorks
c) Windows CE
d) All of the mentioned

Answer: d
Explanation: None.

10. VxWorks is centered around _____
a) wind microkernel
b) linux kernel
c) unix kernel
d) none of the mentioned

Answer: a
Explanation: None.

1. What is the disadvantage of real addressing mode?
a) there is a lot of cost involved
b) time consumption overhead
c) absence of memory protection between processes
d) restricted access to memory locations by processes

Answer: c
Explanation: None.

2. Preemptive, priority based scheduling guarantees _____
a) hard real time functionality
b) soft real time functionality
c) protection of memory
d) none of the mentioned

Answer: b
Explanation: None.

3. Real time systems must have _____
a) preemptive kernels
b) non preemptive kernels
c) preemptive kernels or non preemptive kernels
d) neither preemptive nor non preemptive kernels

Answer: a
Explanation: None.

4. What is Event latency?
a) the amount of time an event takes to occur from when the system started
b) the amount of time from the event occurrence till the system stops
c) the amount of time from event occurrence till the event crashes
d) the amount of time that elapses from when an event occurs to when it is serviced.

Answer: d
Explanation: None.

5. Interrupt latency refers to the period of time _____
a) from the occurrence of an event to the arrival of an interrupt
b) from the occurrence of an event to the servicing of an interrupt
c) from arrival of an interrupt to the start of the interrupt service routine
d) none of the mentioned

Answer: c
Explanation: None.

6. Real time systems need to _____ the interrupt latency.
a) minimize
b) maximize
c) not bother about
d) none of the mentioned

Answer: a
Explanation: None.

7. The amount of time required for the scheduling dispatcher to stop one process and start another is known as _____
a) event latency
b) interrupt latency
c) dispatch latency
d) context switch

Answer: c
Explanation: None.

8. The most effective technique to keep dispatch latency low is to _____
a) provide non preemptive kernels
b) provide preemptive kernels

c) make it user programmed
d) run less number of processes at a time

Answer: b
Explanation: None.

9. Priority inversion is solved by use of _____
a) priority inheritance protocol
b) two phase lock protocol
c) time protocol
d) all of the mentioned

Answer: a
Explanation: None.

1. In a real time system the computer results _____
a) must be produced within a specific deadline period
b) may be produced at any time
c) may be correct
d) all of the mentioned

Answer: a
Explanation: None.

2. In a safety critical system, incorrect operation _____
a) does not affect much
b) causes minor problems
c) causes major and serious problems
d) none of the mentioned

Answer: c
Explanation: None.

3. Antilock brake systems, flight management systems, pacemakers are examples of _____
a) safety critical system
b) hard real time system
c) soft real time system
d) safety critical system and hard real time system

Answer: d
Explanation: None.

4. In a _____ real time system, it is guaranteed that critical real time tasks will be completed within their deadlines.
a) soft
b) hard
c) critical
d) none of the mentioned

Answer: b
Explanation: None.

5. Some of the properties of real time systems include _____
a) single purpose
b) inexpensively mass produced
c) small size
d) all of the mentioned

Answer: d

Explanation: None.

6. The amount of memory in a real time system is generally _____
a) less compared to PCs
b) high compared to PCs
c) same as in PCs
d) they do not have any memory

Answer: a
Explanation: None.

7. What is the priority of a real time task?
a) must degrade over time
b) must not degrade over time
c) may degrade over time
d) none of the mentioned

Answer: b
Explanation: None.

8. Memory management units _____
a) increase the cost of the system
b) increase the power consumption of the system
c) increase the time required to complete an operation
d) all of the mentioned

Answer: d
Explanation: None.

9. The technique in which the CPU generates physical addresses directly is known as _____
a) relocation register method
b) real addressing
c) virtual addressing
d) none of the mentioned

Answer: b
Explanation: None.

1. Earliest deadline first algorithm assigns priorities according to _____
a) periods
b) deadlines
c) burst times
d) none of the mentioned

Answer: b
Explanation: None.

2. A process P1 has a period of 50 and a CPU burst of t1 = 25, P2 has a period of 80 and a CPU burst of 35. The total CPU utilization is _____
a) 0.90
b) 0.74
c) 0.94
d) 0.80

Answer: c
Explanation: None.

3. A process P1 has a period of 50 and a CPU burst of t1 = 25, P2 has a period of 80 and a CPU burst of 35., the

priorities of P1 and P2 are?
a) remain the same throughout
b) keep varying from time to time
c) may or may not be change
d) none of the mentioned

Answer: b
Explanation: None.

4. A process P1 has a period of 50 and a CPU burst of t1 = 25, P2 has a period of 80 and a CPU burst of 35., can the two processes be scheduled using the EDF algorithm without missing their respective deadlines?
a) Yes
b) No
c) Maybe
d) None of the mentioned

Answer: a
Explanation: None.

5. Using EDF algorithm practically, it is impossible to achieve 100 percent utilization due to _____
a) the cost of context switching
b) interrupt handling
c) power consumption
d) all of the mentioned

Answer: a
Explanation: None.

6. T shares of time are allocated among all processes out of N shares in _____ scheduling algorithm.
a) rate monotonic
b) proportional share
c) earliest deadline first
d) none of the mentioned

Answer: b
Explanation: None.Answer: c
Explanation: None.Answer: b
Explanation: None.Answer: a
Explanation: None.Answer: b
Explanation: None.

1. To schedule the processes, they are considered _____
a) infinitely long
b) periodic
c) heavy weight
d) light weight

Answer: b
Explanation: None.

2. If the period of a process is 'p', then what is the rate of the task?
a) p^2
b) 2*p
c) 1/p
d) p

Answer: c
Explanation: None.

3. The scheduler admits a process using _____
a) two phase locking protocol
b) admission control algorithm
c) busy wait polling
d) none of the mentioned

Answer: c
Explanation: None.

4. The _____ scheduling algorithm schedules periodic tasks using a static priority policy with preemption.
a) earliest deadline first
b) rate monotonic
c) first cum first served
d) priority

Answer: b
Explanation: None.

5. Rate monotonic scheduling assumes that the _____
a) processing time of a periodic process is same for each CPU burst
b) processing time of a periodic process is different for each CPU burst
c) periods of all processes is the same
d) none of the mentioned

Answer: a
Explanation: None.

6. In rate monotonic scheduling, a process with a shorter period is assigned _____
a) a higher priority
b) a lower priority
c) higher & lower priority
d) none of the mentioned

Answer: a
Explanation: None.

7. There are two processes P1 and P2, whose periods are 50 and 100 respectively. P1 is assigned higher priority than P2. The processing times are t1 = 20 for P1 and t2 = 35 for P2. Is it possible to schedule these tasks so that each meets its deadline using Rate monotonic scheduling?
a) yes
b) no
c) maybe
d) none of the mentioned

Answer: a
Explanation: None.

8. If a set of processes cannot be scheduled by rate monotonic scheduling algorithm, then _____
a) they can be scheduled by EDF algorithm
b) they cannot be scheduled by EDF algorithm
c) they cannot be scheduled by any other algorithm
d) none of the mentioned

Answer: c
Explanation: None.

9. A process P1 has a period of 50 and a CPU burst of t1 = 25, P2 has a period of 80 and a CPU burst of 35. The total CPU utilization is?

a) 0.90
b) 0.74
c) 0.94
d) 0.80

Answer: c
Explanation: None.

10. A process P1 has a period of 50 and a CPU burst of t1 = 25, P2 has a period of 80 and a CPU burst of 35. Can the processes be scheduled without missing the deadlines?
a) Yes
b) No
c) Maybe
d) None of the mentioned

Answer: b
Explanation: None.

1. What is multimedia file?
a) is same as any other regular file
b) must be accessed at specific rate
c) stored on remote server can not be delivered to its client
d) none of the mentioned

Answer: b
Explanation: None.

2. In which type of streaming multimedia file is delivered to the client, but not shared?
a) real-time streaming
b) progressive download
c) compression
d) none of the mentioned

Answer: a
Explanation: None.

3. Which one of the following is the characteristic of a multimedia system?
a) high storage
b) high data rates
c) both high storage and high data rates
d) none of the mentioned

Answer: c
Explanation: None.

4. The delay that occur during the playback of a stream is called _____
a) stream delay
b) playback delay
c) jitter
d) event delay

Answer: c
Explanation: None.

5. Which algorithm can be optimized to meet the timing deadlines and rate requirements of continuous media?
a) Earliest-Deadline-First scheduling
b) SCAN-EDF scheduling
c) Both Earliest-Deadline-First scheduling & SCAN-EDF scheduling

d) None of the mentioned

Answer: c
Explanation: None.

6. Real time streaming protocol is used _____
a) to control streaming media servers
b) for establishing and controlling media sessions between endpoints
c) to provide real time control of playback of media files from the server
d) all of the mentioned

Answer: d
Explanation: None.

7. In teardown state of real time streaming protocol is _____
a) the server resources for client
b) server delivers the stream to client
c) server suspends delivery of stream
d) server breaks down the connection

Answer: d
Explanation: None.

8. CineBlitz multimedia server supports _____
a) real time clients
b) non-real time clients
c) both real time & non-real time clients
d) none of the mentioned

Answer: c
Explanation: None.

9. Multimedia system require hard real time scheduling _____
a) to ensure critical tasks will be serviced within timing deadlines
b) to deliver the media file to the client
c) to minimize the delay
d) for security

Answer: a
Explanation: None.

10. Which one of the following resource is not necessarily required on a file server?
a) secondary storage
b) processor
c) network
d) monitor

Answer: d
Explanation: None.

1. The major difference between a multimedia file and a regular file is _____
a) the size
b) the attributes
c) the ownership
d) the rate at which the file must be accessed

Answer: d
Explanation: Multimedia files must be accessed at a specific rate whereas accessing regular files requires no special

timings.

2. Video is represented as a series of images formally known as _____
a) pics
b) shots
c) frames
d) snaps

Answer: c
Explanation: None.

3. The faster the frames are displayed, _____
a) the rougher the video appears
b) the smoother the video appears
c) it gets blurry
d) none of the mentioned

Answer: b
Explanation: None.

4. The characteristic of the eye to retain the image for a short time after it has been presented is known as _____
a) persistence of vision
b) learning power
c) memory mapped input
d) none of the mentioned

Answer: a
Explanation: None.

5. When will Local playback be used?
a) the multimedia data are delivered from a local file system
b) a computer next to you is playing something
c) a multimedia file is being played on a system in the local network
d) none of the mentioned

Answer: a
Explanation: None.

6. Multimedia files stored on a remote server are delivered to a client across the network using a technique known as _____
a) download
b) streaming
c) flowing
d) leaking

Answer: b
Explanation: None.

7. What are the two types of streaming techniques?
a) progressive download & real time streaming
b) regular download & real time streaming
c) real time & virtual time streaming
d) virtual time streaming

Answer: a
Explanation: None.

8. A media file containing audio or video is downloaded and stored on the client's local file system in _____
a) progressive download
b) regular download
c) real time streaming
d) virtual time streaming

Answer: a
Explanation: As the file is being downloaded, the client is able to play back the media file without having to wait for the file to be downloaded in its entirety.

9. Progressive download is most useful for _____
a) short video clips
b) long video clips
c) extremely long and high quality videos
d) none of the mentioned

Answer: a
Explanation: None.

10. The media file is streamed to the client but is only played and not stored by the client in _____
a) progressive download
b) regular download
c) real time streaming
d) virtual time streaming

Answer: c
Explanation: None.

11. Real time streaming is most useful for _____
a) short video clips
b) long video clips
c) extremely short and low quality videos
d) none of the mentioned

Answer: b
Explanation: None.

1. The ability to move around within a media stream is known as _____
a) buffering
b) random access
c) access
d) sequential access

Answer: b
Explanation: None.

2. What are the two types of real time streaming?
a) live & on demand streaming
b) dead & static streaming
c) static & on demand streaming
d) on demand streaming

Answer: a
Explanation: None.

3. Random access is not allowed in _____
a) live streaming
b) dead streaming

c) static streaming
d) on demand streaming

Answer: a
Explanation: None.

4. The streaming that takes place as the event is occurring is _____
a) live streaming
b) dead streaming
c) static streaming
d) on demand streaming

Answer: d
Explanation: None.

5. For a computer to deliver continuous media it must guarantee the specific rate and timing requirements, also known as _____
a) deadline
b) quality of service
c) period
d) burst time

Answer: b
Explanation: None.

6. For QOS to be implemented properly _____
a) file systems must be efficient to meet the rate requirements of continuous media
b) network protocols must support bandwidth requirements while minimizing delay and jitter
c) all of the mentioned
d) none of the mentioned

Answer: c
Explanation: None.

7. What will happen once a file is compressed?
a) it has a better quality
b) it takes up less space for storage
c) it cannot be delivered to the client more quickly
d) none of the mentioned

Answer: b
Explanation: None.

8. Compression ratio is the ratio of _____
a) the original file size to the size of the compressed file
b) the number of pixels in a frame of the original size to those in a frame of the compressed file
c) compressed file size to the original file size
d) none of the mentioned

Answer: a
Explanation: None.

9. Lossy and lossless are classifications of _____
a) multimedia storage systems
b) files
c) compression algorithms
d) all of the mentioned

Answer: c
Explanation: None.

10. Lossy techniques provide _____ when compared to lossless techniques.
a) lower compression ratios
b) much higher compression ratios
c) similar compression ratios
d) none of the mentioned

Answer: b
Explanation: None.

1. What is the full form of MPEG?
a) Motion Pictures Engineering Group
b) Motion Picture Engineers Group
c) Motion Picture Experts Group
d) None of the mentioned

Answer: c
Explanation: None.

2. What is MPEG compression?
a) stores the compression values of each frame
b) stores the differences between successive frames
c) stores multiple frames' values together
d) none of the mentioned

Answer: b
Explanation: None.

3. What are the levels in QoS?
a) Best effort service
b) Soft QoS
c) Hard QoS
d) All of the mentioned

Answer: d
Explanation: None.

4. The level that treats different types of traffics in different ways, giving certain traffic streams higher priority than other streams and with best efforts, but no guarantees are made _____
a) Best effort service
b) Soft QoS
c) Worst effort service
d) Hard QoS

Answer: b
Explanation: None.

5. The quality of service requirements are guaranteed in _____
a) Best effort service
b) Soft QoS
c) Worst effort service
d) Hard QoS

Answer: d
Explanation: None.

6. What are the factors that define QoS?
a) Throughput
b) Jitter
c) Delay
d) All of the mentioned

Answer: d
Explanation: None.

7. Delay and Jitter _____
a) mean the same thing
b) are two completely different things
c) all of the mentioned
d) none of the mentioned

Answer: b
Explanation: None.

8. What is the Delay?
a) the time from when a request is first submitted to when the desired result is produced
b) the delay that occurs during playback of the stream
c) how the errors are handled during the transmission and processing of continuous media
d) none of the mentioned

Answer: a
Explanation: None.

9. What is Admission control?
a) the delay that occurs during playback of the stream
b) the practice of admitting a request for service only if the server has sufficient resources to satisfy the request
c) how the errors are handled during the transmission and processing of continuous media
d) none of the mentioned

Answer: b
Explanation: None.

10. An admission control scheme assigns a _____ to each type of resource.
a) processor
b) memory location
c) resource manager
d) all of the mentioned

Answer: c
Explanation: None.

1. A scheduling algorithm can use either _____ priority or _____ priority.
a) static, still
b) static, dynamic
c) live, dead
d) none of the mentioned

Answer: b
Explanation: None.

2. The priority of a process will _____ if the scheduler assigns it a static priority.
a) change
b) remain unchanged
c) depends on the operating system

d) none of the mentioned

Answer: b
Explanation: None.

3. As disks have relatively low transfer rates and relatively high latency rates, disk schedulers must reduce latency times to _____
a) ensure high bandwidth
b) ensure low bandwidth
c) make sure data is transferred
d) reduce data transfer speeds

Answer: a
Explanation: None.

4. Servicing requests strictly according to deadline using EDF may result in _____
a) lower seek times
b) lower bandwidth
c) higher seek time
d) higher bandwidth

Answer: c
Explanation: None.

5. The hybrid algorithm that combines EDF with SCAN algorithm is known as _____
a) EDS
b) SDF
c) SCAN-EDF
d) None of the mentioned

Answer: c
Explanation: None.

6. If several requests have different deadlines that are relatively close together, then using the SCAN – EDF algorithm _____
a) the SCAN ordering will service the requests in that batch
b) the EDF ordering will service the requests in that batch
c) the FCFS ordering will service the requests in that batch
d) none of the mentioned

Answer: a
Explanation: None.

7. Multimedia systems require _____ scheduling to ensure critical tasks will be serviced within timing deadlines.
a) soft real time
b) hard real time
c) normal
d) none of the mentioned

Answer: b
Explanation: None.

8. The EDF scheduler uses _____ to order requests according to their deadlines.
a) stack
b) disks
c) queue
d) none of the mentioned

Answer: c
Explanation: None.

