



SYED AMMAL ENGINEERING COLLEGE

(An ISO 9001: 2008 Certified Institution)

Dr. E.M. Abdullah Campus, Ramanathapuram – 623 502

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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OPERATING SYSTEMS OBJECTIVE TYPE QUESTIONS

1. What is operating system?

1. collection of programs that manages hardware resources
2. system service provider to the application programs
3. link to interface the hardware and application programs
4. All of the above

Answer : All of the above

2. The OS X has _____

1. monolithic kernel
2. hybrid kernel
3. microkernel
4. monolithic kernel with modules

Answer : hybrid kernel

3. Which one of the following is not a real time operating system?

1. Palm OS
2. VxWorks
3. Windows CE
4. RTLinux

Answer : Palm OS

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

1. System calls
2. API
3. Library
4. Assembly instructions

Answer : System calls

5. Which one of the following is not true?

1. kernel is the program that constitutes the central core of the operating system
2. kernel is the first part of operating system to load into memory during booting
3. kernel is made of various modules which can not be loaded in running operating system
4. kernel remains in the memory during the entire computer session

Answer : kernel is made of various modules which can not be loaded in running operating system

6. Which one of the following error will be handle by the operating system?

1. lack of paper in printer
2. connection failure in the network
3. power failure
4. all of the above

Answer : all of the above



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7. Which facility dynamically adds probes to a running system, both in user processes and in the kernel?

1. DTrace
2. DLocate
3. DMap
4. DAdd

Answer : DTrace

8. The main function of the command interpreter is

1. to get and execute the next user-specified command
2. to provide the interface between the API and application program
3. to handle the files in operating system
4. none of the above

Answer : to get and execute the next user-specified command

9. If a process fails, most operating system write the error information to a _____

1. log file
2. another running process
3. new file
4. None of these

Answer : log file

10. By operating system, the resource management can be done via

1. time division multiplexing
2. space division multiplexing
3. both time and space division multiplexing
4. none of these

Answer : both time and space division multiplexing

11. Pre-emptive scheduling is the strategy of temporarily suspending a running process

1. before the CPU time slice expires
2. to allow starving processes to run
3. when it requests I/O)
4. none of the above

Answer : before the CPU time slice expires

12. Mutual exclusion problem occurs

1. between two disjoint processes that do not interact
2. among processes that share resources
3. among processes that do not use the same resource
4. none of the above

Answer : among processes that share resources



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13. Sector interleaving in disks is done by

1. the disk manufacturer
2. the disk controller cord
3. the operating system
4. none of the above

Answer : the operating system

14. Memory protection is of no use in a

1. single user system
2. non-multiprogramming system
3. non-multitasking system
4. none of the above

Answer : none of the above

15. Some computer systems support dual mode operation—the user mode and the supervisor or monitor mode. These refer to the modes

1. by which user programs handle their data
2. by which the operating system executes user programs
3. in which the processor and the associated hardware operate.
4. of memory access

Answer : in which the processor and the associated hardware operate.

16. Disk scheduling involves deciding

1. which disk should be accessed next
2. the order in which disk access requests must be serviced
3. the physical location where files should be accessed in the disk
4. none of the above

Answer : the order in which disk access requests must be serviced

17. A computer system has n tape drives, with n processes competing for them. Each process may need 3 drives. The maximum value of n for which the system is guaranteed to be deadlock free is

1. 2
2. 3
3. 4
4. 1

Answer : 2

18. Dirty bit is used to show the

1. page with corrupted data
2. wrong page in the memory
3. page that is modified after being loaded into cache memory
4. page that is less frequently accessed

Answer : page that is modified after being loaded into cache memory



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19. Fence register is used for

1. CPU protection
2. memory protection
3. file protection
4. all of the above

Answer : memory protection

20. Which of the following is a service not supported by the operating system?

1. Protection
2. Accounting
3. Compilation
4. I/O operation

Answer : Compilation

21. A collection of instructions that performs a single logical function is called :

1. transaction
2. operation
3. function
4. all of the mentioned

Answer : transaction

22. A terminated transaction that has completed its execution successfully is _____ otherwise it is _____

1. committed, destroyed
2. aborted, destroyed
3. committed, aborted
4. none of the mentioned

Answer : committed, aborted

23. The state of the data accessed by an aborted transaction must be restored to what it was just before the transaction started executing. This restoration is known as _____ of transaction.

