EOS-MCQ

1. **For which of the following offset can be positive or negative?**
   a) SEEK_SET
   b) SEEK_END
   c) SEEK_CUR
   d) All of the above
   e) None of the above

2. **In which of the IPC mechanism, data is not copied from user space to kernel space and vice a versa?**
   a) Pipe
   b) Message queue
   c) Shared memory
   d) Socket

3. **A bootloader is responsible for**
   i. loading an operating system kernel and its components
   ii. loading supporting infrastructure into memory
   iii. beginning the kernel's execution
   a) i and ii
   b) i and iii
   c) ii and iii
   d) All of the above

4. **In which of the following state change in child process, performing wait allows the system to release the resources associated with child process?**
   a) the child terminated
   b) the child was stopped by a signal
   c) the child was resumed by a signal
   d) All of the above

5. **Which of the following is not used to examine and change the signal action?**
   a) Signal
   b) Sigaction
   c) Sigprocmask
   d) All of the above

6. **Select the value of mode if O_CREAT flag is provided in open system call to give permissions as user - read, write; group - read; others – nothing**
   a) 0640
   b) 0644
   c) 0460
   d) 0464

7. **Select correct option for mutex.**
   a) A thread can lock mutex twice.
   b) thread locking mutex is owner of that mutex.

c) Owner cannot unlock the mutex.
d) None of the above

8. **What is internal fragmentation?**
   a) Process is not utilizing the whole partition allocated to it.
   b) process is utilizing the whole partition allocated to it.
   c) amount of space required for process is not available.
   d) amount of space required for process is available, but not contiguous.

9. **Physical memory : _____ : : Logical Memory : _____**
   a) Pages, Frames
   b) Frames, Pages
   c) Pages, Fragments
   d) fragments, Frames

10. **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 orderbits 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

11. **LRU page replacement algorithm suffers from Belady's anomaly.**
    a) true
    b) false

12. **Which of the following is journaling file system**
    a) JFS
    b) UFS
    c) ext2
    d) ext3

13. **Thrashing**
    a) reduces page I/O
    b) decreases the degree of multiprogramming
    c) implies excessive page I/O
    d) improves the system performance

14. **While fork(), the child's set of pending signals is initially _____.**
    a) filled with same as parent
    b) empty
    c) filled except masked signals in parent
    d) None of the above

15. The child does not inherit _____.

a) semaphore adjustments from its parent
b) its parent's memory locks
c) timers from its parent
d) All of the above
e) None of the above

16. Which of the following architecture does not support embedded operating system?

a) semaphore adjustments from its parent
b) its parent's memory locks
c) timers from its parent
d) All of the above
e) None of the above

17. _____ provide the information about the existence of files, their location on secondary memory, their current status and other attributes.

a) Memory Table
b) I/O Table
c) File Tables
d) Process Tables

18.
```
#include <stdio.h>
#include <unistd.h>
int main()
{
        fork();
        fork();
        fork();
        printf(" A New Process Created."); return 0;
}
```
How many times Above message "A New Process Created" is printed.

a) 1
b) 3
c) 8
d) 16

19. sigprockmask() system call does _____

a) change the process signal mask.
b) retrieve the existing mask
c) Both of the above
d) None of the above

20. Spinlocks are intended to provide _____ only.

a) Mutual Exclusion
b) Bounded Waiting
c) Aging
d) Progress

21. Which of the following not belong to exec() family?

a) execv();
b) execvp();
c) execvpe();
d) execlv();

22. msgsnd() returns an integer. which of the following is true statement?

a) Return value > 1 indicates a correct send.
b) Return value = 0 indicates a correct send
c) Both of above
d) Return value = -1 indicates an error has occurred

23. _____ is a technique of gradually increasing the priority of the processes that wait in the system for a long time.

a) Starvation
b) Waiting queue
c) Aging
d) None of the above

24. Multiple source files are compiled together to form a single kernel binary image. Such a kernel called as _____.

a) Micro-kernel
b) Monolithic kernel
c) Modular kernel
d) Hybrid kernel

25. Named pipe or FIFO can be created by _____ command.

a) pipe
b) mkfifo
c) mkpipe
d) makefifo

26. Bankers' algorithm is an example of _____.

a) deadlock prevention
b) deadlock avoidance
c) deadlock detection
d) deadlock recovery

27. Preemption is _____.

a) forced deallocation of the CPU from a program which is executing on the CPU
b) release of CPU by a program after the completing its task
c) forced allotment of CPU by a program to itself
d) a program is terminating itself due to detection of error

28. Which one of the following bootloaders is not used by linux?

a) GRUB
b) LILO
c) NTLDR
d) None of the mentioned

29. Each thread has its own user stack and no kernel stack.

a) True
b) False

30. 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

31. Mutex Functionality :

a) based up on locking mechanism
b) based up on signalling mechanism
c) both A and B
d) None of the above

32. On success, pthread_join() returns :

a) 0
b) 1
c) Error No
d) None of the above

33. fork() returns non zero value in child process and zero in parent process.

a) False
b) True

34. Select odd option from below

a) execl("./cmdline", "cmdline", "one", "two", "three", "four", NULL);
b) char *args[] = { "cmdline", "one", "two", "three", NULL }; execv("./cmdline", args);
c) execlp("ps", "ps", "-e", "-o", "pid,ppid,cmd");
d) None of the above

35. Which is Fastest IPC mechanism

a) FIFO
b) Pipe
c) Shared Memory
d) Queue

36. 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

37. 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

38. 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

39. What will happen if a non-recursive mutex is locked more than once?

a) Starvation
b) Deadlock
c) Aging
d) Signaling

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

a) continue()
b) start()
c) wakeup()
d) getup()

41. 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

42. To access the services of operating system, the interface is provided by the _____

a) System calls
b) API

c) Library
d) Assembly instructions

43. 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 cannot be loaded in running operating system
d) kernel remains in the memory during the entire computer session

44. 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

45. 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

46. 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

47. 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

48. 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

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

50. The MacOS X has _____

a) monolithic kernel
b) hybrid kernel
c) microkernel
d) monolithic kernel with modules

51. 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

52. 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

53. In Unix, Which system call creates the new process?

a) fork
b) create
c) new
d) none of the mentioned

54. A process can be terminated due to _____

a) normal exit
b) fatal error
c) killed by another process
d) all of the mentioned