9. In SCAN – EDF, requests with the same deadlines are ordered according to _____
a) SCAN policy
b) EDF policy
c) FCFS policy
d) FIFO policy

Answer: a
Explanation: None.

1. The three general methods for delivering content from a server to a client across a network are _____
a) unicasting
b) multicasting
c) broadcasting
d) all of the mentioned

Answer: d
Explanation: None.

2. Unicasting delivers the content to _____
a) a single client
b) all clients, regardless whether they want the content or not
c) a group of receivers who indicate they wish to receive the content
d) none of the mentioned

Answer: a
Explanation: None.

3. Broadcasting delivers the content to _____
a) a single client
b) all clients, regardless whether they want the content or not
c) a group of receivers who indicate they wish to receive the content
d) none of the mentioned

Answer: b
Explanation: None.

4. Multicasting delivers the content to _____
a) a single client
b) all clients, regardless whether they want the content or not
c) a group of receivers who indicate they wish to receive the content
d) none of the mentioned

Answer: c
Explanation: None.

5. RTSP stands for _____
a) Real Time Streaming Policy
b) Real Time Streaming Protocol
c) Real Time Systems Protocol
d) Read Time Streaming Policy

Answer: b
Explanation: None.

6. HTTP is _____

a) a stateful protocol
b) a stateless protocol
c) a protocol that maintains the status of its connection with the client
d) a stateless protocol that does not maintain the status of its connection with the client

Answer: d
Explanation: None.

7. RTSP includes which of the following states?
a) SETUP
b) PLAY
c) PAUSE
d) All of the mentioned

Answer: d
Explanation: None.

8. In the SETUP state _____
a) the server is setup
b) the client is setup
c) the server allocates resources for the client session
d) the client sends requests to the server

Answer: c
Explanation: None.

9. In the TEARDOWN state _____
a) the server breaks down the connection and releases the resources allocated for the session
b) the client breaks down the connection and releases the resources allocated for the session
c) the system crashes
d) none of the mentioned

Answer: a
Explanation: None.

10. RTP stands for _____
a) real time protocol
b) real time transmission control protocol
c) real time transmission protocol
d) real time transport protocol

Answer: d
Explanation: None.

11. The problem with unicast delivery is that the _____
a) memory allocation is difficult
b) server must establish a separate unicast session for each client
c) the routers must support unicasting
d) the clients must be close to the server

Answer: b
Explanation: None.

12. The difficulty with multicasting from a practical point of view is _____
a) memory allocation is difficult
b) server must establish a separate unicast session for each client
c) the routers must support multicasting
d) none of the mentioned

Answer: c
Explanation: None.

13. To let a client have random access to a media stream with _____
a) the protocol used must not be stateless
b) the server must support download
c) the stream should give access rights to the client
d) all of the mentioned

Answer: a
Explanation: None.

1. Which of the following are forms of malicious attack?
a) Theft of information
b) Modification of data
c) Wiping of information
d) All of the mentioned

Answer: d
Explanation: None.

2. What are the common security threats?
a) File Shredding
b) File sharing and permission
c) File corrupting
d) File integrity

Answer: b
Explanation: Sharing and associated permissions are usual exploits which can compromise the system.

3. From the following, which is not a common file permission?
a) Write
b) Execute
c) Stop
d) Read

Answer: c
Explanation: None.

4. Which of the following is a good practice?
a) Give full permission for remote transferring
b) Grant read only permission
c) Grant limited permission to specified account
d) Give both read and write permission but not execute

Answer: c
Explanation: Limited access is a key method to circumvent unauthorized access and exploits.

5. What is not a good practice for user administration?
a) Isolating a system after a compromise
b) Perform random auditing procedures
c) Granting privileges on a per host basis
d) Using telnet and FTP for remote access

Answer: d
Explanation: Telnet and FTP are not encrypted and can be compromised.

6. Which of the following is the least secure method of authentication?

a) Key card
b) fingerprint
c) retina pattern
d) Password

Answer: d
Explanation: Passwords can be compromised more easily than to replicate a physical thing like key card, fingerprint or retina.

7. Which of the following is a strong password?
a) 19thAugust88
b) Delhi88
c)
d) !augustdelhi

Answer: c
Explanation: It has a combination of Alphabet both capital and small along with number and special character. Thus always use complex password with a combination of all these.

8. Why is one time password safe?
a) It is easy to generated
b) It cannot be shared
c) It is different for every access
d) It is a complex encrypted password

Answer: c
Explanation: One time password is safe since it is generated per access and thus cannot be brute forced or deduced.

9. What does Light Directory Access Protocol (LDAP) doesn't store?
a) Users
b) Address
c) Passwords
d) Security Keys

Answer: b
Explanation: None.

10. What is characteristic of RADIUS system?
a) It is essential for centralized encryption and authentication
b) It works on Network layer to deny access to unauthorized people
c) It provides centralized authentication mechanism via network devices
d) It's a strong File access system

Answer: c
Explanation: None.

11. Which happens first authorization or authentication?
a) Authorization
b) Authentication
c) Authorization & Authentication are same
d) None of the mentioned

Answer: a
Explanation: None.

12. What are the characteristics of Authorization?
a) RADIUS and RSA
b) 3 way handshaking with syn and fin

c) Multilayered protection for securing resources
d) Deals with privileges and rights

Answer: d
Explanation: None.

13. What forces the user to change password at first login?
a) Default behavior of OS
b) Part of AES encryption practice
c) Devices being accessed forces the user
d) Account administrator

Answer: d
Explanation: Its administrator's job to ensure that password of the user remains private and is known only to user. But while making a new user account he assigns a random general password to give it to user. Thus even administrator cannot access a particular users account.

14. What is not a best practice for password policy?
a) Deciding maximum age of password
b) Restriction on password reuse and history
c) Password encryption
d) Having change password every 2 years

Answer: d
Explanation: Old passwords are more vulnerable to being misplaced or compromised. Passwords should be changed periodically to enhance security.

1. What is the breach of integrity?
a) This type of violation involves unauthorized reading of data
b) This violation involves unauthorized modification of data
c) This violation involves unauthorized destruction of data
d) This violation involves unauthorized use of resources

Answer: b
Explanation: None.

2. What is breach of confidentiality?
a) This type of violation involves unauthorized reading of data
b) This violation involves unauthorized modification of data
c) This violation involves unauthorized destruction of data
d) This violation involves unauthorized use of resources

Answer: a
Explanation: None.

3. What is theft of service?
a) This type of violation involves unauthorized reading of data
b) This violation involves unauthorized modification of data
c) This violation involves unauthorized destruction of data
d) This violation involves unauthorized use of resources

Answer: d
Explanation: None.

4. What is breach of availability?
a) This type of violation involves unauthorized reading of data
b) This violation involves unauthorized modification of data
c) This violation involves unauthorized destruction of data

d) This violation involves unauthorized use of resources

Answer: c
Explanation: None.

5. What is Trojan horse?
a) It is a useful way to encrypt password
b) It is a user which steals valuable information
c) It is a rogue program which tricks users
d) It's a brute force attack algorithm

Answer: c
Explanation: None.

6. What is trap door?
a) IT is trap door in WarGames
b) It is a hole in software left by designer
c) It is a Trojan horse
d) It is a virus which traps and locks user terminal

Answer: b
Explanation: None.

7. Which mechanism is used by worm process?
a) Trap door
b) Fake process
c) Spawn Process
d) VAX process

Answer: c
Explanation: None.

8. Which of the following is not a characteristic of a virus?
a) Virus destroy and modify user data
b) Virus is a standalone program
c) Virus is a code embedded in a legitimate program
d) Virus cannot be detected

Answer: d
Explanation: Virus can be detected by having an antivirus program.

9. What is known as masquerading?
a) When one participant in communication pretends to be someone else
b) When attacker modifies data in communication
c) When attack is of fraudulent repeat of a valid data
d) When attack gains access to remote systems

Answer: a
Explanation: None.

10. Who unleashed famous worm attack in 1988 which effected UNIX systems and caused losses in millions?
a) Robert Morris
b) Bob Milano
c) Mark zuckerberg
d) Bill Gates

Answer: a
Explanation: None.

11. What is port scanning?
a) It is a software used to scan system for attack
b) It is a software application designed to probe a server or host for open ports
c) It is software used to scan system for introducing attacks by brute force
d) None of the mentioned

Answer: b
Explanation: None.

12. Which is not a port scan type?
a) TCP scanning
b) SYN scanning
c) UDP scanning
d) SYSTEM Scanning

Answer: d
Explanation: None.

13. Which is not a valid port scan type?
a) ACK scanning
b) Window scanning
c) IGMP scan
d) FIN scanning

Answer: c
Explanation: None.

14. What are zombie systems?
a) Are specific system which are designed to attack by manufacturer
b) They are network of known hacking group
c) These systems are previously compromised independent systems
d) None of the mentioned

Answer: c
Explanation: None.

15. What is known as a DOS attack?
a) It is attacked to block traffic of network
b) It is attacked to harm contents stored in HDD by worm spawn processes
c) It is an attempt to make a machine or network resource unavailable
d) None of the mentioned

Answer: c
Explanation: None.

16. With regard to DOS attack what is not true from below options?
a) We can stop DOS attack completely
b) By upgrading OS vulnerability we can stop DOS attack to some extent
c) DOS attack has to be stopped at network level
d) Such attack can last for hours

Answer: a
Explanation: None.

1. What is not an important part of security protection?
a) Large amount of RAM to support antivirus
b) Strong passwords
c) Audit log periodically

d) Scan for unauthorized programs in system directories

Answer: a
Explanation: RAM has no effect on security of a system. System's protection remains unchanged in increasing or decreasing amount of RAM.

2. What is used to protect network from outside internet access?
a) A trusted antivirus
b) 24 hours scanning for virus
c) Firewall to separate trusted and untrusted network
d) Deny users access to websites which can potentially cause security leak

Answer: c
Explanation: Firewall create a protective barrier to secure internal network. An antivirus can only detect harmful viruses but cannot stop illegal access by remote attacker.

3. What is the best practice in the firewall domain environment?
a) Create two domain trusted and untrusted domain
b) Create strong policy in firewall to support different types of users
c) Create a Demilitarized zone
d) Create two DMZ zones with one untrusted domain

Answer: c
Explanation: All live servers or workstations are kept in a separate zone than inside and outside to enhance protection.

4. Which direction access cannot happen using DMZ zone by default?
a) Company computer to DMZ
b) Internet to DMZ
c) Internet to company computer
d) Company computer to internet

Answer: c
Explanation: Connection from internet is never allowed to directly access internal PCs but is routed through DMZ zone to prevent attacks.

5. What are the two features of a tripwire file system?
a) It is a tool to monitor file systems
b) It is used to automatically take corrective action
c) It is used to secure UNIX system
d) None of the mentioned

Answer: a
Explanation: None.

6. How do viruses avoid basic pattern match of antivirus?
a) They are encrypted
b) They act with special permissions
c) They modify themselves
d) None of the mentioned

Answer: c
Explanation: None.

7. How does an antivirus of today identify viruses?
a) Previously known patterns
b) It can detect unknown patterns
c) It can take high priority to increase scanning speed
d) None of the mentioned

Answer: a
Explanation: None.

8. What is known as a sandbox?
a) It is a program which can be molded to do the desired task
b) It is a program that is controlled or emulated section of OS
c) It is a special mode of antivirus
d) None of the mentioned

Answer: b
Explanation: None.

9. What is are two safe computing practices?
a) Not to open software from unknown vendors
b) Open and execute programs in admin level/root
c) Open and execute programs in presence of antivirus
d) None of the mentioned

Answer: a
Explanation: Disgruntled employees have in past infected the master copies of software programs to do economic harm to the company.

1. What are the different ways to intrude?
a) Buffer overflows
b) Unexpected combinations and unhandled input
c) Race conditions
d) All of the mentioned

Answer: d
Explanation: None.

2. What are the major components of the intrusion detection system?
a) Analysis Engine
b) Event provider
c) Alert Database
d) All of the mentioned

Answer: d
Explanation: None.

3. What are the different ways to classify an IDS?
a) anomaly detection
b) signature based misuse
c) stack based
d) all of the mentioned

Answer: d
Explanation: None.

4. What are the different ways to classify an IDS?
a) Zone based
b) Host & Network based
c) Network & Zone based
d) Level based

Answer: b
Explanation: None.

5. What are the characteristics of anomaly based IDS?
a) It models the normal usage of network as a noise characterization
b) It doesn't detect novel attacks
c) Anything distinct from the noise is not assumed to be intrusion activity
d) It detects based on signature

Answer: a
Explanation: None.

6. What is the major drawback of anomaly detection IDS?
a) These are very slow at detection
b) It generates many false alarms
c) It doesn't detect novel attacks
d) None of the mentioned

Answer: b
Explanation: None.

7. What are the characteristics of signature based IDS?
a) Most are based on simple pattern matching algorithms
b) It is programmed to interpret a certain series of packets
c) It models the normal usage of network as a noise characterization
d) Anything distinct from the noise is assumed to be intrusion activity

Answer: a
Explanation: None.

8. What are the drawbacks of signature based IDS?
a) They are unable to detect novel attacks
b) They suffer from false alarms
c) They have to be programmed again for every new pattern to be detected
d) All of the mentioned

Answer: d
Explanation: None.

9. What are the characteristics of Host based IDS?
a) The host operating system logs in the audit information
b) Logs includes logins,file opens and program executions
c) Logs are analysed to detect tails of intrusion
d) All of the mentioned

Answer: d
Explanation: None.

10. What are the drawbacks of the host based IDS?
a) Unselective logging of messages may increase the audit burdens
b) Selective logging runs the risk of missed attacks
c) They are very fast to detect
d) They have to be programmed for new patterns

Answer: a
Explanation: None.

11. What are the strengths of the host based IDS?
a) Attack verification
b) System specific activity
c) No additional hardware required

d) All of the mentioned

Answer: d
Explanation: None.

12. What are characteristics of stack based IDS?
a) They are integrated closely with the TCP/IP stack and watch packets
b) The host operating system logs in the audit information
c) It is programmed to interpret a certain series of packets
d) It models the normal usage of network as a noise characterization

Answer: a
Explanation: None.

13. What are characteristics of Network based IDS?
a) They look for attack signatures in network traffic
b) Filter decides which traffic will not be discarded or passed
c) It is programmed to interpret a certain series of packet
d) It models the normal usage of network as a noise characterization

Answer: a
Explanation: None.

14. What are strengths of Network based IDS?
a) Cost of ownership reduced
b) Malicious intent detection
c) Real time detection and response
d) All of the mentioned

Answer: d
Explanation: None.

1. What is the preferred way of encryption?
a) pre shared secret key
b) using key distribution center (KDC)
c) public key-encryption
d) symmetric key

Answer: c
Explanation: Pre Shared key can be compromised and either party can be suspected. Likewise KDC or symmetric key can have breach which are undesirable. Public and private key encryption is a known industry standard.

2. What is not a role of encryption?
a) It is used to protect data from unauthorized access during transmission
b) It is used to ensure user authentication
c) It is used to ensure data integrity
d) It is used to ensure data corruption doesn't happens

Answer: d
Explanation: Encryption doesn't have error correction or detection facility thus cannot be used to safeguard from data corruption.

3. What is cipher-block chaining?
a) Data is logically 'ANDed' with previous block
b) Data is logically 'ORed' with previous block
c) Data is logically 'XORed' with previous block
d) None of the mentioned

Answer: c
Explanation: None.

4. What is not an encryption standard?
a) AES
b) TES
c) Triple DES
d) DES

Answer: b
Explanation: None.

5. Which of the following is not a stream cipher?
a) Two fish
b) RC5
c) RC4
d) TBONE

Answer: d
Explanation: None.

6. What is a Hash Function?
a) It creates a small flexible block of data
b) It creates a small,fixed block of data
c) It creates a encrypted block of data
d) None of the mentioned

Answer: b
Explanation: None.

7. MD5 produces _____ bits hash data.
a) 128
b) 150
c) 160
d) 112

Answer: a
Explanation: None.

8. SHA-1 produces _____ bit of hash.
a) 128
b) 160
c) 150
d) 112

Answer: b
Explanation: None.

9. Which two of the following are authentication algorithms?
a) MAC
b) AES
c) DAS
d) Digital-signature

Answer: a
Explanation: None.

10. What is the role of Key Distribution Center?

a) It is used to distribute keys to everyone in world
b) It intended to reduce the risks inherent in exchanging keys
c) All of the mentioned
d) None of the mentioned

Answer: b
Explanation: None.

1. Which one of the following is not a secondary storage?
a) Magnetic disks
b) Magnetic tapes
c) RAM
d) None of the mentioned

Answer: c
Explanation: None.

2. Which private network uses storage protocol rather than networking protocol?
a) storage area network
b) local area network
c) wide area network
d) none of the mentioned

Answer: a
Explanation: None.

3. The time for the disk arm to move the heads to the cylinder containing the desired sector is called _____
a) disk time
b) seek time
c) arm time
d) sector time

Answer: b
Explanation: None.