1. safety
2. protection
3. roll – back
4. revert – back

Answer : roll – back

24. Write ahead logging is a way :

1. to ensure atomicity
2. to keep data consistent
3. that records data on stable storage
4. all of the mentioned

Answer : all of the mentioned



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25. In the write ahead logging a _____ is maintained.

1. a memory
2. a system
3. a disk
4. a log record

Answer : a log record

26. An actual update is not allowed to a data item :

1. before the corresponding log record is written out to stable storage
2. after the corresponding log record is written out to stable storage
3. until the whole log record has been checked for inconsistencies
4. all of the mentioned

Answer : before the corresponding log record is written out to stable storage

27. The undo and redo operations must be _____ to guarantee correct behaviour, even if a failure occurs during recovery process.

1. idempotent
2. easy
3. protected
4. all of the mentioned

Answer : idempotent

28. The system periodically performs checkpoints that consists of the following operation(s) :

1. Putting all the log records currently in main memory onto stable storage
2. putting all modified data residing in main memory onto stable storage
3. putting a log record onto stable storage
4. all of the mentioned

Answer : all of the mentioned

29. Consider a transaction T1 that committed prior to checkpoint. The <T1 commits> record appears in the log before the <checkpoint> record. Any modifications made by T1 must have been written to the stable storage either with the checkpoint or prior to it. Thus at recovery time:

1. There is a need to perform an undo operation on T1
2. There is a need to perform a redo operation on T1
3. There is no need to perform an undo and redo operation on T1
4. All of the mentioned

Answer : There is no need to perform an undo and redo operation on T1

30. Serializable schedules are ones where :

1. concurrent execution of transactions is equivalent to the transactions executed serially
2. the transactions can be carried out one after the other
3. a valid result occurs after execution transactions
4. none of the mentioned

Answer : concurrent execution of transactions is equivalent to the transactions executed serially



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31. A locking protocol is one that :

1. governs how locks are acquired
2. governs how locks are released
3. governs how locks are acquired and released
4. none of the mentioned

Answer : governs how locks are acquired and released

32. The two phase locking protocol consists of :

1. growing & shrinking phase
2. shrinking & creation phase
3. creation & growing phase
4. destruction & creation phase

Answer : growing & shrinking phase

33. The growing phase is a phase in which :

1. A transaction may obtain locks, but does not release any
2. A transaction may obtain locks, and releases a few or all of them
3. A transaction may release locks, but does not obtain any new locks
4. A transaction may release locks, and does obtain new locks

Answer : A transaction may obtain locks, but does not release any

34. The shrinking phase is a phase in which :

1. A transaction may obtain locks, but does not release any
2. A transaction may obtain locks, and releases a few or all of them
3. A transaction may obtain locks, and releases a few or all of them
4. A transaction may release locks, and does obtain new locks

Answer : A transaction may obtain locks, and releases a few or all of them

35. Which of the following concurrency control protocols ensure both conflict serializability and freedom from deadlock?

- I) 2-phase locking
 - II) Time-stamp ordering
1. I only
 2. II only
 3. Both I and II
 4. Neither I nor II

Answer : II only

36 The bounded buffer problem is also known as :

1. Readers – Writers problem
2. Dining – Philosophers problem
3. Producer – Consumer problem

Answer : Producer – Consumer problem



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37. In the bounded buffer problem, there are the empty and full semaphores that :

1. count the number of empty and full buffers
2. count the number of empty and full memory spaces
3. count the number of empty and full queues
4. none of these

Answer : count the number of empty and full buffers

38. In the bounded buffer problem :

1. there is only one buffer
2. there are n buffers (n being greater than one but finite)
3. there are infinite buffers
4. the buffer size is bounded

Answer : there are n buffers (n being greater than one but finite)

39. To ensure difficulties do not arise in the readers – writers problem, _____ are given exclusive access to the shared object.