55. 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

56. 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

57. 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

58. A process stack does not contain _____

a) Function parameters

b) Local variables

c) Return addresses

d) PID of child process

59. 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

60. 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

61. A Process Control Block(PCB) does not contain which of the following?

a) Code

b) Stack

c) Bootstrap program

d) Data

62. The number of processes completed per unit time is known as _____

a) Output

b) Throughput

c) Efficiency

d) Capacity

63. 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

64. Which of the following is not the state of a process?

a) New

b) Old

c) Waiting

d) Running

65. What is a Process Control Block?

a) Process type variable

b) Data Structure

c) A secondary storage section

d) A Block in memory

66. The entry of all the PCBs of the current processes is in _____

a) Process Register

b) Program Counter

c) Process Table

d) Process Unit

67. 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

68. 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

69. 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

70. Which of the following do not belong to queues for processes?

a) Job Queue

b) PCB queue

c) Device Queue

d) Ready Queue

71. 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

72. 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

73. 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

74. 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

75. 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

76. 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

77. 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

78. The only state transition that is initiated by the user process itself is _____

a) block

b) wakeup

c) dispatch

d) none of the mentioned

79. 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

80. 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

81. 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

82. 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

83. 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

84. Which of the following does not interrupt a running process?

a) A device

b) Timer

c) Scheduler process

d) Power failure

85. Which process can be affected by other processes executing in the system?

a) cooperating process

b) child process

c) parent process

d) init process

86. 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

87. 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

88. Which one of the following is a synchronization tool?

a) thread

b) pipe

c) semaphore

d) socket

89. 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

90. 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

91. Process synchronization can be done on _____

a) hardware level

b) software level

c) both hardware and software level

d) none of the mentioned

92. 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

93. 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

94. 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

95. A parent process calling ____ system call will be suspended until children processes terminate.

a) wait
b) fork
c) exit
d) exec

96. 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

97. 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

98. In UNIX, each process is identified by its _____

a) Process Control Block
b) Device Queue
c) Process Identifier
d) None of the mentioned

99. 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

100. 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

101. 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

102. 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

103. 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

104. 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

105. 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

106. 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

107. 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

108. 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

109. 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

110. 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

111. Bounded capacity and Unbounded capacity queues are referred to as _____

a) Programmed buffering
b) Automatic buffering
c) User defined buffering
d) No buffering

112. The initial program that is run when the computer is powered up is called _____

a) boot program
b) bootloader
c) initializer
d) bootstrap program

113. 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

114. 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

115. What is an ISR?

a) Information Service Request
b) Interrupt Service Request
c) Interrupt Service Routine
d) Information Service Routine

116. 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

117. 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

118. 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

119. 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

120. 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

121. 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

122. 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

123. 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

124. 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

125. 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

126. 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

127. 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

128. 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

129. 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

130. 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

131. 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

132. 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

133. 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

134. CPU scheduling is the basis of _____

a) multiprocessor systems

b) multiprogramming operating systems

c) larger memory sized systems

d) none of the mentioned

135. With multiprogramming _____ is used productively.

a) time

b) space

c) money

d) all of the mentioned

136. 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

137. 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

138. 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

139. 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

140. 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

141. 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

142. 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

143. 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

144. 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

145. 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

146. 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

147. 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

148. 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

149. 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

150. 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

151. 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

152. Complex scheduling algorithms _____

a) are very appropriate for very large computers

b) use minimal resources

c) use many resources

d) all of the mentioned

153. 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

154. 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

155. 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

156. 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

157. 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

158. 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

159. 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

160. Which of the following statements are true?

I. Shortest remaining time first scheduling may cause starvation

II. Pre-emptive scheduling may cause starvation

III. Round robin is better than FCFS in terms of response time

a) I only

b) I and III only

c) II and III only

d) I, II and III

161. 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

162. 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

163. The FCFS algorithm is particularly troublesome for _____

a) time sharing systems

b) multiprogramming systems

c) multiprocessor systems

d) operating systems

164. 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

165. 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

166. 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

167. 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

168. A solution to the problem of indefinite blockage of low – priority processes is _____

a) Starvation
b) Wait queue
c) Ready queue
d) Aging

169. Which of the following scheduling algorithms gives minimum average waiting time?

a) FCFS
b) SJF
c) Round – robin
d) Priority

170. Concurrent access to shared data may result in _____

a) data consistency
b) data insecurity
c) data inconsistency
d) none of the mentioned

171. 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

172. **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

173. **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

174. **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

175. **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

176. **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

177. 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

178. An un-interruptible unit is known as _____

a) single

b) atomic

c) static

d) none of the mentioned

179. TestAndSet instruction is executed _____

a) after a particular process

b) periodically

c) atomically

d) none of the mentioned

180. 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

181. What are the two atomic operations permissible on semaphores?

a) wait

b) stop

c) hold

d) none of the mentioned

182. 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

183. 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

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

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

186. **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

187. **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

188. **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

189. 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

190. 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

191. 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

192. What are the two kinds of semaphores?

a) mutex & counting

b) binary & counting

c) counting & decimal

d) decimal & binary

193. 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

194. 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?

a) 42

b) 2

c) 7

d) 12

195. A binary semaphore is a semaphore with integer values _____

a) 1

b) -1

c) 0.8

d) 0.5

196. 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;
```

X is set to 5 before either process begins execution. As usual, statements within a process are executed sequentially, but statements in process A may execute in any order with respect to statements in process B.

How many different values of X are possible after both processes finish executing?

a) two

b) three

c) four

d) eight

197. 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;
```

T is set to 0 before either process begins execution and, as before, X is set to 5. Now, how many different values of X are possible after both processes finish executing?

a) one

b) two

c) three

d) four

198. Semaphores are mostly used to implement _____

a) System calls

b) IPC mechanisms

c) System protection

d) None of the mentioned

199. 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

200. 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

201. 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

202. 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

203. 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

204. 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

205. All processes share a semaphore variable mutex**, initialized to 1. Each process must execute wait(mutex) before entering the critical section and signal(mutex) afterward.**
Suppose a process executes in the following manner.

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

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

206. All processes share a semaphore variable mutex**, initialized to 1. Each process must execute wait(mutex) before entering the critical section and signal(mutex) afterward.**
Suppose a process executes in the following manner.

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

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

207. 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.

```
Method used by P1 :
while(S1==S2);
Critical section
S1 = S2;

Method used by P2 :
while(S1!=S2);
Critical section
S2 = not(S1);
```