4. Which algorithm of disk scheduling selects the request with the least seek time from the current head positions?
a) SSTF scheduling
b) FCFS scheduling
c) SCAN scheduling
d) LOOK scheduling

Answer: a
Explanation: None.

5. The operating system is responsible for?
a) disk initialization
b) booting from disk
c) bad-block recovery
d) all of the mentioned

Answer: d
Explanation: None.

6. A swap space can reside in _____
a) Separate disk partition
b) RAM
c) Cache
d) None of the mentioned

Answer: a
Explanation: None.

7. RAID level 1 refers to _____
a) disk arrays with striping
b) disk mirroring
c) both disk arrays with striping and disk mirroring
d) none of the mentioned

Answer: b
Explanation: A variety of disk-organization techniques is called "redundant arrays of independent disks (RAID)".

8. When we write something on the disk, which one of the following can not happen?
a) successful completion
b) partial failure
c) total failure
d) none of the mentioned

Answer: d
Explanation: None.

9. What will happen during the recovery from a failure?
a) each pair of physical block is examined
b) specified pair of physical block is examined
c) first pair of physical block is examined
d) none of the mentioned

Answer: a
Explanation: None.

10. The replacement of a bad block generally is not totally automatic because _____
a) data in bad block can not be replaced
b) data in bad block is usually lost
c) bad block does not contain any data
d) none of the mentioned

Answer: b
Explanation: None.

1. Linux uses a time-sharing algorithm _____
a) to pair preemptive scheduling between multiple processes
b) for tasks where absolute priorities are more important than fairness
c) all of the mentioned
d) none of the mentioned

Answer: a
Explanation: None.

2. The first linux kernel which supports the SMP hardware?
a) linux 0.1
b) linux 1.0
c) linux 1.2
d) linux 2.0

Answer: d
Explanation: None.

3. Which one of the following linux file system does not support journaling feature?

a) ext2
b) ext3
c) ext4
d) none of the mentioned

Answer: a
Explanation: None.

4. Which binary format is supported by linux?
a) a.out
b) elf
c) both a.out and ELF
d) none of the mentioned

Answer: c
Explanation: None.

5. Which one of the following bootloader is not used by linux?
a) GRUB
b) LILO
c) NTLDR
d) None of the mentioned

Answer: c
Explanation: None.

6. The first process launched by the linux kernel is _____
a) init process
b) zombie process
c) batch process
d) boot process

Answer: a
Explanation: None.

7. Which desktop environment is not used in any linux distribution?
a) gnome
b) kde
c) unity
d) none of the mentioned

Answer: d
Explanation: None.

8. Standard set of functions through which interacts with kernel is defined by _____
a) system libraries
b) kernel code
c) compilers
d) utility programs

Answer: a
Explanation: None.

9. What is Linux?
a) single user, single tasking
b) single user, multitasking
c) multi user, single tasking
d) multi user, multitasking

Answer: d
Explanation: None.

10. Which one of the following is not a linux distribution?
a) debian
b) gentoo
c) open SUSE
d) multics

Answer: d
Explanation: None.

1. Which one of the following is not shared by threads?
a) program counter
b) stack
c) both program counter and stack
d) none of the mentioned

Answer: c
Explanation: None.

2. A process can be _____
a) single threaded
b) multithreaded
c) both single threaded and multithreaded
d) none of the mentioned

Answer: c
Explanation: None.

3. If one thread opens a file with read privileges then _____
a) other threads in the another process can also read from that file
b) other threads in the same process can also read from that file
c) any other thread can not read from that file
d) all of the mentioned

Answer: b
Explanation: None.

4. The time required to create a new thread in an existing process is _____
a) greater than the time required to create a new process
b) less than the time required to create a new process
c) equal to the time required to create a new process
d) none of the mentioned

Answer: b
Explanation: None.

5. When the event for which a thread is blocked occurs?
a) thread moves to the ready queue
b) thread remains blocked
c) thread completes
d) a new thread is provided

Answer: a
Explanation: None.

6. The jacketing technique is used to _____

a) convert a blocking system call into non blocking system call
b) create a new thread
c) communicate between threads
d) terminate a thread

Answer: a
Explanation: None.

7. Termination of the process terminates _____
a) first thread of the process
b) first two threads of the process
c) all threads within the process
d) no thread within the process

Answer: c
Explanation: None.

8. Which one of the following is not a valid state of a thread?
a) running
b) parsing
c) ready
d) blocked

Answer: b
Explanation: None.

9. The register context and stacks of a thread are deallocated when the thread?
a) terminates
b) blocks
c) unblocks
d) spawns

Answer: a
Explanation: None.

10. Thread synchronization is required because _____
a) all threads of a process share the same address space
b) all threads of a process share the same global variables
c) all threads of a process can share the same files
d) all of the mentioned

Answer: d
Explanation: None.

1. A thread is also called _____
a) Light Weight Process(LWP)
b) Heavy Weight Process(HWP)
c) Process
d) None of the mentioned

Answer: a
Explanation: None.

2. A thread shares its resources(like data section, code section, open files, signals) with _____
a) other process similar to the one that the thread belongs to
b) other threads that belong to similar processes
c) other threads that belong to the same process
d) all of the mentioned

Answer: c
Explanation: None.

3. A heavy weight process _____
a) has multiple threads of execution
b) has a single thread of execution
c) can have multiple or a single thread for execution
d) none of the mentioned

Answer: b
Explanation: None.

4. A process having multiple threads of control implies _____
a) it can do more than one task at a time
b) it can do only one task at a time, but much faster
c) it has to use only one thread per process
d) none of the mentioned

Answer: a
Explanation: None.

5. Multithreading an interactive program will increase responsiveness to the user by _____
a) continuing to run even if a part of it is blocked
b) waiting for one part to finish before the other begins
c) asking the user to decide the order of multithreading
d) none of the mentioned

Answer: a
Explanation: None.

6. Resource sharing helps _____
a) share the memory and resources of the process to which the threads belong
b) an application have several different threads of activity all within the same address space
c) reduce the address space that a process could potentially use
d) all of the mentioned

Answer: d
Explanation: None.

7. Multithreading on a multi – CPU machine _____
a) decreases concurrency
b) increases concurrency
c) doesn't affect the concurrency
d) can increase or decrease the concurrency

Answer: b
Explanation: None.

8. The kernel is _____ of user threads.
a) a part of
b) the creator of
c) unaware of
d) aware of

Answer: c
Explanation: None.

9. If the kernel is single threaded, then any user level thread performing a blocking system call will _____

a) cause the entire process to run along with the other threads
b) cause the thread to block with the other threads running
c) cause the entire process to block even if the other threads are available to run
d) none of the mentioned

Answer: c
Explanation: None.

10. Because the kernel thread management is done by the Operating System itself _____
a) kernel threads are faster to create than user threads
b) kernel threads are slower to create than user threads
c) kernel threads are easier to manage as well as create then user threads
d) none of the mentioned

Answer: b
Explanation: None.

11. If a kernel thread performs a blocking system call, _____
a) the kernel can schedule another thread in the application for execution
b) the kernel cannot schedule another thread in the same application for execution
c) the kernel must schedule another thread of a different application for execution
d) the kernel must schedule another thread of the same application on a different processor

Answer: a
Explanation: None.

12. Which of the following is FALSE?
a) Context switch time is longer for kernel level threads than for user level threads
b) User level threads do not need any hardware support
c) Related kernel level threads can be scheduled on different processors in a multiprocessor system
d) Blocking one kernel level thread blocks all other related threads

Answer: d
Explanation: None.

1. The model in which one kernel thread is mapped to many user-level threads is called _____
a) Many to One model
b) One to Many model
c) Many to Many model
d) One to One model

Answer: a
Explanation: None.

2. The model in which one user-level thread is mapped to many kernel level threads is called _____
a) Many to One model
b) One to Many model
c) Many to Many model
d) One to One model

Answer: b
Explanation: None.

3. In the Many to One model, if a thread makes a blocking system call _____
a) the entire process will be blocked
b) a part of the process will stay blocked, with the rest running
c) the entire process will run
d) none of the mentioned

Answer: a
Explanation: None.

4. In the Many to One model, multiple threads are unable to run in parallel on multiprocessors because of _____
a) only one thread can access the kernel at a time
b) many user threads have access to just one kernel thread
c) there is only one kernel thread
d) none of the mentioned

Answer: a
Explanation: None.

5. The One to One model allows _____
a) increased concurrency
b) decreased concurrency
c) increased or decreased concurrency
d) concurrency equivalent to other models

Answer: a
Explanation: None.

6. In the One to One model when a thread makes a blocking system call _____
a) other threads are strictly prohibited from running
b) other threads are allowed to run
c) other threads only from other processes are allowed to run
d) none of the mentioned

Answer: b
Explanation: None.

7. Which of the following is the drawback of the One to One Model?
a) increased concurrency provided by this model
b) decreased concurrency provided by this model
c) creating so many threads at once can crash the system
d) creating a user thread requires creating the corresponding kernel thread

Answer: d
Explanation: None.

8. When is the Many to One model at an advantage?
a) When the program does not need multithreading
b) When the program has to be multi-threaded
c) When there is a single processor
d) None of the mentioned

Answer: a
Explanation: None.

9. In the Many to Many model true concurrency cannot be gained because _____
a) the kernel can schedule only one thread at a time
b) there are too many threads to handle
c) it is hard to map threads with each other
d) none of the mentioned

Answer: a
Explanation: None.

10. In the Many to Many models when a thread performs a blocking system call _____
a) other threads are strictly prohibited from running
b) other threads are allowed to run
c) other threads only from other processes are allowed to run
d) none of the mentioned

Answer: b
Explanation: None.

1. Which of the following system calls does not return control to the calling point, on termination?
a) fork
b) exec
c) ioctl
d) longjmp

Answer: b
Explanation: None.

2. The following program results in the creation of?

```
main()
{
   if(fork()>0)
   sleep(100);
}
```

a) an orphan process
b) a zombie process
c) a process that executes forever
d) none of the mentioned

Answer: b
Explanation: None.

3. Which of the following system calls transforms executable binary file into a process?
a) fork
b) exec
c) ioctl
d) longjmp

Answer: b
Explanation: None.

4. How many times the following C program prints yes?

```
main()
  {
    fork();fork();printf("yes");
  }
```

a) only once
b) twice
c) four times
d) eight times

Answer: c
Explanation: None.

5. Which of the following calls never returns an error?
a) getpid

b) fork
c) ioctl
d) open

Answer: a
Explanation: None.

6. A fork system call will fail if _____
a) the previously executed statement is also a fork call
b) the limit on the maximum number of processes in the system would be executed
c) the limit on the minimum number of processes that can be under execution by a single user would be executed
d) all of the mentioned

Answer: b
Explanation: None.

7. If a thread invokes the exec system call _____
a) only the exec executes as a separate process
b) the program specified in the parameter to exec will replace the entire process
c) the exec is ignored as it is invoked by a thread
d) none of the mentioned

Answer: b
Explanation: None.

8. If exec is called immediately after forking _____
a) the program specified in the parameter to exec will replace the entire process
b) all the threads will be duplicated
c) all the threads may be duplicated
d) none of the mentioned

Answer: a
Explanation: None.

9. If a process does not call exec after forking _____
a) the program specified in the parameter to exec will replace the entire process
b) all the threads should be duplicated
c) all the threads should not be duplicated
d) none of the mentioned

Answer: b
Explanation: The new process is purely based on fork, due to no exec command, duplication will be done.

1. What is Thread cancellation?
a) the task of destroying the thread once its work is done
b) the task of removing a thread once its work is done
c) the task of terminating a thread before it has completed
d) none of the mentioned

Answer: c
Explanation: None.

2. When a web page is loading, and the user presses a button on the browser to stop loading the page?
a) the thread loading the page continues with the loading
b) the thread loading the page does not stop but continues with another task
c) the thread loading the page is paused
d) the thread loading the page is cancelled

Answer: d
Explanation: None.

3. When one thread immediately terminates the target thread, it is called _____
a) Asynchronous cancellation
b) Systematic cancellation
c) Sudden Termination
d) Deferred cancellation

Answer: a
Explanation: None.

4. When the target thread periodically checks if it should terminate and terminates itself in an orderly manner, it is called?
a) Asynchronous cancellation
b) Systematic cancellation
c) Sudden Termination
d) Deferred cancellation

Answer: d
Explanation: None.

5. Cancelling a thread asynchronously _____
a) frees all the resources properly
b) may not free each resource
c) spoils the process execution
d) none of the mentioned

Answer: b
Explanation: None.

6. Cancellation point is the point where _____
a) the thread can be cancelled – safely or otherwise doesn't matter
b) the thread can be cancelled safely
c) the whole process can be cancelled safely
d) none of the mentioned

Answer: b
Explanation: None.

7. If multiple threads are concurrently searching through a database and one thread returns the result then the remaining threads must be _____
a) continued
b) cancelled
c) protected
d) none of the mentioned

Answer: b
Explanation: None.

1. Signals that occur at the same time, are presented to the process _____
a) one at a time, in a particular order
b) one at a time, in no particular order
c) all at a time
d) none of the mentioned

Answer: b
Explanation: None.

2. Which of the following is not TRUE?
a) Processes may send each other signals
b) Kernel may send signals internally
c) A field is updated in the signal table when the signal is sent
d) Each signal is maintained by a single bit

Answer: c
*Explanation: A field is updated in the **process table** when the signal is sent.*

3. Signals of a given type _____
a) are queued
b) are all sent as one
c) cannot be queued
d) none of the mentioned

Answer: b
Explanation: The signal handler will be invoked only once.

4. The three ways in which a process responds to a signal are _____
a) ignoring the signal
b) handling the signal
c) performing some default action
d) all of the mentioned

Answer: d
Explanation: None.

5. Signals are identified by _____
a) signal identifiers
b) signal handlers
c) signal actions
d) none of the mentioned

Answer: a
Explanation: None.

6. When a process blocks the receipt of certain signals?
a) The signals are delivered
b) The signals are not delivered
c) The signals are received until they are unblocked
d) The signals are received by the process once they are delivered

Answer: a
Explanation: None.

7. The _____ maintains pending and blocked bit vectors in the context of each process.
a) CPU
b) Memory
c) Process
d) Kernel

Answer: d
Explanation: None.

8. In UNIX, the set of masked signals can be set or cleared using the _____ function.
a) sigmask
b) sigmaskproc
c) sigprocmask

d) sigproc

Answer: c
Explanation: None.

9. The usefulness of signals as a general inter process communication mechanism is limited because _____
a) they do not work between processes
b) they are user generated
c) they cannot carry information directly
d) none of the mentioned

Answer: c
Explanation: None.

10. The usual effect of abnormal termination of a program is _____
a) core dump file generation
b) system crash
c) program switch
d) signal destruction

Answer: a
Explanation: None.

11. In UNIX, the abort() function sends the _____ signal to the calling process, causing abnormal termination.
a) SIGTERM
b) SIGSTOP
c) SIGABORT
d) SIGABRT

Answer: d
Explanation: None.

12. In most cases, if a process is sent a signal while it is executing a system call _____
a) the system call will continue execution and the signal will be ignored completely
b) the system call is interrupted by the signal, and the signal handler comes in
c) the signal has no effect until the system call completes
d) none of the mentioned

Answer: c
Explanation: None.

13. A process can never be sure that a signal it has sent _____
a) has which identifier
b) has not been lost
c) has been sent
d) all of the mentioned

Answer: b
Explanation: None.

14. In UNIX, the _____ system call is used to send a signal.
a) sig
b) send
c) kill
d) sigsend

Answer: c
Explanation: None.

1. Thread pools are useful when _____
a) when we need to limit the number of threads running in the application at the same time
b) when we need to limit the number of threads running in the application as a whole
c) when we need to arrange the ordering of threads
d) none of the mentioned

Answer: a
Explanation: None.

2. Instead of starting a new thread for every task to execute concurrently, the task can be passed to a _____
a) process
b) thread pool
c) thread queue
d) none of the mentioned

Answer: b
Explanation: None.

3. Each connection arriving at multi threaded servers via network is generally _____
a) is directly put into the blocking queue
b) is wrapped as a task and passed on to a thread pool
c) is kept in a normal queue and then sent to the blocking queue from where it is dequeued
d) none of the mentioned

Answer: b
Explanation: None.

4. What is the idea behind thread pools?
a) a number of threads are created at process startup and placed in a pool where they sit and wait for work
b) when a process begins, a pool of threads is chosen from the many existing and each thread is allotted equal amount of work
c) all threads in a pool distribute the task equally among themselves
d) none of the mentioned

Answer: a
Explanation: None.

5. If the thread pool contains no available thread _____
a) the server runs a new process
b) the server goes to another thread pool
c) the server demands for a new pool creation
d) the server waits until one becomes free

Answer: d
Explanation: None.

6. Thread pools help in _____
a) servicing multiple requests using one thread
b) servicing a single request using multiple threads from the pool
c) faster servicing of requests with an existing thread rather than waiting to create a new thread
d) none of the mentioned

Answer: c
Explanation: None.