1. readers
2. writers
3. readers and writers
4. none of these

Answer : writers

40. The dining – philosophers problem will occur in case of :

1. 5 philosophers and 5 chopsticks
2. 4 philosophers and 5 chopsticks
3. 3 philosophers and 5 chopsticks
4. 6 philosophers and 5 chopsticks

Answer : 5 philosophers and 5 chopsticks

41. A deadlock free solution to the dining philosophers problem :

1. necessarily eliminates the possibility of starvation
2. does not necessarily eliminate the possibility of starvation
3. eliminates any possibility of any kind of problem further
4. none of these

Answer : does not necessarily eliminate the possibility of starvation

42. Round robin scheduling falls under the category of :

1. Non preemptive scheduling
2. Preemptive scheduling
3. All of the mentioned
4. None of these

Answer : Preemptive scheduling



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43 Which of the following statements are true ?

- I. Shortest remaining time first scheduling may cause starvation
 - II. Preemptive scheduling may cause starvation
 - III. Round robin is better than FCFS in terms of response time
1. I only
 2. I and III only
 3. II and III only
 4. I, II and III

Answer : I) Shortest remaining time first scheduling is a preemptive version of shortest job scheduling. It may cause starvation as shorter processes may keep coming and a long CPU burst process never gets CPU.

II) Preemption may cause starvation. If priority based scheduling with preemption is used, then a low priority process may never get CPU.

III) Round Robin Scheduling improves response time as all processes get CPU after a specified time.

44. Under multiprogramming, turnaround time for short jobs is usually _____ and that for long jobs is slightly _____

1. Lengthened; Shortened
2. Shortened; Lengthened
3. Shortened; Shortened
4. Shortened; Unchanged

Answer : Shortened; Lengthened

45. Which of the following algorithms tends to minimize the process flow time?

1. First come First served
2. Shortest Job First
3. Earliest Deadline First
4. Longest Job First

Answer : Shortest Job First

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

1. earliest due date
2. slack time remaining
3. first come, first served
4. critical ratio

Answer : first come, first served

47. 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 timesharing 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 ?

1. $tQ = 50ms$
2. $tQ = 15ms$
3. $tQ = 40ms$
4. $tQ = 45ms$

Answer : $tQ = 15ms$



48. Scheduling is :

1. allowing a job to use the processor
2. making proper use of processor
3. all of the mentioned
4. none of these

Answer : allowing a job to use the processor

49. The strategy of making processes that are logically runnable to be temporarily suspended is called:

1. Non preemptive scheduling
2. Preemptive scheduling
3. Shortest job first
4. First come First served

Answer : Preemptive scheduling

50. The FIFO algorithm :

1. first executes the job that came in last in the queue
2. first executes the job that came in first in the queue
3. first executes the job that needs minimal processor
4. first executes the job that has maximum processor needs

Answer : first executes the job that came in first in the queue

51. With round robin scheduling algorithm in a time shared system,

1. using very large time slices converts it into First come First served scheduling algorithm
2. using very small time slices convert it into First come First served scheduling algorithm
3. using extremely small time slices increases performance
4. using very small time slices converts it into Shortest Job First algorithm

Answer : using very large time slices converts it into First come First served scheduling algorithm

52. The portion of the process scheduler in an operating system that dispatches processes is concerned with :

1. assigning ready processes to CPU
2. assigning ready processes to waiting queue
3. assigning running processes to blocked queue
4. all of these

Answer : assigning ready processes to CPU

53. Complex scheduling algorithms :

1. are very appropriate for very large computers
2. use minimal resources
3. use many resources
4. all of these

Answer : are very appropriate for very large computers



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54. The most optimal scheduling algorithm is :

1. FCFS – First come First served
2. SJF – Shortest Job First
3. RR – Round Robin
4. None of these

Answer : SJF – Shortest Job First

55. The real difficulty with SJF in short term scheduling is :

1. it is too good an algorithm
2. knowing the length of the next CPU request
3. it is too complex to understand
4. none of these

Answer : knowing the length of the next CPU request

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

Process	Burst time
P1	6
P2	8
P3	7
P4	3

Assuming the above processes being scheduled with the SJF scheduling algorithm.