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

208. 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

209. 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

210. 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

211. 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

212. 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

213. 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

214. 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

215. A problem encountered in multitasking when a process is perpetually denied necessary resources is called _____

a) deadlock

b) starvation

c) inversion

d) aging

216. 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

217. 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

218. 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

219. The request and release of resources are _____

a) command line statements
b) interrupts
c) system calls
d) special programs

220. 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

221. For a deadlock to arise, which of the following conditions must hold simultaneously?

a) Mutual exclusion
b) No pre-emption
c) Hold and wait
d) All of the mentioned

222. 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

223. 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

224. 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

225. For non sharable resources like a printer, mutual exclusion _____

a) must exist

b) must not exist

c) may exist

d) none of the mentioned

226. 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

227. 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

228. 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

229. 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 pre-empted

230. 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

231. CPU fetches the instruction from memory according to the value of _____

a) program counter

b) status register

c) instruction register

d) program status word

232. A memory buffer used to accommodate a speed differential is called _____

a) stack pointer

b) cache

c) accumulator

d) disk buffer

233. 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

234. Run time mapping from virtual to physical address is done by _____

a) Memory management unit

b) CPU

c) PCI

d) None of the mentioned

235. 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

236. 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

237. Program always deals with _____

a) logical address

b) absolute address

c) physical address

d) relative address

238. The page table contains _____

a) base address of each page in physical memory

b) page offset

c) page size

d) none of the mentioned

239. 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

240. Operating System maintains the page table for _____

a) each process

b) each thread

c) each instruction

d) each address

241. The main memory accommodates _____

a) operating system

b) cpu

c) user processes

d) all of the mentioned

242. 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

243. 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

244. 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

245. 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

246. 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

247. 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

248. Using transient code, _____ the size of the operating system during program execution.

a) increases

b) decreases

c) changes

d) maintains

249. 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

250. 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

251. 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

252. 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

253. A solution to the problem of external fragmentation is _____

a) compaction
b) larger memory space
c) smaller memory space
d) none of the mentioned

254. 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

255. 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

256. 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

257. _____ 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

258. 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

259. 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

260. 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

261. 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

262. Physical memory is broken into fixed-sized blocks called _____

a) frames

b) pages

c) backing store

d) none of the mentioned

263. Logical memory is broken into blocks of the same size called _____

a) frames

b) pages

c) backing store

d) none of the mentioned

264. 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

265. The _____ is used as an index into the page table.

a) frame bit

b) page number

c) page offset

d) frame offset

266. The ____ table contains the base address of each page in physical memory.

a) process

b) memory

c) page

d) frame

267. The size of a page is typically _____

a) varied

b) power of 2

c) power of 4

d) none of the mentioned

268. With paging there is no _____ fragmentation.

a) internal

b) external

c) either type of

d) none of the mentioned

269. 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

270. Paging increases the _____ time.

a) waiting

b) execution

c) context – switch

d) all of the mentioned

271. Smaller page tables are implemented as a set of _____

a) queues

b) stacks

c) counters

d) registers

272. 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

273. 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

274. For every process there is a _____

a) page table

b) copy of page table

c) pointer to page table

d) all of the mentioned

275. 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

276. Each entry in a translation lookaside buffer (TLB) consists of _____

a) key

b) value

c) bit value

d) constant

277. 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

278. 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

279. 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

280. 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

281. 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

282. Illegal addresses are trapped using the ____ bit.

a) error
b) protection
c) valid – invalid
d) access

283. 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

284. 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

285. 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

286. 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

287. 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

288. 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

289. Each entry in a segment table has a _____

a) segment base
b) segment peak
c) segment value
d) none of the mentioned

290. 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

291. 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

292. 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

293. 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

294. The protection bit is 0/1 based on _____

a) write only

b) read only

c) read – write

d) none of the mentioned

295. 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

296. 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

297. 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

298. 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

299. 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

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

a) ext2

b) ext3

c) ext4

d) none of the mentioned

301. Which binary format is supported by linux?

a) a.out

b) elf

c) both a.out and ELF

d) none of the mentioned

302. The first process launched by the linux kernel is _____

a) init process

b) zombie process

c) batch process

d) boot process

303. Which desktop environment is not used in any linux distribution?

a) gnome

b) kde

c) unity

d) none of the mentioned

304. Standard set of functions through which interacts with kernel is defined by _____

a) system libraries
b) kernel code
c) compilers
d) utility programs

305. What is Linux?

a) single user, single tasking
b) single user, multitasking
c) multi user, single tasking
d) multi user, multitasking

306. Which one of the following is not a linux distribution?

a) debian
b) gentoo
c) open SUSE
d) multics

307. 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

308. A process can be _____

a) single threaded
b) multithreaded
c) both single threaded and multithreaded
d) none of the mentioned

309. 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

310. 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

311. 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

312. 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

313. 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

314. Which one of the following is not a valid state of a thread?

a) running

b) parsing

c) ready

d) blocked

315. The register context and stacks of a thread are deallocated when the thread?

a) terminates

b) blocks

c) unblocks

d) spawns

316. 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

317. A thread is also called _____

a) Light Weight Process(LWP)

b) Heavy Weight Process(HWP)

c) Process

d) None of the mentioned

318. 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

319. 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

320. 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

321. 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

322. 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

323. 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

324. The kernel is _____ of user threads.

a) a part of
b) the creator of
c) unaware of
d) aware of

325. 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

326. 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

327. 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

328. 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

329. Which of the following system calls does not return control to the calling point, on termination?

a) fork
b) exec
c) ioctl
d) longjmp

330. 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

331. Which of the following system calls transforms executable binary file into a process?

a) fork

b) exec

c) ioctl

d) longjmp

332. Which of the following calls never returns an error?

a) getpid

b) fork

c) ioctl

d) open

333. 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

334. 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

335. 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

336. 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

337. 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

338. 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

339. Signals of a given type _____

a) are queued
b) are all sent as one
c) cannot be queued
d) none of the mentioned

340. 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

341. Signals are identified by _____

a) signal identifiers
b) signal handlers
c) signal actions
d) none of the mentioned

342. 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

343. The _____ maintains pending and blocked bit vectors in the context of each process.

a) CPU
b) Memory
c) Process
d) Kernel

344. In UNIX, the set of masked signals can be set or cleared using the _____ function.

a) sigmask
b) sigmaskproc
c) sigprocmask
d) sigproc

345. 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

346. The usual effect of abnormal termination of a program is _____

a) core dump file generation
b) system crash
c) program switch
d) signal destruction