7. Thread pools limit the number of threads that exist at any one point, hence _____
a) not letting the system resources like CPU time and memory exhaust
b) helping a limited number of processes at a time

c) not serving all requests and ignoring many
d) none of the mentioned

Answer: a
Explanation: None.

8. The number of the threads in the pool can be decided on factors such as _____
a) number of CPUs in the system
b) amount of physical memory
c) expected number of concurrent client requests
d) all of the mentioned

Answer: d
Explanation: None.

1. Because of virtual memory, the memory can be shared among _____
a) processes
b) threads
c) instructions
d) none of the mentioned

Answer: a
Explanation: None.

2. _____ is the concept in which a process is copied into the main memory from the secondary memory according to the requirement.
a) Paging
b) Demand paging
c) Segmentation
d) Swapping

Answer: b
Explanation: None.

3. The pager concerns with the _____
a) individual page of a process
b) entire process
c) entire thread
d) first page of a process

Answer: a
Explanation: None.

4. Swap space exists in _____
a) primary memory
b) secondary memory
c) cpu
d) none of the mentioned

Answer: b
Explanation: None.

5. When a program tries to access a page that is mapped in address space but not loaded in physical memory, then _____
a) segmentation fault occurs
b) fatal error occurs
c) page fault occurs
d) no error occurs

Answer: c
Explanation: None.

6. Effective access time is directly proportional to _____
a) page-fault rate
b) hit ratio
c) memory access time
d) none of the mentioned

Answer: a
Explanation: None.

7. In FIFO page replacement algorithm, when a page must be replaced _____
a) oldest page is chosen
b) newest page is chosen
c) random page is chosen
d) none of the mentioned

Answer: a
Explanation: None.

8. Which algorithm chooses the page that has not been used for the longest period of time whenever the page required to be replaced?
a) first in first out algorithm
b) additional reference bit algorithm
c) least recently used algorithm
d) counting based page replacement algorithm

Answer: c
Explanation: None.

9. A process is thrashing if _____
a) it is spending more time paging than executing
b) it is spending less time paging than executing
c) page fault occurs
d) swapping can not take place

Answer: a
Explanation: None.

10. Working set model for page replacement is based on the assumption of _____
a) modularity
b) locality
c) globalization
d) random access

Answer: b
Explanation: None.

1. Virtual memory allows _____
a) execution of a process that may not be completely in memory
b) a program to be smaller than the physical memory
c) a program to be larger than the secondary storage
d) execution of a process without being in physical memory

Answer: a
Explanation: None.

2. The instruction being executed, must be in _____
a) physical memory
b) logical memory
c) physical & logical memory
d) none of the mentioned

Answer: a
Explanation: None.

3. Error handler codes, to handle unusual errors are _____
a) almost never executed
b) executed very often
c) executed periodically
d) none of the mentioned

Answer: a
Explanation: None.

4. The ability to execute a program that is only partially in memory has benefits like _____
a) The amount of physical memory cannot put a constraint on the program
b) Programs for an extremely large virtual space can be created
c) Throughput increases
d) All of the mentioned

Answer: d
Explanation: None.

5. In virtual memory. the programmer _____ of overlays.
a) has to take care
b) does not have to take care
c) all of the mentioned
d) none of the mentioned

Answer: b
Explanation: None.

6. Virtual memory is normally implemented by _____
a) demand paging
b) buses
c) virtualization
d) all of the mentioned

Answer: a
Explanation: None.

7. Segment replacement algorithms are more complex than page replacement algorithms because _____
a) Segments are better than pages
b) Pages are better than segments
c) Segments have variable sizes
d) Segments have fixed sizes

Answer: c
Explanation: None.

8. A swapper manipulates _____ whereas the pager is concerned with individual _____ of a process.
a) the entire process, parts
b) all the pages of a process, segments
c) the entire process, pages

d) none of the mentioned

Answer: c
Explanation: None.

9. Using a pager _____
a) increases the swap time
b) decreases the swap time
c) decreases the swap time & amount of physical memory needed
d) increases the amount of physical memory needed

Answer: c
Explanation: None.

10. The valid – invalid bit, in this case, when valid indicates?
a) the page is not legal
b) the page is illegal
c) the page is in memory
d) the page is not in memory

Answer: c
Explanation: None.

11. A page fault occurs when?
a) a page gives inconsistent data
b) a page cannot be accessed due to its absence from memory
c) a page is invisible
d) all of the mentioned

Answer: b
Explanation: None.

12. When a page fault occurs, the state of the interrupted process is _____
a) disrupted
b) invalid
c) saved
d) none of the mentioned

Answer: c
Explanation: None.

13. When a process begins execution with no pages in memory?
a) process execution becomes impossible
b) a page fault occurs for every page brought into memory
c) process causes system crash
d) none of the mentioned

Answer: b
Explanation: None.

14. If the memory access time is denoted by 'ma' and 'p' is the probability of a page fault (0 <= p <= 1). Then the effective access time for a demand paged memory is _____
a) p x ma + (1-p) x page fault time
b) ma + page fault time
c) (1-p) x ma + p x page fault time
d) none of the mentioned

Answer: c

Explanation: None.

15. When the page fault rate is low _____
a) the turnaround time increases
b) the effective access time increases
c) the effective access time decreases
d) turnaround time & effective access time increases

Answer: c
Explanation: None.

16. Locality of reference implies that the page reference being made by a process _____
a) will always be to the page used in the previous page reference
b) is likely to be one of the pages used in the last few page references
c) will always be one of the pages existing in memory
d) will always lead to page faults

Answer: b
Explanation: None.

1. Which of the following page replacement algorithms suffers from Belady's Anomaly?
a) Optimal replacement
b) LRU
c) FIFO
d) Both optimal replacement and FIFO

Answer: c
Explanation: None.

2. A process refers to 5 pages, A, B, C, D, E in the order : A, B, C, D, A, B, E, A, B, C, D, E. If the page replacement algorithm is FIFO, the number of page transfers with an empty internal store of 3 frames is?
a) 8
b) 10
c) 9
d) 7

Answer: c
Explanation: None.

3. In question 2, if the number of page frames is increased to 4, then the number of page transfers _____
a) decreases
b) increases
c) remains the same
d) none of the mentioned

Answer: b
Explanation: None.

4. A memory page containing a heavily used variable that was initialized very early and is in constant use is removed, then the page replacement algorithm used is _____
a) LRU
b) LFU
c) FIFO
d) None of the mentioned

Answer: c
Explanation: None.Answer: c
Explanation: None.

6. Users _____ that their processes are running on a paged system.
a) are aware
b) are unaware
c) may unaware
d) none of the mentioned

Answer: b
Explanation: None.

7. If no frames are free, _____ page transfer(s) is/are required.
a) one
b) two
c) three
d) four

Answer: b
Explanation: None.

8. When a page is selected for replacement, and its modify bit is set _____
a) the page is clean
b) the page has been modified since it was read in from the disk
c) the page is dirty
d) the page has been modified since it was read in from the disk & page is dirty

Answer: d
Explanation: None.

9. The aim of creating page replacement algorithms is to _____
a) replace pages faster
b) increase the page fault rate
c) decrease the page fault rate
d) to allocate multiple pages to processes

Answer: c
Explanation: None.

10. A FIFO replacement algorithm associates with each page the _____
a) time it was brought into memory
b) size of the page in memory
c) page after and before it
d) all of the mentioned

Answer: a
Explanation: None.

11. What is the Optimal page – replacement algorithm?
a) Replace the page that has not been used for a long time
b) Replace the page that has been used for a long time
c) Replace the page that will not be used for a long time
d) None of the mentioned

Answer: c
Explanation: None.

12. Optimal page – replacement algorithm is difficult to implement, because _____
a) it requires a lot of information
b) it requires future knowledge of the reference string
c) it is too complex

d) it is extremely expensive

Answer: b
Explanation: None.

13. LRU page – replacement algorithm associates with each page the _____
a) time it was brought into memory
b) the time of that page's last use
c) page after and before it
d) all of the mentioned

Answer: b
Explanation: None.Answer: d
Explanation: None.

15. What are the two methods of the LRU page replacement policy that can be implemented in hardware?
a) Counters
b) RAM & Registers
c) Stack & Counters
d) Registers

Answer: c
Explanation: None.

1. When using counters to implement LRU, we replace the page with the _____
a) smallest time value
b) largest time value
c) greatest size
d) none of the mentioned

Answer: a
Explanation: Whenever a reference to a page is made, the contents of the clock register are copied into the time-of-use field in the page-table entry for that page. In this way, we always have the time of the last reference to each page.

2. In the stack implementation of the LRU algorithm, a stack can be maintained in a manner _____
a) whenever a page is used, it is removed from the stack and put on bottom
b) the bottom of the stack is the LRU page
c) the top of the stack contains the LRU page and all new pages are added to the top
d) none of the mentioned

Answer: b
Explanation: None.

3. There is a set of page replacement algorithms that can never exhibit Belady's Anomaly, called _____
a) queue algorithms
b) stack algorithms
c) string algorithms
d) none of the mentioned

Answer: b
Explanation: None.Answer: c
Explanation: None.

5. Increasing the RAM of a computer typically improves performance because _____
a) Virtual memory increases
b) Larger RAMs are faster
c) Fewer page faults occur
d) None of the mentioned

Answer: c
Explanation: None.

6. The essential content(s) in each entry of a page table is/are _____
a) Virtual page number
b) Page frame number
c) Both virtual page number and page frame number
d) Access right information

Answer: b
Explanation: None.

7. The minimum number of page frames that must be allocated to a running process in a virtual memory environment is determined by _____
a) the instruction set architecture
b) page size
c) physical memory size
d) number of processes in memory

Answer: a
Explanation: None.

8. What is the reason for using the LFU page replacement algorithm?
a) an actively used page should have a large reference count
b) a less used page has more chances to be used again
c) it is extremely efficient and optimal
d) all of the mentioned

Answer: a
Explanation: None.

9. What is the reason for using the MFU page replacement algorithm?
a) an actively used page should have a large reference count
b) a less used page has more chances to be used again
c) it is extremely efficient and optimal
d) all of the mentioned

Answer: b
Explanation: None.

10. The implementation of the LFU and the MFU algorithm is very uncommon because _____
a) they are too complicated
b) they are optimal
c) they are expensive
d) all of the mentioned

Answer: c
Explanation: None.

1. The minimum number of frames to be allocated to a process is decided by the _____
a) the amount of available physical memory
b) operating System
c) instruction set architecture
d) none of the mentioned

Answer: c
Explanation: None.

2. When a page fault occurs before an executing instruction is complete if _____
a) the instruction must be restarted
b) the instruction must be ignored
c) the instruction must be completed ignoring the page fault
d) none of the mentioned

Answer: a
Explanation: None.

3. Consider a machine in which all memory reference instructions have only one memory address, for them we need at least _____ frame(s).
a) one
b) two
c) three
d) none of the mentioned

Answer: b
Explanation: At least one frame for the instruction and one for the memory reference.

4. The maximum number of frames per process is defined by _____
a) the amount of available physical memory
b) operating System
c) instruction set architecture
d) none of the mentioned

Answer: a
Explanation: None.

5. The algorithm in which we split m frames among n processes, to give everyone an equal share, m/n frames is known as _____
a) proportional allocation algorithm
b) equal allocation algorithm
c) split allocation algorithm
d) none of the mentioned

Answer: b
Explanation: None.

6. The algorithm in which we allocate memory to each process according to its size is known as _____
a) proportional allocation algorithm
b) equal allocation algorithm
c) split allocation algorithm
d) none of the mentioned

Answer: a
Explanation: None.

7. With either equal or proportional algorithm, a high priority process is treated _____ a low priority process.
a) greater than
b) same as
c) lesser than
d) none of the mentioned

Answer: b
Explanation: None.

8. _____ replacement allows a process to select a replacement frame from the set of all frames, even if the frame is currently allocated to some other process.

a) Local
b) Universal
c) Global
d) Public

Answer: c
Explanation: None.

9. _____ replacement allows each process to only select from its own set of allocated frames.
a) Local
b) Universal
c) Global
d) Public

Answer: a
Explanation: None.

10. One problem with the global replacement algorithm is that _____
a) it is very expensive
b) many frames can be allocated to a process
c) only a few frames can be allocated to a process
d) a process cannot control its own page – fault rate

Answer: d
Explanation: None.

11. _____ replacement generally results in greater system throughput.
a) Local
b) Global
c) Universal
d) Public

Answer: b
Explanation: None.

1. A process is thrashing if _____
a) it spends a lot of time executing, rather than paging
b) it spends a lot of time paging than executing
c) it has no memory allocated to it
d) none of the mentioned

Answer: b
Explanation: None.

2. Thrashing _____ the CPU utilization.
a) increases
b) keeps constant
c) decreases
d) none of the mentioned

Answer: c
Explanation: None.

3. What is a locality?
a) a set of pages that are actively used together
b) a space in memory
c) an area near a set of processes
d) none of the mentioned

Answer: a
Explanation: None.

4. When a subroutine is called _____
a) it defines a new locality
b) it is in the same locality from where it was called
c) it does not define a new locality
d) none of the mentioned

Answer: a
Explanation: None.

5. A program is generally composed of several different localities, which _____ overlap.
a) may
b) must
c) do not
d) must not

Answer: a
Explanation: None.Answer: c
Explanation: None.

7. The accuracy of the working set depends on the selection of _____
a) working set model
b) working set size
c) memory size
d) number of pages in memory

Answer: b
Explanation: None.

8. If working set window is too small _____
a) it will not encompass entire locality
b) it may overlap several localities
c) it will cause memory problems
d) none of the mentioned

Answer: a
Explanation: None.

9. If working set window is too large _____
a) it will not encompass entire locality
b) it may overlap several localities
c) it will cause memory problems
d) none of the mentioned

Answer: b
Explanation: None.

10. If the sum of the working – set sizes increases, exceeding the total number of available frames _____
a) then the process crashes
b) the memory overflows
c) the system crashes
d) the operating system selects a process to suspend

Answer: d
Explanation: None.Answer: a
Explanation: None.Answer: c

Explanation: None.Answer: a
Explanation: None.Answer: c
Explanation: None.Answer: d
Explanation: None.

1. _____ is a unique tag, usually a number identifies the file within the file system.
a) File identifier
b) File name
c) File type
d) None of the mentioned

Answer: a
Explanation: None.

2. To create a file _____
a) allocate the space in file system
b) make an entry for new file in directory
c) allocate the space in file system & make an entry for new file in directory
d) none of the mentioned

Answer: c
Explanation: None.

3. By using the specific system call, we can _____
a) open the file
b) read the file
c) write into the file
d) all of the mentioned

Answer: d
Explanation: None.

4. File type can be represented by _____
a) file name
b) file extension
c) file identifier
d) none of the mentioned

Answer: b
Explanation: None.

5. Which file is a sequence of bytes organized into blocks understandable by the system's linker?
a) object file
b) source file
c) executable file
d) text file

Answer: a
Explanation: None.

6. What is the mounting of file system?
a) crating of a filesystem
b) deleting a filesystem
c) attaching portion of the file system into a directory structure
d) removing the portion of the file system into a directory structure

Answer: c
Explanation: None.

7. Mapping of file is managed by _____
a) file metadata
b) page table
c) virtual memory
d) file system

Answer: a
Explanation: None.

8. Mapping of network file system protocol to local file system is done by _____
a) network file system
b) local file system
c) volume manager
d) remote mirror

Answer: a
Explanation: None.

9. Which one of the following explains the sequential file access method?
a) random access according to the given byte number
b) read bytes one at a time, in order
c) read/write sequentially by record
d) read/write randomly by record

Answer: b
Explanation: None.

10. When will file system fragmentation occur?
a) unused space or single file are not contiguous
b) used space is not contiguous
c) unused space is non-contiguous
d) multiple files are non-contiguous

Answer: a
Explanation: None.

1. Management of metadata information is done by _____
a) file-organisation module
b) logical file system
c) basic file system
d) application programs

Answer: b
Explanation: None.

2. A file control block contains the information about _____
a) file ownership
b) file permissions
c) location of file contents
d) all of the mentioned

Answer: d
Explanation: None.

3. Which table contains the information about each mounted volume?
a) mount table
b) system-wide open-file table
c) per-process open-file table

d) all of the mentioned

Answer: d
Explanation: None.

4. To create a new file application program calls _____
a) basic file system
b) logical file system
c) file-organisation module
d) none of the mentioned

Answer: b
Explanation: None.

5. What will happens when a process closes the file?
a) per-process table entry is not removed
b) system wide entry's open count is decremented
c) all of the mentioned
d) none of the mentioned

Answer: b
Explanation: None.

6. What is raw disk?
a) disk without file system
b) empty disk
c) disk lacking logical file system
d) disk having file system

Answer: a
Explanation: None.

7. The data structure used for file directory is called _____
a) mount table
b) hash table
c) file table
d) process table

Answer: b
Explanation: None.