1. The waiting time for process P1 is 3ms
2. The waiting time for process P1 is 0ms
3. The waiting time for process P1 is 16ms
4. The waiting time for process P1 is 9ms

Answer : The waiting time for process P1 is 3ms

57. The FCFS algorithm is particularly troublesome for _____

1. time sharing systems
2. multiprogramming systems
3. multiprocessor systems
4. operating systems

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



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58. Preemptive Shortest Job First scheduling is sometimes called:

1. Fast SJF scheduling
2. EDF scheduling – Earliest Deadline First
3. HRRN scheduling – Highest Response Ratio Next
4. SRTN scheduling – Shortest Remaining Time Next

Answer : SRTN scheduling – Shortest Remaining Time Next

59. An SJF algorithm is simply a priority algorithm where the priority is :

1. the predicted next CPU burst
2. the inverse of the predicted next CPU burst
3. the current CPU burst
4. anything the user wants

Answer : the predicted next CPU burst

60. One of the disadvantages of the priority scheduling algorithm is that :

1. it schedules in a very complex manner
2. its scheduling takes up a lot of time
3. it can lead to some low priority process waiting indefinitely for the CPU
4. none of these

Answer : it can lead to some low priority process waiting indefinitely for the CPU

61. ‘Aging’ is :

1. keeping track of cache contents
2. keeping track of what pages are currently residing in memory
3. keeping track of how many times a given page is referenced
4. increasing the priority of jobs to ensure termination in a finite time

Answer : increasing the priority of jobs to ensure termination in a finite time

62. A solution to the problem of indefinite blockage of low – priority processes is :

1. Starvation
2. Wait queue
3. Ready queue
4. Aging

Answer : Aging

63. Which of the following statements are true ? (GATE 2010)

- i) Shortest remaining time first scheduling may cause starvation
 - ii) Preemptive scheduling may cause starvation
 - iii) Round robin is better than FCFS in terms of response time
1. i only
 2. i and iii only
 3. ii and iii only
 4. i, ii and iii

Answer : i, ii and iii



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

1. FCFS
2. SJF
3. Round – robin
4. Priority

Answer : SJF

65. CPU scheduling is the basis of _____

1. multiprocessor systems
2. multiprogramming operating systems
3. larger memory sized systems
4. none of these

Answer : multiprogramming operating systems

66. Response time is :

1. the total time taken from the submission time till the completion time
2. the total time taken from the submission time till the first response is produced
3. the total time taken from submission time till the response is output
4. none of these

Answer : the total time taken from the submission time till the first response is produced

67. Scheduling is done so as to :

1. increase the waiting time
2. keep the waiting time the same
3. decrease the waiting time
4. none of these

Answer : decrease the waiting time

68. Waiting time is :

1. the total time in the blocked and waiting queues
2. the total time spent in the ready queue
3. the total time spent in the running queue
4. the total time from the completion till the submission of a process

Answer : the total time spent in the ready queue

69. With multiprogramming, _____ is used productively.

1. time
2. space
3. money
4. all of these

Answer : time

70. The two steps of a process execution are :

1. OS & Memory Burst
2. CPU & I/O Burst
3. I/O & OS Burst
4. Memory & I/O Burst

Answer : CPU & I/O Burst



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71. An I/O bound program will typically have :

1. a few very short CPU bursts
2. many very short I/O bursts
3. many very short CPU bursts
4. a few very short I/O bursts

Answer : many very short CPU bursts

72. A process is selected from the _____ queue by the _____ scheduler, to be executed.

1. ready, long term
2. ready, short term
3. blocked, short term
4. wait, long term