347. In UNIX, the abort() function sends the _____ signal to the calling process, causing abnormal termination.

a) SIGTERM
b) SIGSTOP
c) SIGABORT
d) SIGABRT

348. 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

349. 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

350. In UNIX, the _____ system call is used to send a signal.

a) sig
b) send
c) kill
d) sigsend

351. Because of virtual memory, the memory can be shared among _____

a) processes
b) threads
c) instructions
d) none of the mentioned

352. _____ 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

353. The pager concerns with the _____

a) individual page of a process

b) entire process

c) entire thread

d) first page of a process

354. Swap space exists in _____

a) primary memory

b) secondary memory

c) cpu

d) none of the mentioned

355. 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

356. Effective access time is directly proportional to _____

a) page-fault rate

b) hit ratio

c) memory access time

d) none of the mentioned

357. 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

358. 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

359. 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

360. Working set model for page replacement is based on the assumption of _____

a) modularity

b) locality

c) globalization

d) random access

361. 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

362. The instruction being executed, must be in _____

a) physical memory

b) logical memory

c) physical & logical memory

d) none of the mentioned

363. Error handler codes, to handle unusual **errors are _____**

a) almost never executed

b) executed very often

c) executed periodically

d) none of the mentioned

364. 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

365. 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

366. Virtual memory is normally implemented by _____

a) demand paging

b) buses

c) virtualization

d) all of the mentioned

367. 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

368. 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

369. 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

370. 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

371. 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

372. When a page fault occurs, the state of the interrupted process is _____

a) disrupted

b) invalid

c) saved

d) none of the mentioned

373. 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

374. 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

375. 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

376. 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

377. _____ 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

378. 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

379. 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

380. File type can be represented by _____

a) file name

b) file extension

c) file identifier

d) none of the mentioned

381. 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

382. 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

383. Mapping of file is managed by _____

a) file metadata

b) page table

c) virtual memory

d) file system

384. 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

385. 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

386. 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

387. In _____ information is recorded magnetically on platters.

a) magnetic disks

b) electrical disks

c) assemblies

d) cylinders

388. 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

389. The set of tracks that are at one arm position make up a _____

a) magnetic disks

b) electrical disks

c) assemblies

d) cylinders

390. 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

391. 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

392. 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

393. 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

394. 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

395. _____ controller sends the command placed into it, via messages to the _____ controller.

a) host, host

b) disk, disk

c) host, disk

d) disk, host

396. 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

397. 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

398. 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

399. Consider a disk queue with requests for I/O to blocks on cylinders.
98 183 37 122 14 124 65 67
Considering FCFS (first cum first served) scheduling, the total number of head movements is, if the disk head is initially at 53 is?

a) 600

b) 620

c) 630

d) 640

400. Consider a disk queue with requests for I/O to blocks on cylinders.
98 183 37 122 14 124 65 67
Considering SSTF (shortest seek time first) scheduling, the total number of head movements is, if the disk head is initially at 53 is?
a) 224
b) 236
c) 245
d) 240

401. Random access in magnetic tapes is _____ compared to magnetic disks.
a) fast
b) very fast
c) slow
d) very slow

402. 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

403. 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

404. SSTF algorithm, like SJF _____ of some requests.
a) may cause starvation
b) will cause starvation
c) does not cause starvation
d) causes aging

405. 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

406. 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

407. 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

408. 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

409. The data structure for a sector typically contains _____

a) header
b) data area
c) trailer
d) all of the mentioned

410. 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

411. 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

412. 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

413. For most computers, the bootstrap is stored in _____

a) RAM
b) ROM
c) Cache
d) Tertiary storage

414. A disk that has a boot partition is called a _____

a) start disk
b) end disk
c) boot disk
d) all of the mentioned

415. Defective sectors on disks are often known as _____

a) good blocks
b) destroyed blocks
c) bad blocks
d) none of the mentioned

416. 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

417. An unrecoverable error is known as _____

a) hard error
b) tough error
c) soft error
d) none of the mentioned

418. By default if any regular file is created, the number of link is displayed as 1 ?

a) True
b) False

419. How many links are created when we creat a directory file?

a) 1

b) 2

c) 3

d) 4

420. A user creates a link to a file file1 using the following command “ln file1 file2”. Which of the following is not true?

a) file1 and file2 have the same inode numbers

b) The number of links for file1 is displayed as 1

c) The number of links for file1 is displayed as 2

d) The number of links for file2 is displayed as 2

421. There are two hard links to the “file1” say hl and h2 and a softlink sl. What happens if we deleted the “file1”?

a) We will still be able to access the file with hl and h2 but not with sl

b) We will not be able to access the file with hl and h2 but with sl

c) We will be able to access the file with any of hl, h2 and sl

d) We will not be able to access the file with any of hl, h2 and sl

422. If two files on same partition point to the same inode structure they are called

a) Soft links

b) Hard links

c) Alias

d) Special files

423. Deleting a soft-link

a) Deletes the destination file

b) Deletes both the softlink and the destination file

c) Deletes just the softlink

d) backup of the destination is automatically created

424. Creation of hardlinks that point across partitions

a) is allowed only to root user

b) can be done by all users

c) the effects are unspecified

d) is not allowed

425. Which command is used to change permissions of files and directories?

a) mv

b) chgrp

c) chmod

d) set

426. Where can I find the printer in the file structure?

a) /etc
b) /dev
c) /lib
d) /printer

427. Which of the following statement is true?

a) The cp command will preserve the meta data of the file
b) The sort command by default sorts in the numeric order
c) The mv command will preserve the meta data of the file
d) The command ps will display the filesystem usage

428. What UNIX command is used to update the modification time of a file?

a) time
b) modify
c) cat
d) touch

429. Which of the following time stamps need not exist for a file on traditional unix file system

a) Access Time
b) Modification Time
c) Creation Time
d) Change Time

430. Which command is used to set limits on file size

a) fsize
b) flimit
c) ulimit
d) usize

431. Which option of rmdir command will remove all directories a, b, c if path is a/b/c

a) –b
b) –o
c) –p
d) –t

432. Which represents the user home directory

a) /
b) .
c) ..
d) ~

433. If a file is removed in Unix using 'rm' then

a) The file can be recovered by a normal user

b) The file cannot be recovered by a user

c) The file can be fully recovered provided the sytem is not rebooted

d) The file will be moved to /lost+found directory and can be recovered only by administrator's intervention