8. In which type of allocation method each file occupy a set of contiguous block on the disk?
a) contiguous allocation
b) dynamic-storage allocation
c) linked allocation
d) indexed allocation

Answer: a
Explanation: None.

9. If the block of free-space list is free then bit will _____
a) 1
b) 0
c) any of 0 or 1
d) none of the mentioned

Answer: a
Explanation: None.

10. Which protocol establishes the initial logical connection between a server and a client?
a) transmission control protocol
b) user datagram protocol
c) mount protocol
d) datagram congestion control protocol

Answer: c
Explanation: None.

1. Data cannot be written to secondary storage unless written within a _____
a) file
b) swap space
c) directory
d) text format

Answer: a
Explanation: None.

2. File attributes consist of _____
a) name
b) type
c) identifier
d) all of the mentioned

Answer: d
Explanation: None.

3. The information about all files is kept in _____
a) swap space
b) operating system
c) seperate directory structure
d) none of the mentioned

Answer: c
Explanation: None.

4. A file is a/an _____ data type.
a) abstract
b) primitive
c) public
d) private

Answer: a
Explanation: None.

5. The operating system keeps a small table containing information about all open files called _____
a) system table
b) open-file table
c) file table
d) directory table

Answer: b
Explanation: None.

6. In UNIX, what will the open system call return?
a) pointer to the entry in the open file table
b) pointer to the entry in the system wide table
c) a file to the process calling it

d) none of the mentioned

Answer: a
Explanation: None.

7. System wide table in UNIX contains process independent information such as _____
a) location of file on disk
b) access dates
c) file size
d) all of the mentioned

Answer: d
Explanation: None.

8. The open file table has a/an _____ associated with each file.
a) file content
b) file permission
c) open count
d) close count

Answer: c
Explanation: open count indicates the number of processes that have the file open.

9. Which of the following are the two parts of the file name?
a) name & identifier
b) identifier & type
c) extension & name
d) type & extension

Answer: c
Explanation: None.

1. The UNIX sytem uses a/an _____ stored at the beginning of a some files to indicate roughly the type of file.
a) identifier
b) extension
c) virtual number
d) magic number

Answer: d
Explanation: None.

2. The larger the block size, the _____ the internal fragmentation.
a) greater
b) lesser
c) same
d) none of the mentioned

Answer: a
Explanation: None.

3. In the sequential access method, information in the file is processed _____
a) one disk after the other, record access doesnt matter
b) one record after the other
c) one text document after the other
d) none of the mentioned

Answer: b
Explanation: None.

4. Sequential access method _____ on random access devices.
a) works well
b) doesnt work well
c) maybe works well and doesnt work well
d) none of the mentioned

Answer: a
Explanation: None.

5. The direct access method is based on a _____ model of a file, as _____ allow random access to any file block.
a) magnetic tape, magnetic tapes
b) tape, tapes
c) disk, disks
d) all of the mentioned

Answer: c
Explanation: None.

6. For a direct access file _____
a) there are restrictions on the order of reading and writing
b) there are no restrictions on the order of reading and writing
c) access is restricted permission wise
d) access is not restricted permission wise

Answer: b
Explanation: None.

7. A relative block number is an index relative to _____
a) the beginning of the file
b) the end of the file
c) the last written position in file
d) none of the mentioned

Answer: a
Explanation: None.

8. The index contains _____
a) names of all contents of file
b) pointers to each page
c) pointers to the various blocks
d) all of the mentioned

Answer: c
Explanation: None.

9. For large files, when the index itself becomes too large to be kept in memory?
a) index is called
b) an index is created for the index file
c) secondary index files are created
d) all of the mentioned

Answer: b
Explanation: None.

1. To organise file systems on disk _____
a) they are split into one or more partitions
b) information about files is added to each partition
c) they are made on different storage spaces

d) all of the mentioned

Answer: b
Explanation: None.

2. The directory can be viewed as a _____ that translates file names into their directory entries.
a) symbol table
b) partition
c) swap space
d) cache

Answer: a
Explanation: None.

3. What will happen in the single level directory?
a) All files are contained in different directories all at the same level
b) All files are contained in the same directory
c) Depends on the operating system
d) None of the mentioned

Answer: b
Explanation: None.

4. What will happen in the single level directory?
a) all directories must have unique names
b) all files must have unique names
c) all files must have unique owners
d) all of the mentioned

Answer: b
Explanation: None.

5. What will happen in the two level directory structure?
a) each user has his/her own user file directory
b) the system doesn't its own master file directory
c) all of the mentioned
d) none of the mentioned

Answer: a
Explanation: None.

6. When a user job starts in a two level directory system, or a user logs in _____
a) the users user file directory is searched
b) the system's master file directory is not searched
c) the master file directory is indexed by user name or account number, and each entry points to the UFD for that user
d) all of the mentioned

Answer: c
Explanation: None.

7. When a user refers to a particular file?
a) system MFD is searched
b) his own UFD is not searched
c) both MFD and UFD are searched
d) every directory is searched

Answer: c

Explanation: None.

8. What is the disadvantage of the two level directory structure?
a) it does not solve the name collision problem
b) it solves the name collision problem
c) it does not isolate users from one another
d) it isolates users from one another

Answer: d
Explanation: None.

9. In the tree structured directories _____
a) the tree has the stem directory
b) the tree has the leaf directory
c) the tree has the root directory
d) all of the mentioned

Answer: c
Explanation: None.

10. The current directory contains, most of the files that are _____
a) of current interest to the user
b) stored currently in the system
c) not used in the system
d) not of current interest to the system

Answer: a
Explanation: None.

11. Which of the following are the types of Path names?
a) absolute & relative
b) local & global
c) global & relative
d) relative & local

Answer: a
Explanation: None.

1. An absolute path name begins at the _____
a) leaf
b) stem
c) current directory
d) root

Answer: d
Explanation: None.

2. A relative path name begins at the _____
a) leaf
b) stem
c) current directory
d) root

Answer: c
Explanation: None.

3. In a tree structure, when deleting a directory that is not empty?
a) The contents of the directory are safe

b) The contents of the directory are also deleted
c) contents of the directory are not deleted
d) none of the mentioned

Answer: b
Explanation: None.

4. When two users keep a subdirectory in their own directories, the structure being referred to is _____
a) tree structure
b) cyclic graph directory structure
c) two level directory structure
d) acyclic graph directory

Answer: d
Explanation: None.

5. A tree structure _____ the sharing of files and directories.
a) allows
b) may restrict
c) restricts
d) none of the mentioned

Answer: c
Explanation: None.

6. With a shared file _____
a) actual file exists
b) there are two copies of the file
c) the changes made by one person are not reflected to the other
d) the changes made by one person are reflected to the other

Answer: d
Explanation: None.

7. In UNIX, what is a link?
a) a directory entry
b) a pointer to another file or subdirectory
c) implemented as an absolute or relative path name
d) all of the mentioned

Answer: d
Explanation: None.

8. The operating system _____ the links when traversing directory trees, to preserve the acyclic structure of the system.
a) considers
b) ignores
c) deletes
d) none of the mentioned

Answer: b
Explanation: None.

9. The deletion of a link _____ the original file.
a) deletes
b) affects
c) does not affect
d) none of the mentioned

Answer: c
Explanation: None.

10. When keeping a list of all the links/references to a file, and the list is empty, implies that _____
a) the file has no copies
b) the file is deleted
c) the file is hidden
d) none of the mentioned

Answer: b
Explanation: None.

11. When a cycle exists, the reference count maybe non zero, even when it is no longer possible to refer to a directory or file, due to _____
a) the possibility of one hidden reference
b) the possibility of two hidden references
c) the possibility of self referencing
d) none of the mentioned

Answer: c
Explanation: None.

1. What is the mount point?
a) an empty directory at which the mounted file system will be attached
b) a location where every time file systems are mounted
c) is the time when the mounting is done
d) none of the mentioned

Answer: a
Explanation: None.

2. When a file system is mounted over a directory that is not empty then _____
a) the system may not allow the mount
b) the system must allow the mount
c) the system may allow the mount and the directory's existing files will then be made obscure
d) all of the mentioned

Answer: c
Explanation: None.

3. In UNIX, exactly which operations can be executed by group members and other users is definable by _____
a) the group's head
b) the file's owner
c) the file's permissions
d) all of the mentioned

Answer: b
Explanation: None.

4. A process _____ lower the priority of another process if both are owned by the same owner.
a) must
b) can
c) cannot
d) none of the mentioned

Answer: b
Explanation: None.

5. In distributed file system _____ directories are visible from the local machine.
a) protected
b) local
c) private
d) remote

Answer: d
Explanation: None.

6. In the world wide web, a ____ is needed to gain access to the remote files, and separate operations are used to transfer files.
a) laptop
b) plugin
c) browser
d) player

Answer: c
Explanation: None.

7. Anonymous access allows a user to transfer files _____
a) without having an account on the remote system
b) only if he accesses the system with a guest account
c) only if he has an account on the remote system
d) none of the mentioned

Answer: a
Explanation: The world wide web uses anonymous file exchange almost exclusively.

8. The machine containing the files is the _____ and the machine wanting to access the files is the _____
a) master, slave
b) memory, user
c) server, client
d) none of the mentioned

Answer: c
Explanation: None.

9. Distributed naming services/Distributed information systems have been devised to _____
a) provide information about all the systems
b) provide unified access to the information needed for remote computing
c) provide unique names to all systems in a network
d) all of the mentioned

Answer: b
Explanation: None.

10. Domain name system provides _____
a) host-name-to-network-address translations for the entire internet
b) network-address-to-host-name translations for the entire internet
c) binary to hex translations for the entire internet
d) all of the mentioned

Answer: a
Explanation: None.

11. To recover from failures in the network operations _____ information may be maintained.
a) ip address
b) state

c) stateless
d) operating system

Answer: b
Explanation: None.

12. The series of accesses between the open and close operations is a _____
a) transaction
b) procedure
c) program
d) file session

Answer: d
Explanation: None.

1. Reliability of files can be increased by _____
a) keeping the files safely in the memory
b) making a different partition for the files
c) by keeping them in external storage
d) by keeping duplicate copies of the file

Answer: d
Explanation: None.

2. Protection is only provided at the _____ level.
a) lower
b) central
c) higher
d) none of the mentioned

Answer: a
Explanation: None.

3. What is the main problem with access control lists?
a) their maintenance
b) their length
c) their permissions
d) all of the mentioned

Answer: b
Explanation: None.

4. Many systems recognize three classifications of users in connection with each file (to condense the access control list).
a) Owner
b) Group
c) Universe
d) All of the mentioned

Answer: d
Explanation: None.

5. All users in a group get _____ access to a file.
a) different
b) similar
c) same
d) none of the mentioned

Answer: b
Explanation: None.

6. Universe consists of _____
a) all users that aren't included in the group or owners
b) all users that are not owners
c) all users in the system
d) none of the mentioned

Answer: c
Explanation: None.

7. In UNIX, groups can be created and modified by?
a) superuser
b) any user
c) a programmer only
d) the people in the group only

Answer: a
Explanation: None.

8. To control access the three bits used in UNIX are represented by _____
a) r
b) w
c) x
d) all of the mentioned

Answer: d
Explanation: None.

9. If each access to a file is controlled by a password, then what is the disadvantage?
a) user will need to remember a lot of passwords
b) it is not reliable
c) it is not efficient
d) all of the mentioned

Answer: a
Explanation: None.

10. What will happen in a multi level directory structure?
a) the same previous techniques will be used as in the other structures
b) a mechanism for directory protection will have to applied
c) the subdirectories do not need protection once the directory is protected
d) none of the mentioned

Answer: b
Explanation: None.

11. In UNIX, the directory protection is handled _____ to the file protection.
a) different
b) similar
c) it is not handled at all
d) none of the mentioned

Answer: b
Explanation: None.

12. Disks are segmented into one or more partitions, each containing a file system or _____

a) left 'raw'
b) made into swap space
c) made into backup space
d) left 'ripe'

Answer: a
Explanation: None.

1. The three major methods of allocating disk space that are in wide use are _____
a) contiguous
b) linked
c) indexed
d) all of the mentioned

Answer: d
Explanation: None.

2. In contiguous allocation _____
a) each file must occupy a set of contiguous blocks on the disk
b) each file is a linked list of disk blocks
c) all the pointers to scattered blocks are placed together in one location
d) none of the mentioned

Answer: a
Explanation: None.

3. In linked allocation _____
a) each file must occupy a set of contiguous blocks on the disk
b) each file is a linked list of disk blocks
c) all the pointers to scattered blocks are placed together in one location
d) none of the mentioned

Answer: b
Explanation: None.

4. In indexed allocation _____
a) each file must occupy a set of contiguous blocks on the disk
b) each file is a linked list of disk blocks
c) all the pointers to scattered blocks are placed together in one location
d) none of the mentioned

Answer: c
Explanation: None.

5. On systems where there are multiple operating system, the decision to load a particular one is done by _____
a) boot loader
b) bootstrap
c) process control block
d) file control block

Answer: a
Explanation: None.

6. The VFS (virtual file system) activates file system specific operations to handle local requests according to their _____
a) size
b) commands

c) timings
d) file system types

Answer: d
Explanation: None.

7. What is the real disadvantage of a linear list of directory entries?
a) size of the linear list in memory
b) linear search to find a file
c) it is not reliable
d) all of the mentioned

Answer: b
Explanation: None.

8. Contiguous allocation of a file is defined by _____
a) disk address of the first block & length
b) length & size of the block
c) size of the block
d) total size of the file

Answer: a
Explanation: None.

9. One difficulty of contiguous allocation is _____
a) finding space for a new file
b) inefficient
c) costly
d) time taking

Answer: a
Explanation: None.

10. _____ and _____ are the most common strategies used to select a free hole from the set of available holes.
a) First fit, Best fit
b) Worst fit, First fit
c) Best fit, Worst fit
d) None of the mentioned

Answer: a
Explanation: None.

11. The first fit and best fit algorithms suffer from _____
a) internal fragmentation
b) external fragmentation
c) starvation
d) all of the mentioned

Answer: b
Explanation: None.

12. To solve the problem of external fragmentation _____ needs to be done periodically.
a) compaction
b) check
c) formatting
d) replacing memory

Answer: a

Explanation: None.

13. If too little space is allocated to a file _____
a) the file will not work
b) there will not be any space for the data, as the FCB takes it all
c) the file cannot be extended
d) the file cannot be opened

Answer: c
Explanation: None.

1. A device driver can be thought of like a translator. Its input consists of _____ commands and output consists of _____ instructions.
a) high level, low level
b) low level, high level
c) complex, simple
d) low level, complex

Answer: a
Explanation: None.

2. The file organization module knows about _____
a) files
b) logical blocks of files
c) physical blocks of files
d) all of the mentioned

Answer: d
Explanation: None.

3. Metadata includes _____
a) all of the file system structure
b) contents of files
c) both file system structure and contents of files
d) none of the mentioned

Answer: c
Explanation: None.

4. For each file there exists a _____ that contains information about the file, including ownership, permissions and location of the file contents.
a) metadata
b) file control block
c) process control block
d) all of the mentioned

Answer: b
Explanation: None.

5. For processes to request access to file contents, they need _____
a) to run a seperate program
b) special interrupts
c) to implement the open and close system calls
d) none of the mentioned

Answer: c
Explanation: None.

6. During compaction time, other normal system operations _____ be permitted.
a) can
b) cannot
c) is
d) none of the mentioned

Answer: b
Explanation: None.

7. When in contiguous allocation the space cannot be extended easily?
a) the contents of the file have to be copied to a new space, a larger hole
b) the file gets destroyed
c) the file will get formatted and lost all its data
d) none of the mentioned

Answer: a
Explanation: None.Answer: c
Explanation: None.

9. There is no _____ with linked allocation.
a) internal fragmentation
b) external fragmentation
c) starvation
d) all of the mentioned

Answer: b
Explanation: None.

10. What is the major disadvantage with a linked allocation?
a) internal fragmentation
b) external fragmentation
c) there is no sequential access
d) there is only sequential access

Answer: d
Explanation: None.

11. What if a pointer is lost or damaged in a linked allocation?
a) the entire file could get damaged
b) only a part of the file would be affected
c) there would not be any problems
d) none of the mentioned

Answer: a
Explanation: None.

12. FAT stands for _____
a) File Attribute Transport
b) File Allocation Table
c) Fork At Time
d) None of the mentioned

Answer: b
Explanation: None.

13. By using FAT, random access time is _____
a) the same
b) increased

c) decreased
d) not affected

Answer: c
Explanation: None.

1. A better way of contiguous allocation to extend the file size is _____
a) adding an extent (another chunk of contiguous space)
b) adding an index table to the first contiguous block
c) adding pointers into the first contiguous block
d) none of the mentioned

Answer: a
Explanation: None.

2. If the extents are too large, then what is the problem that comes in?
a) internal fragmentation
b) external fragmentation
c) starvation
d) all of the mentioned

Answer: a
Explanation: None.

3. The FAT is used much as a _____
a) stack
b) linked list
c) data
d) pointer

Answer: b
Explanation: None.