Answer : ready, short term

73. In the following cases non – preemptive scheduling occurs :

1. When a process switches from the running state to the ready state
2. When a process goes from the running state to the waiting state
3. When a process switches from the waiting state to the ready state
4. All of these

Answer : When a process goes from the running state to the waiting state

74. Scheduling is done so as to :

1. increase the turnaround time
2. decrease the turnaround time
3. keep the turnaround time same
4. there is no relation between scheduling and turnaround time

Answer : decrease the turnaround time

75. Turnaround time is :

1. the total waiting time for a process to finish execution
2. the total time spent in the ready queue
3. the total time spent in the running queue
4. the total time from the completion till the submission of a process

Answer : the total time from the completion till the submission of a process

76. The switching of the CPU from one process or thread to another is called :

1. process switch
2. task switch
3. context switch
4. all of these

Answer : all of these

77. Dispatch latency is :

1. the speed of dispatching a process from running to the ready state For more questions visit our website please click here
2. the time of dispatching a process from running to ready state and keeping the CPU idle
3. the time to stop one process and start running another one
4. none of these

Answer : the time to stop one process and start running another one



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78. Scheduling is done so as to :

1. increase CPU utilization
2. decrease CPU utilization
3. keep the CPU more idle
4. None of these

Answer : increase CPU utilization

79. Scheduling is done so as to :

1. increase the throughput
2. decrease the throughput
3. increase the duration of a specific amount of work
4. None of these

Answer : increase the throughput

80. Concurrent access to shared data may result in :

1. data consistency
2. data insecurity
3. data inconsistency
4. none of these

Answer : data inconsistency

81. 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 :

1. data consistency
2. race condition
3. aging
4. starvation

Answer : race condition

82. The segment of code in which the process may change common variables, update tables, write into files is known as :

1. program
2. critical section
3. non – critical section
4. synchronizing

Answer : critical section

83. The following three conditions must be satisfied to solve the critical section problem :

1. Mutual Exclusion
2. Progress
3. Bounded Waiting
4. All of these

Answer : All of these

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84. Mutual exclusion implies that :

1. if a process is executing in its critical section, then no other process must be executing in their critical sections
2. if a process is executing in its critical section, then other processes must be executing in their critical sections
3. if a process is executing in its critical section, then all the resources of the system must be blocked until it finishes execution
4. none of these

Answer : if a process is executing in its critical section, then no other process must be executing in their critical sections

85. Bounded waiting implies that there exists a bound on the number of times a process is allowed to enter its critical section :

1. after a process has made a request to enter its critical section and before the request is granted
2. when another process is in its critical section
3. before a process has made a request to enter its critical section
4. none of these

Answer : after a process has made a request to enter its critical section and before the request is granted

86. A minimum of _____ variable(s) is/are required to be shared between processes to solve the critical section problem.

1. one
2. two
3. three
4. four

Answer : two

87. In the bakery algorithm to solve the critical section problem :

1. each process is put into a queue and picked up in an ordered manner
2. each process receives a number (may or may not be unique) and the one with the lowest number is served next
3. each process gets a unique number and the one with the highest number is served next
4. each process gets a unique number and the one with the lowest number is served next

Answer : each process receives a number (may or may not be unique) and the one with the lowest number is served next

88. What is the reusable resource?

1. that can be used by one process at a time and is not depleted by that use
2. that can be used by more than one process at a time
3. that can be shared between various threads
4. none of the mentioned

Answer : that can be used by one process at a time and is not depleted by that use



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89. Which of the following condition is required for deadlock to be possible?