434. Executing the 'cd ..' command when at the root level causes

a) Error message indicating the user can't access beyond the root level

b) Behavior is unix-flavor dependent

c) Results in changing to the 'home' directory

d) Nothing happens

435. How do you rename file "new" to file "old"?

a) mv new old

b) move new old

c) cp new old

d) rn new old

436. What command is used to copy files and directories?

a) copy

b) cp

c) rn

d) cpy

437. When mv f1 f2 is executed which file's inode is freed?

a) f1

b) f2

c) new inode will be used

d) no inode is freed

438. Any file's attribute information is stored in which structure on the disk

a) Inode

b) Data blocks

c) File blocks

d) Directory file

439. The soft link will increase the link counter of the file.(T/F)

a) True

b) False

440. When you use the ln command, which of the following occurs?

a) a file is created that points to an existing file

b) a file is created that is a copy of an existing file

c) a file is moved from one location to another

d) a file is renamed

441. srwxr-xrw- is a

a) internet socket file

b) unix domain socket file

c) symbolic link

d) shared file

442. Binary or executable files are:

a) Regular files

b) Device files

c) Special files

d) Directory files

443. The directory file contains:

a) File names & File Sizes

b) File names & Inode Numbers

c) File names & Address

d) File names & Permissions

444. Which directory contain device special files?

a) /etc

b) /etc/dev

c) /root/bin

d) /dev

445. Which of the following is not a valid file type on Linux

a) Socket

b) Softlink

c) Inode

d) FIFO

446. Which of the following is not correct statement regarding file types?

a) Hard links share same inode number

b) Soft links cannot be created across partitions

c) Socket files are Unix domain sockets

d) Character file is a special file

447. Which are the two types of device files?

a) Character & Block

b) Character & Socket

c) Block & FIFO

d) Input & output

448. Which is an example for character special file?

a) Hard disk

b) CD-ROM

c) Terminal

d) Memory

449. Which is an example for block special file?

a) Virtual Terminal

b) CD-ROM

c) Terminal

d) Serial modem

450. All device files are stored in which directory?

a) /etc

b) /bin

c) /dev

d) /usr

451. The file permission 764 means:

a) Every one can read, group can execute only and the owner can read and write

b) Every one can read and write, but owner alone can execute

c) Every one can read, group including owner can write, owner alone can execute

d) Every one can read and write and execute

452. The permission -rwxr--r-- represented in octal expression will be

a) 777

b) 666

c) 744

d) 711

453. Effective user id can be set using following permission

a) 0777

b) 2666

c) 4744

d) 1711

454. Effective group id can be set using following permission

a) 0777

b) 2666

c) 4744

d) 1711

455. Sticky bit can be set using following permission

a) 0777

b) 2666

c) 4744

d) 1711

456. The permission -rwSr–r– represented in octal expression will be

a) 0777

b) 2666

c) 4744

d) 4644

457. The permission -rwxr-sr– represented in octal expression will be

a) 0777

b) 2766

c) 2744

d) 2754

458. If user tries to remove (rm) a readonly file (444 permission), what will happen?

a) The file is removed successfully (and silently)

b) The rm command prompts for a confirmation, the command is successful upon confirmation

c) The rm command prompts for a confirmation, however the operation fails because of insufficient permissions

d) The rm command fails because of insufficient permissions

459. A user does a chmod operation on a file. Which of the following is true?

a) The last accessed time of the file is updated

b) The last modification time of the file is updated

c) The last change time of the file is updated

d) None of the mentioned

460. If the umask value is 0002. what will be the permissions of new directory

a) 777

b) 775

c) 774

d) 664

461. What is the command to set the execute permissions to all the files and subdirectories within the directory /home/user1/direct

a) chmod –r +x /home/user1/direct

b) chmod –R +x /home/user1/direct

c) chmod –f –r +x /home/user1/direct

d) chmod –F +x /home/user1/direct

462. The permission -rwxr-xr-t represented in octal expression will be

a) 0777

b) 1755

c) 1754

d) 2754

463. With a umask value of 112, what is the default permission assigned to newly created regular file?

a) —x–x-wx

b) -rw-rw-r–

c) -r-xr-x-r–

d) -rw-rw-r–

464. Which command is used to assign read-write permission to the owner?

a) chmod a+r file

b) chmod o+r file

c) chmod u=rw file

d) chmod og-r file

465. Given the command

$ chmod o-w datafile

a) sets write permission to everyone for datafile

b) sets write permission to others for datafile

c) clears write permission to everyone for datafile

d) clears write permission to others for datafile

466. Which of these commands will set the permissions on file textfile to read and write for the owner, read for the group, and nothing for everyone else?

a) chmod 046 textfile

b) chmod 640 textfile

c) chmod 310 textfile

d) chmod rw r nil textfile

467. If you are a root user, how can you grand execute permission only for the owner of the file project1?

a) chmod +x project1

b) chmod u+x project1

c) chmod a+x project1

d) chmod U+X project1

468. A user executes the following command successfully:

$ chmod +x file1.txt

Which of the following is true of the output of this command?

a) The command results in adding execute permission to the user who ran this command

b) The command results in adding execute permission for the owner of the file

c) The command results in an error since the file is not an executable file

d) The command results in adding execute permission for all users (i.e., user,group & others)

469. What does chmod +t do?

a) wrong syntax

b) set effective userid for filename

c) set effective groupid for filename

d) set the sticky bit

470. Which of the following umask settings doesn't allow execute permission to be set by default on directory files

a) 222

b) 111

c) 000

d) 444

471. Which of the following umask settings allow execute permission to be set by default on regular files

a) 222

b) 111

c) 000

d) None of the mentioned

472. The command chmod 4777 a.out

a) will set the suid bit of a.out

b) will set the suid bit of a.out only if the command is issued by root

c) is not a valid command

d) will set the sticky bit of a.out

473. Which command is used to check filesystem usage in a system?

a) mount
b) df
c) du
d) dd

474. Which among the following allows fast file system recovery?

a) Ext2
b) Journaling
c) Caching
d) Sysfs

475. Which filesystem can be used to change certain kernel parameters at runtime using sysctl command?

a) Ext3
b) Sysfs
c) Ext4
d) Procfs

476. Filesystem for CDROM is:

a) Ext2
b) Ext3
c) Isofs
d) Procfs

477. Which file system has journaling capability?

a) Ext2
b) Ext4
c) Isofs
d) Procfs

478. Which file contains the filesystems to be automatically mounted during boot?

a) /etc/mount
b) /etc/fstab
c) /etc/inittab
d) /etc/boot

479. ___ is a directory (which should exist), on which to mount the file system?

a) Root
b) Boot
c) Mount-point
d) Partition

480. Which command is used to mount file system read only.

a) mount –a
b) mount –v
c) mount –f
d) mount –r

481. Which of the following is not a valid run-level

a) S
b) 0
c) 8
d) 1

482. On Linux, initrd is a file

a) Containing root file-system required during bootup
b) Contains only scripts to be executed during bootup
c) Contains root-file system and drivers required to be preloaded during bootup
d) None of the mentioned

483. Which is loaded into memory when system is booted?

a) Kernel
b) Shell
c) Commands
d) Script

484. The process of starting up a computer is known as

a) Boot Loading
b) Boot Record
c) Boot Strapping
d) Booting

485. Bootstrapping is also known as

a) Quick boot
b) Cold boot
c) Hot boot
d) Fast boot

486. The shell used for Single user mode shell is:

a) bash
b) Csh
c) ksh
d) sh

487. Single user mode shell runs as

a) Admin user

b) Root user

c) Normal user

d) Log user

488. Which is the only partition mounted in Single user mode

a) boot

b) usr

c) root

d) tmp

489. Which daemon manages the physical memory by moving process from physical memory to swap space when more physical memory is needed.

a) Sched daemon

b) Swap daemon

c) Init daemon

d) Process daemon

490. At the end of kernel bootstrap, which process is started?

a) /etc/init

b) /etc/sched

c) /etc/swap

d) /etc/kernel

491. The process id of init process is:

a) -1

b) 0

c) 1

d) 2

492. Which file is read by init to get the default runlevel

a) /etc/profile

b) /etc/init

c) /etc/boot

d) /etc/inittab

493. If a program executing in background attempts to read from STDIN

a) It is terminated

b) It's execution is suspended

c) STDIN is made available to it

d) None of the mentioned

494. Which command is used to bring the background process to forground?

a) bg
b) fg
c) background
d) forground

495. How to run a process in the background?

a) &
b) *
c) ?
d) |

496. Which command can be executed by a user who is already logged into the system, in order to change to the root user? (type the command without any parameters)

a) su
b) root
c) chroot
d) user

497. Process information in the current shell can be obtained by using

a) kill
b) bg
c) fg
d) ps

498. Which signal is sent by the command "kill -9 " ?

a) INT
b) TERM
c) KILL
d) STOP

499. Which of the following values for STAT column of ps command is not true:

a) status R means running
b) Status S means sleeping
c) Status E means exited
d) Status Z means zombie