4. A section of disk at the beginning of each partition is set aside to contain the table in _____
a) fat
b) linked allocation
c) hashed allocation
d) indexed allocation

Answer: a
Explanation: None.

5. Contiguous allocation has two problems _____ and _____ that linked allocation solves.
a) external – fragmentation & size – declaration
b) internal – fragmentation & external – fragmentation
c) size – declaration & internal – fragmentation
d) memory – allocation & size – declaration

Answer: a
Explanation: None.

6. Each _____ has its own index block.
a) partition
b) address
c) file
d) all of the mentioned

Answer: c

Explanation: None.

7. Indexed allocation _____ direct access.
a) supports
b) does not support
c) is not related to
d) none of the mentioned

Answer: a
Explanation: None.

8. The pointer overhead of indexed allocation is generally _____ the pointer overhead of linked allocation.
a) less than
b) equal to
c) greater than
d) keeps varying with

Answer: c
Explanation: None.

9. For any type of access, contiguous allocation requires _____ access to get a disk block.
a) only one
b) at least two
c) exactly two
d) none of the mentioned

Answer: a
Explanation: We can easily keep the initial address of the file in memory and calculate immediately the disk address of the ith block and read it directly.

10. Consider a disk where blocks 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 17, 18, 25, 26 and 27 are free and the rest of the blocks are allocated. Then the free space bitmap would be _____
a) 10000110000001110011111100011111…
b) 11000011000000111001111110001111…
c) 01111001111110001100000011100000…
d) 00111100111111000110000011100000…

Answer: d
Explanation: None.

1. _____ tend to represent a major bottleneck in system performance.
a) CPUs
b) Disks
c) Programs
d) I/O

Answer: b
Explanation: None.

2. In UNIX, even an 'empty' disk has a percentage of its space lost to _____
a) programs
b) inodes
c) virtual memory
d) stacks

Answer: b
Explanation: None.

3. By preallocating the inodes and spreading them across the volume, we _____ the system performance.
a) improve
b) decrease
c) maintain
d) do not affect

Answer: a
Explanation: None.

4. _____ writes occur in the order in which the disk subsystem receives them, and the writes are not buffered.
a) Asynchronous
b) Regular
c) Synchronous
d) Irregular

Answer: c
Explanation: None.

5. In _____ writes, the data is stored in the cache.
a) Asynchronous
b) Regular
c) Synchronous
d) Irregular

Answer: a
Explanation: None.

6. A file being read or written sequentially should not have its pages replaced in LRU order, because _____
a) it is very costly
b) the most recently used page will be used last
c) it is not efficient
d) all of the mentioned

Answer: b
Explanation: None.

7. In the optimized technique for sequential access _____ removes a page from the buffer as soon as the next page is requested.
a) write ahead
b) read ahead
c) free-behind
d) add-front

Answer: c
Explanation: None.

8. With _____ a requested page and several subsequent pages are read and cached.
a) write ahead
b) read ahead
c) free-behind
d) add-front

Answer: b
Explanation: None.

1. Some directory information is kept in main memory or cache to _____
a) fill up the cache

b) increase free space in secondary storage
c) decrease free space in secondary storage
d) speed up access

Answer: d
Explanation: None.

2. A systems program such as fsck in _____ is a consistency checker.
a) UNIX
b) Windows
c) Macintosh
d) Solaris

Answer: a
Explanation: None.

3. A consistency checker _____ and tries to fix any inconsistencies it finds.
a) compares the data in the secondary storage with the data in the cache
b) compares the data in the directory structure with the data blocks on disk
c) compares the system generated output and user required output
d) all of the mentioned

Answer: b
Explanation: None.

4. Each set of operations for performing a specific task is a _____
a) program
b) code
c) transaction
d) all of the mentioned

Answer: c
Explanation: None.

5. Once the changes are written to the log, they are considered to be _____
a) committed
b) aborted
c) completed
d) none of the mentioned

Answer: a
Explanation: None.

6. When an entire committed transaction is completed, _____
a) it is stored in the memory
b) it is removed from the log file
c) it is redone
d) none of the mentioned

Answer: b
Explanation: None.

7. What is a circular buffer?
a) writes to the end of its space and then continues at the beginning
b) overwrites older values as it goes
c) all of the mentioned
d) none of the mentioned

Answer: a
Explanation: None.

8. All the changes that were done from a transaction that did not commit before the system crashed, have to be _____
a) saved
b) saved and the transaction redone
c) undone
d) none of the mentioned

Answer: c
Explanation: None.

1. A machine in Network file system (NFS) can be _____
a) client
b) server
c) both client and server
d) neither client nor server

Answer: c
Explanation: None.

2. A _____ directory is mounted over a directory of a _____ file system.
a) local, remote
b) remote, local
c) local, local
d) none of the mentioned

Answer: d
Explanation: None.

3. The _____ becomes the name of the root of the newly mounted directory.
a) root of the previous directory
b) local directory
c) remote directory itself
d) none of the mentioned

Answer: b
Explanation: None.

4. _____ mounts, is when a file system can be mounted over another file system, that is remotely mounted, not local.
a) recursive
b) cascading
c) trivial
d) none of the mentioned

Answer: b
Explanation: None.

5. The mount mechanism _____ a transitive property.
a) exhibits
b) does not exhibit
c) may exhibit
d) none of the mentioned

Answer: b
Explanation: Mounting a remote file system does not give the client access to other file systems that were, by chance,

mounted over the former file system.

6. A mount operation includes the _____
a) name of the network
b) name of the remote directory to be mounted
c) name of the server machine storing it
d) all of the mentioned

Answer: b
Explanation: None.

7. The mount request is mapped to the corresponding _____ and is forwarded to the mount server running on the specific server machine.
a) IPC
b) System
c) CPU
d) RPC

Answer: b
Explanation: None.

8. The server maintains a/an _____ that specifies local file systems that it exports for mounting, along with names of machines that are permitted to mount them.
a) export list
b) import list
c) sending list
d) receiving list

Answer: a
Explanation: None.

9. In UNIX, the file handle consists of a _____ and _____
a) file-system identifier & an inode number
b) an inode number & FAT
c) a FAT & an inode number
d) a file pointer & FAT

Answer: a
Explanation: None.

1. The NFS servers _____
a) are stateless
b) save the current state of the request
c) maybe stateless
d) none of the mentioned

Answer: a
Explanation: None.

2. Every NFS request has a _____ allowing the server to determine if a request is duplicated or if any are missing.
a) name
b) transaction
c) sequence number
d) all of the mentioned

Answer: c
Explanation: None.

3. A server crash and recovery will _____ to a client.
a) be visible
b) affect
c) be invisible
d) harm

Answer: c
Explanation: All blocks that the server is managing for the client will be intact.

4. The server must write all NFS data _____
a) synchronously
b) asynchronously
c) index-wise
d) none of the mentioned

Answer: a
Explanation: None.

5. A single NFS write procedure _____
a) can be atomic
b) is atomic
c) is non atomic
d) none of the mentioned

Answer: b
Explanation: None.

6. The NFS protocol _____ concurrency control mechanisms.
a) provides
b) does not provide
c) may provide
d) none of the mentioned

Answer: b
Explanation: None.

7. _____ in NFS involves the parsing of a path name into separate directory entries – or components.
a) Path parse
b) Path name parse
c) Path name translation
d) Path name parsing

Answer: c
Explanation: None.

8. For every pair of component and directory vnode after path name translation _____
a) a single NFS lookup call is used sequentially
b) a single NFS lookup call is used beginning from the last component
c) at least two NFS lookup calls per component are performed
d) a separate NFS lookup call is performed

Answer: d
Explanation: None.

9. When a client has a cascading mount _____ server(s) is/are involved in a path name traversal.
a) at least one
b) more than one
c) more than two

d) more than three

Answer: b
Explanation: None.

1. I/O hardware contains _____
a) Bus
b) Controller
c) I/O port and its registers
d) All of the mentioned

Answer: d
Explanation: None.

2. The data-in register of I/O port is _____
a) Read by host to get input
b) Read by controller to get input
c) Written by host to send output
d) Written by host to start a command

Answer: a
Explanation: None.

3. The host sets _____ bit when a command is available for the controller to execute.
a) write
b) status
c) command-ready
d) control

Answer: c
Explanation: None.

4. When hardware is accessed by reading and writing to the specific memory locations, then it is called _____
a) port-mapped I/O
b) controller-mapped I/O
c) bus-mapped I/O
d) none of the mentioned

Answer: d
Explanation: It is called memory-mapped I/O.

5. Device drivers are implemented to interface _____
a) character devices
b) block devices
c) network devices
d) all of the mentioned

Answer: d
Explanation: None.

6. Which hardware triggers some operation after certain programmed count?
a) programmable interval timer
b) interrupt timer
c) programmable timer
d) none of the mentioned

Answer: a
Explanation: None.

7. The device-status table contains _____
a) each I/O device type
b) each I/O device address
c) each I/O device state
d) all of the mentioned

Answer: d
Explanation: None.

8. Which buffer holds the output for a device?
a) spool
b) output
c) status
d) magic

Answer: a
Explanation: None.

9. Which one of the following connects high-speed high-bandwidth device to memory subsystem and CPU.
a) Expansion bus
b) PCI bus
c) SCSI bus
d) None of the mentioned

Answer: a
Explanation: None.

10. A process is moved to wait queue when I/O request is made with _____
a) non-blocking I/O
b) blocking I/O
c) asynchronous I/O
d) synchronous I/O

Answer: b
Explanation: None.

1. In _____ information is recorded magnetically on platters.
a) magnetic disks
b) electrical disks
c) assemblies
d) cylinders

Answer: a
Explanation: None.

2. The heads of the magnetic disk are attached to a _____ that moves all the heads as a unit.
a) spindle
b) disk arm
c) track
d) none of the mentioned

Answer: b
Explanation: None.

3. The set of tracks that are at one arm position make up a _____
a) magnetic disks
b) electrical disks
c) assemblies

d) cylinders

Answer: d
Explanation: None.

4. The time taken to move the disk arm to the desired cylinder is called the _____
a) positioning time
b) random access time
c) seek time
d) rotational latency

Answer: c
Explanation: None.

5. The time taken for the desired sector to rotate to the disk head is called _____
a) positioning time
b) random access time
c) seek time
d) rotational latency

Answer: d
Explanation: None.

6. When the head damages the magnetic surface, it is known as _____
a) disk crash
b) head crash
c) magnetic damage
d) all of the mentioned

Answer: b
Explanation: None.

7. A floppy disk is designed to rotate _____ as compared to a hard disk drive.
a) faster
b) slower
c) at the same speed
d) none of the mentioned

Answer: b
Explanation: None.

8. What is the host controller?
a) controller built at the end of each disk
b) controller at the computer end of the bus
c) all of the mentioned
d) none of the mentioned

Answer: b
Explanation: None.

9. _____ controller sends the command placed into it, via messages to the _____ controller.
a) host, host
b) disk, disk
c) host, disk
d) disk, host

Answer: c
Explanation: None.

10. What is the disk bandwidth?
a) the total number of bytes transferred
b) total time between the first request for service and the completion on the last transfer
c) the total number of bytes transferred divided by the total time between the first request for service and the completion on the last transfer
d) none of the mentioned

Answer: c
Explanation: None.

1. Whenever a process needs I/O to or from a disk it issues a _____
a) system call to the CPU
b) system call to the operating system
c) a special procedure
d) all of the mentioned

Answer: b
Explanation: None.

2. If a process needs I/O to or from a disk, and if the drive or controller is busy then _____
a) the request will be placed in the queue of pending requests for that drive
b) the request will not be processed and will be ignored completely
c) the request will be not be placed
d) none of the mentioned

Answer: a
Explanation: None.Answer: d
Explanation: None.Answer: b
Explanation: None.

5. Random access in magnetic tapes is _____ compared to magnetic disks.
a) fast
b) very fast
c) slow
d) very slow

Answer: d
Explanation: None.

6. Magnetic tape drives can write data at a speed _____ disk drives.
a) much lesser than
b) comparable to
c) much faster than
d) none of the mentioned

Answer: b
Explanation: None.

7. On media that use constant linear velocity (CLV), the _____ is uniform.
a) density of bits on the disk
b) density of bits per sector
c) the density of bits per track
d) none of the mentioned

Answer: c
Explanation: The farther a track is from the center of the disk.

8. SSTF algorithm, like SJF _____ of some requests.

a) may cause starvation
b) will cause starvation
c) does not cause starvation
d) causes aging

Answer: a
Explanation: None.

9. In the _____ algorithm, the disk arm starts at one end of the disk and moves toward the other end, servicing requests till the other end of the disk. At the other end, the direction is reversed and servicing continues.
a) LOOK
b) SCAN
c) C-SCAN
d) C-LOOK

Answer: b
Explanation: None.

10. In the _____ algorithm, the disk head moves from one end to the other, servicing requests along the way. When the head reaches the other end, it immediately returns to the beginning of the disk without servicing any requests on the return trip.
a) LOOK
b) SCAN
c) C-SCAN
d) C-LOOK

Answer: c
Explanation: None.

11. In the _____ algorithm, the disk arm goes as far as the final request in each direction, then reverses direction immediately without going to the end of the disk.
a) LOOK
b) SCAN
c) C-SCAN
d) C-LOOK

Answer: a
Explanation: None.

1. The process of dividing a disk into sectors that the disk controller can read and write, before a disk can store data is known as _____
a) partitioning
b) swap space creation
c) low-level formatting
d) none of the mentioned

Answer: c
Explanation: None.

2. The data structure for a sector typically contains _____
a) header
b) data area
c) trailer
d) all of the mentioned

Answer: d
Explanation: None.

3. The header and trailer of a sector contain information used by the disk controller such as _____ and _____
a) main section & disk identifier
b) error correcting codes (ECC) & sector number
c) sector number & main section
d) disk identifier & sector number

Answer: b
Explanation: None.

4. The two steps the operating system takes to use a disk to hold its files are _____ and _____
a) partitioning & logical formatting
b) swap space creation & caching
c) caching & logical formatting
d) logical formatting & swap space creation

Answer: a
Explanation: None.

5. The _____ program initializes all aspects of the system, from CPU registers to device controllers and the contents of main memory, and then starts the operating system.
a) main
b) bootloader
c) bootstrap
d) rom

Answer: c
Explanation: None.

6. For most computers, the bootstrap is stored in _____
a) RAM
b) ROM
c) Cache
d) Tertiary storage

Answer: b
Explanation: None.

7. A disk that has a boot partition is called a _____
a) start disk
b) end disk
c) boot disk
d) all of the mentioned

Answer: c
Explanation: None.

8. Defective sectors on disks are often known as _____
a) good blocks
b) destroyed blocks
c) bad blocks
d) none of the mentioned

Answer: c
Explanation: None.

9. In SCSI disks used in high end PCs, the controller maintains a list of _____ on the disk. The disk is initialized during _____ formatting which sets aside spare sectors not visible to the operating system.

a) destroyed blocks, high level formatting
b) bad blocks, partitioning
c) bad blocks, low level formatting
d) destroyed blocks, partitioning

Answer: c
Explanation: None.

10. The scheme used in the above question is known as _____ or _____
a) sector sparing & forwarding
b) forwarding & sector utilization
c) backwarding & forwarding
d) sector utilization & backwarding

Answer: a
Explanation: None.

11. An unrecoverable error is known as _____
a) hard error
b) tough error
c) soft error
d) none of the mentioned

Answer: a
Explanation: None.

1. Virtual memory uses disk space as an extension of _____
a) secondary storage
b) main memory
c) tertiary storage
d) none of the mentioned

Answer: b
Explanation: None.

2. Using swap space significantly _____ system performance.
a) increases
b) decreases
c) maintains
d) does not affect

Answer: b
Explanation: Disk access is much slower than memory access.

3. Linux _____ the use of multiple swap spaces.
a) allows
b) does not allow
c) may allow
d) none of the mentioned

Answer: a
Explanation: Putting these swap spaces on separate disks reduces the load places on the I/O system.

4. A single swap space _____ reside in two places.
a) can
b) cannot
c) must not
d) none of the mentioned

Answer: a
Explanation: None.

5. If the swap space is simply a large file, within the file system, _____ used to create it, name it and allocate its space.
a) special routines must be
b) normal file system routines can be
c) normal file system routines cannot be
d) swap space storage manager is

Answer: b
Explanation: None.

6. For swap space created in a separate disk partition where no file system or directory structure is placed, _____ used to allocate and deallocate the blocks.
a) special routines must be
b) normal file system routines can be
c) normal file system routines cannot be
d) swap space storage manager is

Answer: d
Explanation: None.Answer: c
Explanation: None.

8. In UNIX, two per process _____ are used by the kernel to track swap space use.
a) process tables
b) swap maps
c) memory maps
d) partition maps

Answer: b
Explanation: None.

9. It is _____ to reread a page from the file system than to write it to swap space and then to reread it from there.
a) useless
b) less efficient
c) more efficient
d) none of the mentioned

Answer: c
Explanation: None.