1. mutual exclusion
2. a process may hold allocated resources while awaiting assignment of other resources
3. no resource can be forcibly removed from a process holding it
4. all of the mentioned

Answer : all of the mentioned

90. A system is in the safe state if

1. the system can allocate resources to each process in some order and still avoid a deadlock
2. there exist a safe sequence
3. all of the mentioned
4. none of the mentioned

Answer : the system can allocate resources to each process in some order and still avoid a deadlock

91. The circular wait condition can be prevented by

1. defining a linear ordering of resource types
2. using thread
3. using pipes
4. all of the mentioned

Answer : defining a linear ordering of resource types

92. Which one of the following is the deadlock avoidance algorithm?

1. banker's algorithm
2. round-robin algorithm
3. elevator algorithm
4. karn's algorithm

Answer : banker's algorithm

93. What is the drawback of banker's algorithm?

1. in advance processes must know that how much resource they will need
2. the number of processes changes as time progresses
3. resource once available can disappear
4. all of the mentioned

Answer : all of the mentioned

94. For effective operating system, when to check for deadlock?

1. every time a resource request is made
2. at fixed time intervals
3. every time a resource request is made at fixed time intervals
4. none of the mentioned

Answer : every time a resource request is made at fixed time intervals

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

1. deadlock
2. starvation
3. inversion
4. aging

Answer : starvation



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96. Which one of the following is a visual (mathematical) way to determine the deadlock occurrence?

1. resource allocation graph
2. starvation graph
3. inversion graph
4. none of the mentioned

Answer : resource allocation graph

97. To avoid deadlock

1. there must be a fixed number of resources to allocate
2. resource allocation must be done only once
3. all deadlocked processes must be aborted
4. inversion technique can be used

Answer : there must be a fixed number of resources to allocate

98. Each request requires that the system consider the _____ to decide whether the current request can be satisfied or must wait to avoid a future possible deadlock.

1. resources currently available
2. processes that have previously been in the system
3. resources currently allocated to each process
4. future requests and releases of each process

Answer : resources currently available

98. Given a priori information about the _____ number of resources of each type that maybe requested for each process, it is possible to construct an algorithm that ensures that the system will never enter a deadlock state.

1. minimum
2. average
3. maximum
4. approximate

Answer : maximum

100. A deadlock avoidance algorithm dynamically examines the _____ to ensure that a circular wait condition can never exist.

1. resource allocation state
2. system storage state
3. operating system
4. resources

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

101. A state is safe, if :

1. the system does not crash due to deadlock occurrence
2. the system can allocate resources to each process in some order and still avoid a deadlock
3. the state keeps the system protected and safe
4. all of the mentioned

Answer : the system can allocate resources to each process in some order and still avoid a deadlock



102. A system is in a safe state only if there exists a :

1. safe allocation
2. safe resource
3. safe sequence
4. all of the mentioned

Answer : safe sequence

103. All unsafe states are :

1. deadlocks
2. not deadlocks
3. fatal
4. none of the mentioned

Answer : not deadlocks

104. If no cycle exists in the resource allocation graph :

1. then the system will not be in a safe state
2. then the system will be in a safe state
3. all of the mentioned
4. none of the mentioned

Answer : then the system will be in a safe state

105. The resource allocation graph is not applicable to a resource allocation system :

1. with multiple instances of each resource type
2. with a single instance of each resource type
3. single & multiple instance of each resource type
4. none of the mentioned

Answer : with multiple instances of each resource type

106. The Banker's algorithm is _____ than the resource allocation graph algorithm.

1. less efficient
2. more efficient
3. equal
4. none of the mentioned

Answer : less efficient

107. The data structures available in the Banker's algorithm are :

1. Available
2. Need
3. Allocation
4. All of the mentioned

Answer : All of the mentioned

108. The content of the matrix Need is :

1. Allocation – Available
2. Max – Available
3. Max – Allocation
4. Allocation – Max

Answer : Max – Allocation



109. The wait-for graph is a deadlock detection algorithm that is applicable when :

1. all resources have a single instance
2. all resources have multiple instances
3. all resources have a single 7 multiple instance
4. all of the mentioned

Answer : all resources have a single instance

110. An edge from process P_i to P_j in a wait for graph indicates that :

1. P_i is waiting for P_j to release a resource that P_i needs
2. P_j is waiting for P_i to release a resource that P_j needs
3. P_i is waiting for P_j to leave the system
4. P_j is waiting for P_i to leave the system