500. When a child process exits before the parent process exits, which of the following is true:

a) the child process becomes defunct

b) the parent process becomes defunct

c) if the parent process does not handle SIGCHLD, the child process becomes a zombie

d) none of the mentioned

501. A user issues the following command sequence:

```
$ a.out &
$ bash
$ a.out &
```

If the user kills the bash process, then which of the following is true?

a) the second a.out process is also terminated

b) the second a.out process becomes a defunct process

c) the first a.out process becomes a zombie process

d) init process becomes parent of second a.out process

502. The signal sent to a process when the Ctrl-C key is pressed is

a) KILL

b) TSTP

c) TERM

d) INT

503. we can change the priority of a running process using

a) nice

b) renice

c) priority cannot be changed for a running process

d) only superuser can change the priority

504. nohup is used to

a) automatically hang up the process after logout

b) continue the process after logout

c) create backgroung process

d) manually hang up the process after logout

505. To feed standard output of one command to standard input of another in a single shell session

a) IO redirection can be used

b) Named pipes can be used

c) The pipe operator provided by the shell can be used

d) It can not be done

506. Which of the following commands allows definition and assignment of environment variables under bash

a) env
b) export
c) environ
d) setenviron

507. While executing a command, the shell

a) Executes it in the same process (as shell)
b) Creates a child shell to execute it
c) Loads a special program to take care of the execution
d) None of the mentioned

508. Which variable contains current shell process id

a) $*
b) $?
c) $$
d) $!

509. Which command is used to debug a shell script program

a) set
b) set -x
c) debug
d) db

510. For every successful login, which script will be executed?

a) /etc/inittab
b) /etc/profile
c) /etc/login
d) /etc/init

511. Hidden files are

a) Those whose 'read' bit is set to 'h'
b) Permitted for (can be accessed) only superusers
c) Files that begin with a '.'
d) Files that cannot be opened by ordinary user for writing

512. Shell is ?

a) Command Interpreter
b) Interface between Kernel and Hardware
c) Interface between user and applications
d) Command Compiler

513. If a file with execute permissions set, but with unknown file format is executed

a) The file is passed to /bin/sh

b) The system returns an error

c) The current shell will try to execute it

d) None of the mentioned

514. Which of the following is true?

a) Shell is a process and can be started by superuser only

b) Shell is a built-in Kernel functionality

c) Shell is a wrapper for all the commands and utilities

d) None of the mentioned

515. Which is true with regards to the shell prompt

a) It can be accidentally erased with backspace

b) The prompt cannot be modified

c) The prompt can be customized (modified)

d) None of the mentioned

516. What is a shell in UNIX?

a) a program through which users can issue commands to UNIX

b) a window management system

c) the login screen

d) the thing that rides on the back of a turtle in UNIX

517. Which of the following represents an absolute path?

a) ../home/file.txt

b) bin/cat

c) cs2204/

d) /usr/bin/cat

518. The user bhojas logged in and performed the following sequence of command. What will be the output of the last command?

$ cd project/module1

$ pwd

a) /home/bhojas/project/module1

b) /home/project/module1

c) /usr/bhojas/project/module1

d) project/module1

519. BASH shell stands for?

a) Bourne-again Shell

b) Basic Access Shell

c) Basic to Advanced Shell

d) Big & Advanced Shell

520. Which of the following files will not be displayed by the command cat re* ?

a) reminder
b) receipt
c) Receipt
d) recipe-cake

521. The redirection 2> abc implies

a) Write file 2 to file abc
b) Write standard output to abc
c) Write standard error to abc
d) None of the mentioned

522. cmd 2>&1 > abc will

a) Write file2 to file1
b) Write standard output and standard error to abc
c) Write standard error to abc
d) Write standard output to abc & standard error to monitor

523. cmd > abc 2>&1 will

a) Write file2 to file1
b) Write standard output and standard error to abc
c) Write standard error to abc
d) Write standard output to abc & standard error to monitor

524. Which of these is the correct method for appending “foo” in /tmp/bar file?

a) echo foo > /tmp/bar
b) echo foo >> /tmp/bar
c) echo foo | /tmp/var
d) /tmp/bar < echo foo

525. Syntax to suppress the display of command error to monitor?

a) command > &2
b) command 2> &1
c) command 2> &2
d) command 2> /dev/null

526. The following commands gives the output like this

```
#cat file1 file2
#cat: file1: No such file or directory
hello
If we execute the command "cat file1 file2  1>2  2>&1" the output would be
```

a) cat: file1: No such file or directory hello
b) No output is displayed
c) Cat: 1>2: No such file or directory
d) hello

527. cat < file1 >> file2 | file3

a) file1 content will be appended to file2 and finally stored in file3
b) file1 content will be appended to file2 and file3 will be ignored
c) file2 and file3 will have same content
d) syntax error

528. Executing cat /etc/password > /dev/sda as superuser will

a) Write data into a regular file called /dev/sda
b) Write data to the physical device sda
c) Create a temporary file /dev/sda and write data to it
d) None of the mentioned

529. From where would the read statement read if the following statements were executed?

```
exec < file1
exec < file2
exec < file3
read line
```

a) It would read all the files
b) It would not read any files
c) It would read all the files in reverse order
d) It would read only file3

530. What is a context switch?

a) Kernel switches from executing one process to another
b) Process switches from kernel mode to user mode
c) Process switches from user mode to kernel mode
d) None of the mentioned

531. Pid of init process

a) 0
b) 1
c) 32767
d) none of the mentioned

532. What is the default maximum number of processes that can exist in Linux?

a) 32768

b) 1024

c) 4096

d) unlimited

533. How do you get parent process identification number?

a) waitpid

b) getpid()

c) getppid()

d) parentid()