1. RAID level 3 supports a lower number of I/Os per second, because _____
a) Every disk has to participate in every I/O request
b) Only one disk participates per I/O request
c) I/O cycle consumes a lot of CPU time
d) All of the mentioned

Answer: a
Explanation: None.

2. RAID level _____ is also known as block interleaved parity organisation and uses block level striping and keeps a parity block on a separate disk.
a) 1
b) 2
c) 3
d) 4

Answer: d
Explanation: None.

3. A performance problem with _____ is the expense of computing and writing parity.
a) non-parity based RAID levels
b) parity based RAID levels
c) all RAID levels
d) none of the mentioned

Answer: b
Explanation: None.

4. In RAID level 4, one block read, accesses _____
a) only one disk
b) all disks simultaneously
c) all disks sequentially
d) none of the mentioned

Answer: a
Explanation: Other requests are allowed to be processed by other disks.

5. The overall I/O rate in RAID level 4 is _____
a) low
b) very low
c) high
d) none of the mentioned

Answer: c
Explanation: All disks can be read in parallel.

6. A write of a block has to access _____
a) the disk on which the block is stored
b) parity disk
c) a parity block
d) all of the mentioned

Answer: d
Explanation: None.

7. RAID level 5 is also known as _____
a) bit-interleaved parity organization
b) block-interleaved parity organization
c) block-interleaved distributed parity
d) memory-style ECC organization

Answer: c
Explanation: None.

8. RAID level ____ spreads parity and data among all N+1 disks rather than storing data in N disks and parity in 1.
a) 3
b) 4
c) 5
d) 6

Answer: c
Explanation: None.

9. The potential overuse of a single parity disk is avoided in RAID level _____

a) 3
b) 4
c) 5
d) all of the mentioned

Answer: c
Explanation: None.

10. RAID level 0+1 is used because, RAID level 0 provides _____ whereas RAID level 1 provides _____
a) performance, redundancy
b) performance, reliability
c) redundancy, performance
d) none of the mentioned

Answer: b
Explanation: None.

11. If a disk fails in RAID level _____ rebuilding lost data is easiest.
a) 1
b) 2
c) 3
d) 4

Answer: a
Explanation: Data can be copied from another disk in raid level 1, for other raid levels all other disks have to be accessed.

12. Where performance and reliability are both important, RAID level ____ is used.
a) 0
b) 1
c) 2
d) 0+1

Answer: d
Explanation: None.

1. A large number of disks in a system improves the rate at which data can be read or written if _____
a) the disks are operated on sequentially
b) the disks are operated on selectively
c) the disks are operated in parallel
d) all of the mentioned

Answer: c
Explanation: None.

2. RAID stands for _____
a) Redundant Allocation of Inexpensive Disks
b) Redundant Array of Important Disks
c) Redundant Allocation of Independent Disks
d) Redundant Array of Independent Disks

Answer: d
Explanation: None.

3. If the mean time to failure of a single disk is 100,000 hours, then the mean time to failure of some disk in an array of 100 disks will be _____
a) 100 hours
b) 10 days

c) 10 hours
d) 1000 hours

Answer: d
Explanation: None.

4. The solution to the problem of reliability is the introduction of _____
a) aging
b) scheduling
c) redundancy
d) disks

Answer: c
Explanation: None.

5. The technique of duplicating every disk is known as _____
a) mirroring
b) shadowing
c) redundancy
d) all of the mentioned

Answer: a
Explanation: None.Answer: c
Explanation: None.

7. RAID level _____ refers to disk arrays with striping at the level of blocks, but without any redundancy.
a) 0
b) 1
c) 2
d) 3

Answer: a
Explanation: None.

8. RAID level _____ refers to disk mirroring.
a) 0
b) 1
c) 2
d) 3

Answer: b
Explanation: None.

9. RAID level _____ is also known as bit interleaved parity organisation.
a) 0
b) 1
c) 2
d) 3

Answer: d
Explanation: None.

10. A single parity bit can be used for _____
a) detection
b) multiple error corrections
c) few error corrections
d) all of the mentioned

Answer: a
Explanation: None.

11. RAID level _____ is also known as memory style error correcting code(ECC) organization.
a) 1
b) 2
c) 3
d) 4

Answer: b
Explanation: None.

12. RAID level 3 does not have _____ as in RAID level 1.
a) efficiency
b) enough storage space for data
c) storage overhead
d) time consumption overhead

Answer: c
Explanation: There is one mirror disk for every disk in level 1.

1. Tertiary storage is built with _____
a) a lot of money
b) unremovable media
c) removable media
d) secondary storage

Answer: c
Explanation: None.

2. Floppy disks are examples of _____
a) primary storage
b) secondary storage
c) tertiary storage
d) none of the mentioned

Answer: c
Explanation: None.

3. What is a magneto-optic disk?
a) primary storage
b) secondary storage
c) removable disk
d) none of the mentioned

Answer: c
Explanation: None.

4. The magneto-optic head flies _____ the disk surface than a magnetic disk head does.
a) much farther from
b) much closer to
c) at the same distance as
d) none of the mentioned

Answer: a
Explanation: None.

5. Optical disks _____ magnetism.

a) use
b) do not use
c) may use
d) none of the mentioned

Answer: b
Explanation: None.

6. The phase change disk is coated with a material that can freeze into either _____ or _____ state.
a) crystalline, solid
b) ice, amorphous
c) crystalline, liquid
d) crystalline, amorphous

Answer: d
Explanation: None.

7. WORM stands for _____
a) write only, read mandatory
b) write once, read many times
c) write only once, read multiple
d) none of the mentioned

Answer: b
Explanation: None.

8. A tape holds _____ data than optical or magnetic disk cartridge.
a) lesser
b) more
c) much lesser
d) none of the mentioned

Answer: b
Explanation: None.

9. Random access to tape is _____ a disk seek.
a) much slower than
b) much faster than
c) comparable to
d) none of the mentioned

Answer: a
Explanation: None.

10. A typical tape drive is _____ a typical disk drive.
a) more expensive than
b) cheaper than
c) of the same cost as
d) none of the mentioned

Answer: a
Explanation: None.

11. The surface area of tape is _____ the surface area of a disk.
a) much lesser than
b) much larger than
c) equal to
d) none of the mentioned

Answer: b
Explanation: None.

1. In domain structure what is Access-right equal to?
a) Access-right = object-name, rights-set
b) Access-right = read-name, write-set
c) Access-right = read-name, execute-set
d) Access-right = object-name, execute-set

Answer: a
Explanation: None.

2. What is meaning of right-set?
a) It is a subset consist of read and write
b) It is a subset of all valid operations that can be performed on the object
c) It is a subset consist of read, write and execute
d) None of the mentioned

Answer: b
Explanation: None.

3. What is Domain?
a) Domain = Set of all objects
b) It is a collection of protection policies
c) Domain= set of access-rights
d) None of the mentioned

Answer: c
Explanation: None.

4. What does the access matrix represent?
a) Rows-Domains, Columns-Objects
b) Rows-Objects, Columns-Domains
c) Rows-Access List, Columns-Domains
d) Rows-Domains, Columns-Access list

Answer: a
Explanation: None.

5. What are the three additional operations to change the contents of the access-matrix?
a) copy
b) Owner
c) control
d) all of the mentioned

Answer: d
Explanation: None.

6. Who can add new rights and remove some rights?
a) copy
b) transfer
c) limited copy
d) owner

Answer: d
Explanation: None.

7. What are the three copyrights?

a) copy
b) transfer
c) limited copy
d) all of the mentioned

Answer: d
Explanation: None.

8. Which two rights allow a process to change the entries in a column?
a) copy and transfer
b) copy and owner
c) owner and transfer
d) deny and copy

Answer: a
Explanation: None.

9. Which is an unsolvable problem in access-matrix?
a) Owner override
b) Brute force
c) Access denied
d) Confinement

Answer: d
Explanation: None.

10. Which of the following objects require protection?
a) CPU
b) Printers
c) Motherboard
d) All of the mentioned

Answer: b
Explanation: None.

11. What is 'separation' in security of Operating systems?
a) To have separate login for different users
b) To have separate Hard disk drive/partition for different users
c) It means keeping one user's objects separate from other users
d) None of the mentioned

Answer: c
Explanation: None.Answer: b
Explanation: None.Answer: b
Explanation: None.

15. What are the various roles of protection?
a) It is used to detect errors which can prevent contamination of system
b) It is used used to accelerate a process
c) It is used to optimize system downtime
d) None of the mentioned

Answer: a
Explanation: None.

16. Which of the following objects require protection?
a) Memory
b) Monitor

c) Power supply unit
d) All of the mentioned

Answer: a
Explanation: None.

1. Which principle states that programs, users and even the systems be given just enough privileges to perform their task?
a) principle of operating system
b) principle of least privilege
c) principle of process scheduling
d) none of the mentioned

Answer: b
Explanation: None.

2. _____ is an approach to restricting system access to authorized users.
a) Role-based access control
b) Process-based access control
c) Job-based access control
d) None of the mentioned

Answer: a
Explanation: None.

3. For system protection, a process should access _____
a) all the resources
b) only those resources for which it has authorization
c) few resources but authorization is not required
d) all of the mentioned

Answer: b
Explanation: None.

4. The protection domain of a process contains _____
a) object name
b) rights-set
c) both object name and rights-set
d) none of the mentioned

Answer: c
Explanation: None.

5. If the set of resources available to the process is fixed throughout the process's lifetime then its domain is _____
a) static
b) dynamic
c) neither static nor dynamic
d) none of the mentioned

Answer: a
Explanation: None.

6. Access matrix model for user authentication contains _____
a) a list of objects
b) a list of domains
c) a function which returns an object's type
d) all of the mentioned

Answer: d
Explanation: None.

7. Global table implementation of the matrix table contains _____
a) domain
b) object
c) right-set
d) all of the mentioned

Answer: d
Explanation: None.

8. For a domain _____ is a list of objects together with the operation allowed on these objects.
a) capability list
b) access list
c) both capability and access list
d) none of the mentioned

Answer: a
Explanation: None.

9. Which one of the following is capability based protection system?
a) hydra
b) cambridge CAP system
c) both hydra and cambridge CAP system
d) none of the mentioned

Answer: c
Explanation: None.

10. In UNIX, domain switch is accomplished via _____
a) file system
b) user
c) superuser
d) none of the mentioned

Answer: a
Explanation: None.

1. When an attempt is to make a machine or network resource unavailable to its intended users, the attack is called _____
a) denial-of-service attack
b) slow read attack
c) spoofed attack
d) starvation attack

Answer: a
Explanation: None.

2. The code segment that misuses its environment is called a _____
a) internal thief
b) trojan horse
c) code stacker
d) none of the mentioned

Answer: b
Explanation: None.

3. The internal code of any software that will set of a malicious function when specified conditions are met, is called _____

a) logic bomb
b) trap door
c) code stacker
d) none of the mentioned

Answer: a
Explanation: None.

4. The pattern that can be used to identify a virus is known as _____
a) stealth
b) virus signature
c) armoured
d) multipartite

Answer: b
Explanation: None.

5. Which one of the following is a process that uses the spawn mechanism to revage the system performance?
a) worm
b) trojan
c) threat
d) virus

Answer: a
Explanation: None.

6. What is a trap door in a program?
a) a security hole, inserted at programming time in the system for later use
b) a type of antivirus
c) security hole in a network
d) none of the mentioned

Answer: a
Explanation: None.

7. Which one of the following is not an attack, but a search for vulnerabilities to attack?
a) denial of service
b) port scanning
c) memory access violation
d) dumpster diving

Answer: b
Explanation: None.

8. File virus attaches itself to the _____
a) source file
b) object file
c) executable file
d) all of the mentioned

Answer: c
Explanation: None.

9. Multipartite viruses attack on _____
a) files
b) boot sector

c) memory
d) all of the mentioned

Answer: d
Explanation: None.

10. In asymmetric encryption _____
a) same key is used for encryption and decryption
b) different keys are used encryption and decryption
c) no key is required for encryption and decryption
d) none of the mentioned

Answer: b
Explanation: None.

1. What is true regarding 'Fence'?
a) Its a method to confine users to one side of a boundary
b) It can protect Operating system from one user
c) It cannot protect users from each other
d) All of the mentioned

Answer: d
Explanation: None.

2. What is not true regarding 'Fence'?
a) It is implemented via hardware register
b) It doesn't protect users from each other
c) It good to protect OS from abusive users
d) Its implementation is unrestricted and can take any amount of space in Operating system.

Answer: d
Explanation: None.

3. What is correct regarding 'relocation' w.r.t protecting memory?
a) It is a process of taking a program as if it began at address 0
b) It is a process of taking a program as if it began at address 0A
c) Fence cannot be used within relocation process
d) All of the mentioned

Answer: a
Explanation: None.

4. How can fence and relocation be used together?
a) To each program address, the contents of fence register are added
b) To contents of fence register is subtracted from actual address of program
c) To each program address, the contents of fence register are not added
d) None of the mentioned

Answer: a
Explanation: This both relocates the address and guarantees that no one can access a location lower than a fence address.

5. What is the basic need in protecting memory in multi-user environment?
a) We need two registers one 'start' and other 'end'
b) We need a variable register
c) A fence register has to be used known as base register.
d) None of the mentioned

Answer: c
Explanation: None.

6. What is the role of base/bound registers?
a) They give starting address to a program
b) Program's addresses are neatly confined to space between the base and the bound registers
c) They provide encrypted environment
d) This technique doesn't protects a program's address from modification by another user

Answer: b
Explanation: None.

7. What is all-or-nothing situation for sharing in memory?
a) Program makes all its data available to be accessed
b) It prohibits access to some
c) It creates rules who can access program memory
d) It separates program memory and data memory

Answer: a
Explanation: None.

8. How is disadvantage of all-or-nothing approach overcome?
a) Base/Bound
b) Relocation technique
c) Fence method
d) Tagged architecture

Answer: d
Explanation: None.

9. What is true regarding tagged architecture?
a) Every word of machine memory has one or more extra bits
b) Extra bits are used to do padding
c) Extra bits are not used to identify rights to that word
d) It is very compatible to code upgrades

Answer: a
Explanation: None.

10. What is best solution to have effect of unbounded number if base/bound registers?
a) Tagged architecture
b) Segmentation
c) Fence method
d) None of the mentioned

Answer: b
Explanation: None.

11. What is a major feature of segmentation?
a) Program is divided in data memory and program memory
b) Program is executed in segments
c) Program is divided into pieces having different access rights
d) It has effect of an unbounded architecture

Answer: c
Explanation: None.

12. What is the correct way the segmentation program address is stored?

a) name, offset
b) start, stop
c) access, rights
d) offset, rights

Answer: a
Explanation: OS can retrieve the real address via looking for the table then making a simple calculation: address of the name + offset.

13. What is the main objective of protection?
a) Ensure all objects are protected individually
b) Objects have different priority and thus different levels of protection
c) Ensure that each object is accessed correctly and only by allowed processes
d) None of the mentioned

Answer: c
Explanation: None.

14. What is the principle of least privilege?
a) Less privileges provide difficulty in executing admin tasks
b) Users can get temporary high privilege access
c) Users should be given just enough privileges to perform their tasks
d) None of the mentioned

Answer: c
Explanation: None.

15. What is the need of protection?
a) Prevent mischievous violation
b) Prevent and intentional
c) Ensure that each program component uses resources allotted to it only
d) All of the mentioned

Answer: d
Explanation: None.

1. What are the incorrect methods of revocation of access rights?
a) Immediate/Delayed
b) Selective/General
c) Partial/total
d) Crucial

Answer: d
Explanation: None.

2. Why is it difficult to revoke capabilities?
a) They are too many
b) They are not defined precicely
c) They are distributed throughout the system
d) None of the mentioned

Answer: c
Explanation: None.

3. What is the reacquisition scheme to revoke capability?
a) When a process capability is revoked then it won't be able to reacquire it
b) Pointers are maintained for each object which can be used to revoke
c) Indirect pointing is done to revoke object's capabilities

d) Master key can be used compare and revoke.

Answer: a
Explanation: None.

4. What is false regarding Back-Pointers scheme to revoke capability?
a) List of pointers is maintained with each object
b) When revocation is required these pointers are followed
c) This scheme is not adopted in MULTICS system
d) These point to all capabilities associated with that object

Answer: c
Explanation: None.

5. What is true about Indirection to revoke capability?
a) Capabilities point indirectly to the objects
b) Each capability will not have a unique entry in global
c) Table entries cannot be reused for other capabilities
d) This system was adopted in MULTICS system

Answer: a
Explanation: None.

6. How can Keys be defined or replaced?
a) create [keyname] [bits]
b) set-key
c) Key
d) MAKE [Key Name]

Answer: b
Explanation: None.

7. What are the characteristics of the Hydra system?
a) It consists of known access rights and interpreted by the system
b) A user can of protection system can declare other rights
c) Hydra system is not flexible
d) Hydra doesn't provide rights amplification

Answer: a
Explanation: None.

8. What are the characteristics of rights amplification in Hydra?
a) This scheme allows a procedure to be certified as trustworthy
b) Amplification of rights cannot be stated explicitly in declaration
c) It includes kernel rights such as read
d) All of the mentioned

Answer: a
Explanation: None.

9. What is the problem of mutually suspicious subsystem?
a) Service program can steal users data
b) Service program can malfunction and retain some rights of data provided by user
c) Calling program can get access to restricted portion from service program
d) Calling program gets unrestricted access

Answer: b
Explanation: Both calling program and service program are vulnerable to access each others private data/rights.

10. What are the characteristics of Cambridge CAP system as compared to Hydra system?
a) It is simpler and less powerful than hydra system
b) It is more powerful than hydra system
c) It is powerful than hydra system
d) It is not as secure as Hydra system

Answer: a
Explanation: None.

11. What are the two capabilities defined in CAP system?
a) data & software capability
b) address & data capability
c) hardware & software capability
d) software capability

Answer: a
Explanation: None.

1. In distributed system, each processor has its own _____
a) local memory
b) clock
c) both local memory and clock
d) none of the mentioned

Answer: c
Explanation: None.

2. If one site fails in distributed system then _____
a) the remaining sites can continue operating
b) all the sites will stop working
c) directly connected sites will stop working
d) none of the mentioned

Answer: a
Explanation: None.

3. Network operating system runs on _____
a) server
b) every system in the network
c) both server and every system in the network
d) none of the mentioned

Answer: a
Explanation: None.

4. Which technique is based on compile-time program transformation for accessing remote data in a distributed-memory parallel system?
a) cache coherence scheme
b) computation migration
c) remote procedure call
d) message passing

Answer: b
Explanation: None.

5. Logical extension of computation migration is _____
a) process migration
b) system migration

c) thread migration
d) data migration

Answer: a
Explanation: None.

6. Processes on the remote systems are identified by _____
a) host ID
b) host name and identifier
c) identifier
d) process ID

Answer: b
Explanation: None.

7. Which routing technique is used in a distributed system?
a) fixed routing
b) virtual routing
c) dynamic routing
d) all of the mentioned

Answer: d
Explanation: None.

8. In distributed systems, link and site failure is detected by _____
a) polling
b) handshaking
c) token passing
d) none of the mentioned

Answer: b
Explanation: None.

9. The capability of a system to adapt the increased service load is called _____
a) scalability
b) tolerance
c) capacity
d) none of the mentioned

Answer: a
Explanation: None.

10. Internet provides _____ for remote login.
a) telnet
b) http
c) ftp
d) rpc

Answer: a
Explanation: None.

1. What is not true about a distributed system?
a) It is a collection of processor
b) All processors are synchronized
c) They do not share memory
d) None of the mentioned

Answer: b

Explanation: None.

2. What are the characteristics of processor in distributed system?
a) They vary in size and function
b) They are same in size and function
c) They are manufactured with single purpose
d) They are real-time devices

Answer: a
Explanation: None.

3. What are the characteristics of a distributed file system?
a) Its users, servers and storage devices are dispersed
b) Service activity is not carried out across the network
c) They have single centralized data repository
d) There are multiple dependent storage devices

Answer: a
Explanation: None.

4. What is not a major reason for building distributed systems?
a) Resource sharing
b) Computation speedup
c) Reliability
d) Simplicity

Answer: d
Explanation: None.

5. What are the types of distributed operating system?
a) Network Operating system
b) Zone based Operating system
c) Level based Operating system
d) All of the mentioned

Answer: a
Explanation: None.

6. What are characteristic of Network Operating Systems?
a) Users are aware of multiplicity of machines
b) They are transparent
c) They are simple to use
d) All of the mentioned

Answer: a
Explanation: None.

7. How is access to resources of various machines is done?
a) Remote logging using ssh or telnet
b) Zone are configured for automatic access
c) FTP is not used
d) All of the mentioned

Answer: a
Explanation: None.

8. What are the characteristics of Distributed Operating system?
a) Users are aware of multiplicity of machines

b) Access is done like local resources
c) Users are aware of multiplicity of machines
d) They have multiple zones to access files

Answer: b
Explanation: None.

9. What are the characteristics of data migration?
a) transfer data by entire file or immediate portion required
b) transfer the computation rather than the data
c) execute an entire process or parts of it at different sites
d) none of the mentioned

Answer: a
Explanation: None.

10. What are the characteristics of computation migration?
a) transfer data by entire file or immediate portion required
b) transfer the computation rather than the data
c) execute an entire process or parts of it at different sites
d) none of the mentioned

Answer: b
Explanation: None.

11. What are the characteristics of process migration?
a) transfer data by entire file or immediate portion required
b) transfer the computation rather than the data
c) execute an entire process or parts of it at different sites
d) none of the mentioned

Answer: c
Explanation: None.

1. What are the parts of network structure?
a) Workstation
b) Gateway
c) Laptop
d) All of the mentioned

Answer: d
Explanation: None.

2. What is a valid network topology?
a) Multiaccess bus
b) Ring
c) Star
d) All of the mentioned

Answer: d
Explanation: None.

3. What are sites in network topology compared?
a) Basic cost
b) Communication cost
c) Reliability
d) All of the mentioned

Answer: d
Explanation: None.

4. Which design features of a communication network are important?
a) Naming and name resolution
b) Routing strategies
c) Connection strategies
d) All of the mentioned

Answer: d
Explanation: None.

5. What are the characteristics of Naming and Name resolution?
a) name systems in the network
b) address messages with the process-id
c) virtual circuit
d) message switching

Answer: b
Explanation: None.

6. What are routing strategies which is not used in distributed systems?
a) Fixed routing
b) Token routing
c) Virtual circuit
d) Dynamic routing

Answer: c
Explanation: None.

7. What are the connection strategies not used in distributed systems?
a) Circuit switching
b) Message switching
c) Token switching
d) Packet switching

Answer: c
Explanation: None.

8. How is are collisions avoided in network?
a) Carrier sense with multiple access (CSMA); collision detection (CD)
b) Carrier sense multiple access with collision avoidance
c) Message slots
d) All of the mentioned

Answer: d
Explanation: None.

9. What is a common problem found in distributed system?
a) Process Synchronization
b) Communication synchronization
c) Deadlock problem
d) Power failure

Answer: c
Explanation: None.

1. How many layers does the Internet model ISO consist of?

a) Three
b) Five
c) Seven
d) Eight

Answer: c
Explanation: None.

2. Which layer is responsible for The process-to-process delivery?
a) Network
b) Transport
c) Application
d) Physical

Answer: b
Explanation: None.

3. Which layer is the layer closest to the transmission medium?
a) Physical
b) Data link
c) Network
d) Transport

Answer: a
Explanation: None.

4. Header are _____ when data packet moves from upper to the lower layers?
a) Modified
b) Removed
c) Added
d) All of the mentioned

Answer: c
Explanation: None.

5. Which layer lies between the transport layer and data link layer?
a) Physical
b) Network
c) Application
d) Session

Answer: b
Explanation: None.

6. Which of the following is an application layer service?
a) Mail service
b) File transfer
c) Remote access
d) All of the mentioned

Answer: d
Explanation: None.

7. What are the different ways distributed may suffer?
a) Failure of a link
b) Failure of a site
c) Loss of message
d) All of the mentioned

Answer: d
Explanation: None.

8. What are design issues in distributed system structure?
a) Scalability
b) Fault-tolerance
c) Clustering
d) All of the mentioned

Answer: d
Explanation: None.

9. In which OSI layer encryption and decryption happens?
a) Application
b) Presentation
c) Transport
d) Data Link

Answer: b
Explanation: None.

10. What are the important steps followed when recovery from failure happens?
a) Post repairing integration with main system should happen smoothly and gracefully
b) Upon link failure both parties at end must not be notified
c) Fault recovery system must me adjusted
d) Failures are logged systematically

Answer: a
Explanation: None.

1. What are the different ways in which clients and servers are dispersed across machines?
a) Servers may not run on dedicated machines
b) Servers and clients can be on same machines
c) Distribution cannot be interposed between a OS and the file system
d) OS cannot be distributed with the file system a part of that distribution

Answer: b
Explanation: None.

2. What are not the characteristics of a DFS?
a) login transparency and access transparency
b) Files need not contain information about their physical location
c) No Multiplicity of users
d) No Multiplicity if files

Answer: c
Explanation: None.

3. What are characteristic of a DFS?
a) Fault tolerance
b) Scalability
c) Heterogeneity of the system
d) Upgradation

Answer: d
Explanation: None.

4. What are the different ways file accesses take place?

a) sequential access
b) direct access
c) indexed sequential access
d) all of the mentioned

Answer: d
Explanation: None.

5. Which is not a major component of a file system?
a) Directory service
b) Authorization service
c) Shadow service
d) System service

Answer: c
Explanation: None.

6. What are the different ways mounting of the file system?
a) boot mounting
b) auto mounting
c) explicit mounting
d) all of the mentioned

Answer: d
Explanation: None.

7. What is the advantage of caching in remote file access?
a) Reduced network traffic by retaining recently accessed disk blocks
b) Faster network access
c) Copies of data creates backup automatically
d) None of the mentioned

Answer: a
Explanation: None.

8. What is networked virtual memory?
a) Caching
b) Segmentation
c) RAM disk
d) None of the mentioned

Answer: a
Explanation: None.

9. What are the examples of state information?
a) opened files and their clients
b) file descriptors and file handles
c) current file position pointers
d) all of the mentioned

Answer: d
Explanation: None.

10. Which is not an example of state information?
a) Mounting information
b) Description of HDD space
c) Session keys
d) Lock status

Answer: b
Explanation: None.

1. What is a stateless file server?
a) It keeps tracks of states of different objects
b) It maintains internally no state information at all
c) It maintains some information in them
d) None of the mentioned

Answer: b
Explanation: None.

2. What are the characteristics of the stateless server?
a) Easier to implement
b) They are not fault-tolerant upon client or server failures
c) They store all information file server
d) They are redundant to keep data safe

Answer: a
Explanation: None.

3. Implementation of a stateless file server must not follow?
a) Idempotency requirement
b) Encryption of keys
c) File locking mechanism
d) Cache consistency

Answer: b
Explanation: None.

4. What are the advantages of file replication?
a) Improves availability & performance
b) Decreases performance
c) They are consistent
d) Improves speed

Answer: a
Explanation: None.

5. What are characteristic of NFS protocol?
a) Search for file within directory
b) Read a set of directory entries
c) Manipulate links and directories
d) All of the mentioned

Answer: d
Explanation: None.

6. What is the coherency of replicated data?
a) All replicas are identical at all times
b) Replicas are perceived as identical only at some points in time
c) Users always read the most recent data in the replicas
d) All of the mentioned

Answer: d
Explanation: None.

7. What are the three popular semantic modes?

a) Unix, Coherent & Session semantics
b) Unix, Transaction & Session semantics
c) Coherent, Transaction & Session semantics
d) Session, Coherent semantics

Answer: b
Explanation: None.

8. What are the characteristics of Unix semantics?
a) Easy to implement in a single processor system
b) Data cached on a per process basis using write through case control
c) Write-back enhances access performance
d) All of the mentioned

Answer: d
Explanation: None.

9. What are the characteristics of transaction semantics?
a) Suitable for applications that are concerned about coherence of data
b) The users of this model are interested in the atomicity property for their transaction
c) Easy to implement in a single processor system
d) Write-back enhances access performance

Answer: b
Explanation: None.

10. What are non characteristics of session semantics?
a) Each client obtains a working copy from the server
b) When file is closed, the modified file is copied to the file server
c) The burden of coordinating file sharing is ignored by the system
d) Easy to implement in a single processor system

Answer: d
Explanation: None.

1. The file once created can not be changed is called _____
a) immutable file
b) mutex file
c) mutable file
d) none of the mentioned

Answer: a
Explanation: None.

2. _____ of the distributed file system are dispersed among various machines of distributed system.
a) Clients
b) Servers
c) Storage devices
d) All of the mentioned

Answer: d
Explanation: None.

3. _____ is not possible in distributed file system.
a) File replication
b) Migration
c) Client interface
d) Remote access

Answer: b
Explanation: None.

4. Which one of the following hides the location where in the network the file is stored?
a) transparent distributed file system
b) hidden distributed file system
c) escaped distribution file system
d) spy distributed file system

Answer: a
Explanation: None.

5. In a distributed file system, when a file's physical storage location changes _____
a) file name need to be changed
b) file name need not to be changed
c) file's host name need to be changed
d) file's local name need to be changed

Answer: b
Explanation: None.

6. In a distributed file system, _____ is mapping between logical and physical objects.
a) client interfacing
b) naming
c) migration
d) heterogeneity

Answer: b
Explanation: None.

7. In a distributed file system, a file is uniquely identified by _____
a) host name
b) local name
c) the combination of host name and local name
d) none of the mentioned

Answer: c
Explanation: None.

8. There is no need to establish and terminate a connection through open and close operation in _____
a) stateless file service
b) stateful file service
c) both stateless and stateful file service
d) none of the mentioned

Answer: a
Explanation: None.

9. In distributed file system, file name does not reveal the file's _____
a) local name
b) physical storage location
c) both local name and physical storage location
d) none of the mentioned

Answer: b
Explanation: None.

10. Which one of the following is a distributed file system?

a) andrew file system
b) network file system
c) novel network
d) all of the mentioned

Answer: d
Explanation: None.
Answer: b
Explanation: None.Answer: d
Explanation: None.

3. What are the characteristics of mutual exclusion using centralized approach?
a) One processor as coordinator which handles all requests
b) It requires request,reply and release per critical section entry
c) The method is free from starvation
d) All of the mentioned

Answer: d
Explanation: None.Answer: b
Explanation: None.Answer: d
Explanation: None.

6. What are the characteristics of atomicity?
a) All operations associated are executed to completion or none are performed
b) One processor as coordinator which handles all requests
c) When responses are received from all processes, then the process can enter its Critical Section
d) Use communication links

Answer: a
Explanation: None.

7. What things are the transaction coordinator is responsible for?
a) Starting the execution of the transaction
b) Breaking transaction into a number of subtransactions
c) Coordinating the termination of the transaction
d) All of the mentioned

Answer: d
Explanation: None.

8. Which of the following advantages follows the single coordinator approach?
a) Simple implementation
b) Simple deadlock handling
c) bottleneck
d) All of the mentioned

Answer: d
Explanation: None.

9. Which of the following disadvantages follows the single coordinator approach?
a) Bottleneck
b) Slow response
c) Deadlock
d) One request per second

Answer: a
Explanation: None.

10. What are the disadvantages of majority protocol?
a) Complicated implementation
b) Deadlock cannot occur easily
c) Bottleneck
d) All of the mentioned

Answer: a
Explanation: None.

11. What are the parts of a global unique identifier?
a) Local unique timestamp
b) Remote timestamp
c) Clock number
d) All of the mentioned

Answer: a
Explanation: None.

12. Which are the two complementary deadlock-prevention schemes using timestamps?
a) The wait-die & wound-wait scheme
b) The wait-n-watch scheme
c) The wound-wait scheme
d) The wait-wound & wound-wait scheme

Answer: a
Explanation: None.

1. In distributed systems, a logical clock is associated with _____
a) each instruction
b) each process
c) each register
d) none of the mentioned

Answer: b
Explanation: None.

2. If timestamps of two events are same, then the events are _____
a) concurrent
b) non-concurrent
c) monotonic
d) non-monotonic

Answer: a
Explanation: None.

3. If a process is executing in its critical section _____
a) any other process can also execute in its critical section
b) no other process can execute in its critical section
c) one more process can execute in its critical section
d) none of the mentioned

Answer: b
Explanation: None.

4. A process can enter into its critical section _____
a) anytime
b) when it receives a reply message from its parent process
c) when it receives a reply message from all other processes in the system

d) none of the mentioned

Answer: c
Explanation: None.

5. For proper synchronization in distributed systems _____
a) prevention from the deadlock is must
b) prevention from the starvation is must
c) prevention from the deadlock & starvation is must
d) none of the mentioned

Answer: c
Explanation: None.

6. In the token passing approach of distributed systems, processes are organized in a ring structure _____
a) logically
b) physically
c) both logically and physically
d) none of the mentioned

Answer: a
Explanation: None.

7. In distributed systems, what will the transaction coordinator do?
a) starts the execution of transaction
b) breaks the transaction into number of sub transactions
c) coordinates the termination of the transaction
d) all of the mentioned

Answer: d
Explanation: None.

8. In case of failure, a new transaction coordinator can be elected by _____
a) bully algorithm
b) ring algorithm
c) both bully and ring algorithm
d) none of the mentioned

Answer: c
Explanation: None.

9. In distributed systems, election algorithms assumes that _____
a) a unique priority number is associated with each active process in system
b) there is no priority number associated with any process
c) priority of the processes is not required
d) none of the mentioned

Answer: a
Explanation: None.

10. According to the ring algorithm, links between processes are _____
a) bidirectional
b) unidirectional
c) both bidirectional and unidirectional
d) none of the mentioned

Answer: b
Explanation: None.