534. Parent process id of a deamon process is_____

a) 2

b) 3

c) 4

d) 1

535. The process which terminates before the parent process exits becomes

a) Zombie

b) Orphan

c) Child

d) None of the mentioned

536. Return value of fork() system call can be:

a) -1,<0, 0

b) -1,>0, 0

c) -1,<0

d) none of the mentioned

537. If the fork() system call returns -1, then it means?

a) No new child process is created

b) The child process is an orphan

c) The child process is in Zombie

d) none of the mentioned

538. Fork returns _____ to parent process on success

a) 0

b) child process id

c) parent process id

d) none

539. How many times printf() will be executed in the below mentioned program?

```
main()
 {
      int i;
      for (i = 0; i < 4; i++)
      fork();
      printf("my pid = %d\n", getpid());
}
```

a) 4

b) 8

c) 16

d) 32

540. What is the output of the below code?

```
void exit_handler1();
 void exit_handler2();
 int main()
 {
       int pid;
       atexit(exit_handler1);
       atexit(exit_handler2);
       pid = fork();
       if(pid == 0)
       {
              _exit(0);
        }
        else
       {
              sleep(2);
              exit(0);
       }
       return 0;
}
```

a) Only child executes the exit_handler 1 and 2

b) Only parent executes the exit_handler 1 and 2

c) Both parent and child executes the exit_handler 1 and 2

d) Neither parent nor child executes the exit_handler 1 and 2

541. What is output of the following program?

```
int main()
 {
       fork();
       fork();
       fork();
       if (wait(0) == -1)
       printf("leaf child\n");
 }
```

a) “leaf child” will be printed 1 times

b) “leaf child” will be printed 3 times

c) “leaf child” will be printed 4 times

d) “leaf child” will be printed 8 times

542. Which niceness value among the following indicate most favourable scheduling?

a) 0
b) 19
c) 5
d) -20

543. The maximum time slice that can be given to a process in Linux (where tick is 10ms) is

a) 150ms
b) 10ms
c) 300 ms
d) 600ms

544. Nice can be used by an ordinary process to

a) increase the priority of a process
b) decrease the priority of a process
c) increase or decrease the priority of a process
d) none of the mentioned

545. On x86-32 Linux, at which address the code segment of the program starts?

a) 0x00000000
b) 0x08048000
c) 0x80000000
d) 0xbfff0000

546. On x86-32 Linux, at which address the user stack resides normally?

a) 0x00000000
b) 0x3fff0000
c) 0x7fff0000
d) 0xbfff0000

547. A system has 512MB of physical memory. Which among the following is not a suitable virtual memory size for this system architecture?

a) 512MB
b) 256M
c) 4GB
d) None of the mentioned

548. LRU stands for

a) Last received Unit
b) Least recently Used
c) Least recently usable
d) Lost Recoverd unit

549. Mm_struct maintains?

a) memory files
b) open files
c) pipe
d) active memory regions

550. Which sytem call can be used by a user process to lock a memory so that it cannot be swapped out?

a) memory files()
b) memlock()
c) pipe()
d) active memory regions

551. Is page table per process entity?

a) Yes
b) No

552. Among these files which has an ELF format

a) shared objects
b) core
c) executables
d) all of the mentioned

553. What is the use of strace command?

a) strace can be used to check the system calls called by the program. So, this can be used for debugging and benchmarking purposes
b) strace cannot be used to check the system calls called by the program
c) all of the mentioned
d) none of the mentioned

554. If one of the thread in multithreaded process is blocked on an I/O, which of the following is true?

a) The entire process with block if their is no kernel supported threads
b) Other threads of the process will continue to execute even if there is no kernel supported threads
c) It depends on specific implementatation
d) All of the mentioned

555. Which one can be a real time schedule policy?

a) SCHED_FIFO
b) SCHED_SPF
c) SCHED_OTHER
d) SCHED_FILO

556. In Linux kernel-2.6 Real time priority ranges from

a) 0 to 99

b) 0 to 139

c) -20 to 19

d) 100 to 139

557. Each process has unique

a) fd table

b) file table

c) inode table

d) data block table

558. File descriptor table indexes which kernel structure?

a) struct file

b) strruct fs_struct

c) files_struct

d) struct inode

559. What is the default number of files open per user process?

a) 0

b) 1

c) 2

d) 3

560. The file system information is stored in

a) Boot block

b) Super Block

c) Inode Table

d) Data Block

561. Switch table is used by

a) device special file

b) directory file

c) fifo

d) link file

562. What is the use of fcntl function?

a) locking a file

b) reading the file descriptor flag

c) changing the file status flag

d) all of the mentioned

563. Which function can be used instead of the dup2 to duplicate the file descriptor?

a) read()
b) open()
c) stat()
d) fcntl()

564. printf() uses which system call

a) open
b) read
c) write
d) close

565. read() system call on success returns

a) 0
b) -1
c) number of character
d) none

566. Which system call is used to create a hard link?

a) hardlink
b) link
c) symlink
d) ln

567. namei() is

a) ANSI C library function
b) C library function
c) System call
d) kernel routine

568. dup2(1,0)

a) closes the stdout and copies the stdin descriptor to stdout
b) closes the stdin and copies the stdout descriptor to stdin
c) will produce compilation error
d) None of the mentioned

569. If a signal is received by a process, when will it be processed?

a) It is processed immediately
b) It is processed when process is switching to kernel mode
c) It is processsed in the next timeslice given to the process
d) None of the mentioned

570. Which signal is generated when we press control-C?

a) SIGINT
b) SIGTERM
c) SIGKILL
d) SIGSEGV

571. Which signal is generated when we press ctrl-Z?

a) SIGKILL
b) SIGSTOP
c) SIGABRT
d) SIGINT

572. Which signal is sent when the Child process terminates?

a) SIGINIT
b) SIGKILL
c) SIGSTOP
d) SIGCHLD

573. Which of the following signal cannot be handled or ignored?

a) SIGINT
b) SIGCHLD
c) SIGKILL
d) SIGALRM

574. Another signal that cannot be caught is:

a) SIGPIPE
b) SIGHUP
c) SIGSTOP
d) SIGUSR1

575. When real interval timer expires which signal is generated?

a) SIGINT
b) SIGCHLD
c) SIGKILL
d) SIGALRM

576. Signals are handled using which system call?

a) kill
b) signal
c) both
d) none

577. Default action of SIGSEGV is

a) Terminate

b) Core dump + Terminate

c) Stop

d) Cont

578. The kill system call is used to

a) Send shutdown messages to all by superuser

b) Send a signal to a process

c) Kill processes

d) Stop the processes

579. What is the output of the below code?

```
void sig_handler ( int signum) {
    printf("Handled the signal\n");
}

int main() {
    int pid;
    signal (SIGKILL, sig_handler);
    pid = fork();
    if (pid==0) {
        kill(getppid(), SIGKILL);
        exit(0);
    } else {
        sleep(20);
    }
    return 0;
}
```

a) Error child cannot send a SIGKILL signal to parent

b) Parent goes to the signal handler, prints handled the signal and goes back to sleep

c) Parent goes to the signal handler, prints handled the signal and exits

d) Parent exits without going to the signal handler

580. Which is true regarding pipes?

a) half duplex

b) full duplex

c) message boundaries are preserved

d) unordered data

581. The persistancy of a FIFO is

a) process

b) kernel

c) file system

d) none of the mentioned

582. Advantage of FIFO over pipe is

a) related processes can communicate

b) unrelated processes can communicate

c) all of the mentioned

d) none of the mentioned

583. What mkfifo() creats?

a) pipe

b) unnamed pipe

c) named pipe

d) msg queue

584. System V IPC common attributes are

a) key

b) id

c) owner

d) all of the mentioned

585. Which one of the following is not system V IPC ?

a) Shared Memory

b) Semaphores

c) FIFO

d) Message Queues

586. Which system call is used to create Sys V message Queue.

a) msgget

b) shemget

c) semget

d) msgctl

587. Which is not the correct option for removing a message queue

a) ipcrm -Q

b) ipcrm -q

c) ipcrm -m

d) none of the mentioned

588. Message queues are created in

a) userspace

b) kernelspace

c) userspace & kernelspace

d) none of the mentioned

589. Command used to check shared memory is

a) ipcs

b) ipcs -m

c) ipcs -s

d) ipcs -q

590. The structure which keeps the information about shared memory in the kernel is

a) struct ipc_perm

b) struct semid_ds

c) struct shmid_ds

d) struct msgid_ds

591. Semaphore P( ) operation usually does the following:

a) descrements the semaphore count and the process sleeps if needed

b) increments the semaphore count

c) wakes up a sleeping process

d) none of the mentioned

592. Which call to use to set the resource count of semaphore?

a) semget( )

b) semctl( )

c) sem_setcount( )

d) sem_set_count( )

593. Race condition can be avoided by using

a) semaphore

b) mutex

c) socket

d) both semaphore & mutex

594. A server which is handling one client at a time is called as

a) single server

b) multiserver

c) concurrent server

d) iterative server

595. A server which is handling many clients at a time is called as

a) single server

b) multiserver

c) concurrent server

d) iterative server

596. A communication end-point is identified by

a) ip address
b) port number
c) both IP address and port number
d) none of the mentioned

597. UNIX/Linux kernel is?

a) Monolithic
b) Micro
c) Exo
d) Nano

598. Monolithic kernel

a) is highly extensiblity
b) has less run time overhead
c) smaller than micro level
d) suitable for real time system

599. Runlevel system command is used for?

a) getting the present and previous runlevel of the system
b) setting the runlevel attribute of the system in the inittab file
c) can be used to restart or reboot the system
d) all of the mentioned

600. Pick the run level to run Linux in multi user mode with networking?

a) 0
b) 3
c) 5
d) 6

601. Section 2 of manpage describes

a) Commands
b) System calls
c) Function calls
d) Drivers

602. System call can be implemented using which assembly instruction(s) on x86 processors?

a) int 0×80
b) sysenter
c) both int 0×80 & sysenter
d) None

603. x86 architecture uses big endian or little endian addressing mechanism?

a) little-endian

b) endian

c) big-endian

d) none of the mentioned

604. _____ timer is decremented only when the process is executing

a) ITIMER_REAL

b) ITIMER_VIRTUAL

c) ITIMER_PROF

d) None of the mentioned

605. Daemon process is a?

a) group leader

b) session leader

c) orphan process

d) all of the mentioned

606. The terminal used by a Daemon process is:

a) any terminal

b) no terminal

c) root terminal

d) system console

607. shared memory can be used for?

a) read only operations

b) append

c) read or read write operations

d) write only

608. Sysconf(_SC_PAGE_SIZE) returns?

a) size of the page

b) max size of the page

c) min size of the page

d) paging allowed or not

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Q1. The Command do you use to create Linux file system is --

- **A.** fsck
- **B. mkfs**
- **C.** mount
- **D.** None of the mentioned

Q2. Core of Linux operating system is_____ .

- **A.** Shell
- **B. Kernel**
- **C.** Terminal
- **D.** Command

Q3. Which of the following directory contains configuration files in Linux?

- **A.** /dev/
- **B. /etc/**
- **C.** /bin/
- **D.** /root/

Q4. The maximum filename size in Linux in bytes is 255.

- **A. True**

- **B.** False

Q5. Which command is used to remove files?

- **A. rm**
- **B.** dm
- **C.** erase
- **D.** delete

Q6. _____ command is used to remove the directory.

- **A.** rdir
- **B.** rd
- **C. rmdir**
- **D.** None of the above

Q7. How many primary partitions can exist on one drive?

- **A.** 16
- **B.** 1
- **C.** 2
- **D. 4**

Q8. FSF stand for -

- **A.** Free Software File
- **B. Free Software Foundation**
- **C.** First Serve First
- **D.** None of the above

Q9. _____is not a communication command.

- **A.** mail
- **B.** mesg
- **C. grep**
- **D.** write

Q10. Which of the following combination of keys is used to exit from terminal?

- **A.** Ctrl + z
- **B.** Ctrl + t
- **C. Ctrl + d**
- **D.** Ctrl + e

Q11. The OS which is not based on Linux is -

- **A. BSD**
- **B.** Ubuntu
- **C.** CentOs
- **D.** Redhat

Q12. _____command is used to record session in Linux.

- **A.** session
- **B.** script
- **C. both 1 and 2**
- **D.** None of the above

Q13. mv command can be used for -

- **A.** Renaming a file
- **B.** Move the file to different directory.
- **C. Both 1 and 2**
- **D.** None of these

Q14. The range of nice number in linux system is -

- **A.** -20 to 0
- **B. -20 to 19**
- **C.** 0 to 19
- **D.** 10 to 10

Q15. User passwords are stored in _____

- **A.** /root/password
- **B.** /etc/password
- **C. /etc/passwd**
- **D.** /root/passwd

Q16. Which is the default file system type of Linux.

- **A.** etx
- **B.** ext2
- **C. etx3**
- **D.** mimix

Q17. Hidden file can be viewed using _____.

- **A. ls -a**
- **B.** ls -l
- **C.** ls -h
- **D.** Is - k

Q18. Linux is an operating system based on UNIX and was first introduced by Linus Torvalds.

- **A. True**
- **B.** False

Q19. Which command is used to extract intermediate result in a pipeline -

- **A.** extract
- **B. tee**
- **C.** exec
- **D.** chgrp

Q20. Which of the following sign represents the user home directory?

- **A.** .
- **B.** /
- **C.** ..
- **D. ~**

Q21. The dmesg command shows .....

- **A. Kernel log messages**
- **B.** The daemon log messages
- **C.** The user login logoff attempts
- **D.** None of above

Q22. Which command is used to set terminal IO characteristic?

- **A.** tty
- **B.** ctty
- **C. stty**
- **D.** None of above

Q23. Which command is used to display the operating system name?

- **A.** os
- **B.** unix
- **C. uname**
- **D.** kernel

Q24. Which command is used to display the unix version?

- **A.** kernel
- **B.** uname -t
- **C. uname -r**
- **D.** uname -n

Q25. Which command is used to view compressed text file contents?

- **A.** cat
- **B. zcat**
- **C.** type

- **D.** None of above