Answer : P_i is waiting for P_j to release a resource that P_i needs

111. If the wait for graph contains a cycle :

1. then a deadlock does not exist
2. then a deadlock exists
3. then the system is in a safe state
4. either deadlock exists or system is in a safe state

Answer : then a deadlock exists

112. If deadlocks occur frequently, the detection algorithm must be invoked _____

1. rarely
2. frequently
3. rarely & frequently
4. none of the mentioned

Answer : frequently

113. The disadvantage of invoking the detection algorithm for every request is :

1. overhead of the detection algorithm due to consumption of memory
2. excessive time consumed in the request to be allocated memory
3. considerable overhead in computation time
4. all of the mentioned

Answer : considerable overhead in computation time

114. A deadlock eventually cripples system throughput and will cause the CPU utilization to

1. increase
2. drop
3. stay still
4. none of the mentioned

Answer : drop

115. Every time a request for allocation cannot be granted immediately, the detection algorithm is invoked. This will help identify :

1. the set of processes that have been deadlocked
2. the set of processes in the deadlock queue
3. the specific process that caused the deadlock
4. all of the mentioned

Answer : the set of processes that have been deadlocked



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116. A computer system has 6 tape drives, with 'n' processes competing for them. Each process may need 3 tape drives. The maximum value of 'n' for which the system is guaranteed to be deadlock free is :

1. 1
2. 2
3. 3
4. 4

Answer : 2

117. A system has 3 processes sharing 4 resources. If each process needs a maximum of 2 units then, deadlock :

1. can never occur
2. may occur
3. has to occur
4. none of the mentioned

Answer : can never occur

118. 'm' processes share 'n' resources of the same type. The maximum need of each process doesn't exceed 'n' and the sum of all their maximum needs is always less than m+n. In this setup, deadlock :

1. can never occur
2. may occur
3. has to occur
4. none of the mentioned

Answer : can never occur

119. The number of resources requested by a process :

1. must always be less than the total number of resources available in the system
2. must always be equal to the total number of resources available in the system
3. must not exceed the total number of resources available in the system
4. must exceed the total number of resources available in the system

Answer : must not exceed the total number of resources available in the system

120. The request and release of resources are _____

1. command line statements
2. interrupts
3. system calls
4. special programs

Answer : system calls

121. Multithreaded programs are :

1. lesser prone to deadlocks
2. more prone to deadlocks
3. not at all prone to deadlocks
4. none of the mentioned

Answer : more prone to deadlocks



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

1. Mutual exclusion
2. No preemption
3. Hold and wait
4. All of the mentioned

Answer : All of the mentioned

123. For Mutual exclusion to prevail in the system :

1. at least one resource must be held in a non sharable mode
2. the processor must be a uniprocessor rather than a multiprocessor
3. there must be at least one resource in a sharable mode
4. all of the mentioned

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

124. For a Hold and wait condition to prevail :

1. A process must not be holding a resource, but waiting for one to be freed, and then request to acquire it
2. A process must be holding at least one resource and waiting to acquire additional resources that are being held by other processes
3. A process must hold at least one resource and not be waiting to acquire additional resources
4. None of the mentioned

Answer : A process must be holding at least one resource and waiting to acquire additional resources that are being held by other processes

125. Deadlock prevention is a set of methods :

1. to ensure that at least one of the necessary conditions cannot hold
2. to ensure that all of the necessary conditions do not hold
3. to decide if the requested resources for a process have to be given or not
4. to recover from a deadlock

Answer : to ensure that at least one of the necessary conditions cannot hold

126. For non sharable resources like a printer, mutual exclusion :

1. must exist
2. must not exist
3. may exist
4. none of the mentioned

Answer : must exist

127. For sharable resources, mutual exclusion :

1. is required
2. is not required
3. maybe or maynot be required
4. none of the mentioned

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



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128. To ensure that the hold and wait condition never occurs in the system, it must be ensured that :

1. whenever a resource is requested by a process, it is not holding any other resources
2. each process must request and be allocated all its resources before it begins its execution
3. a process can request resources only when it has none
4. all of the mentioned

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

129. The disadvantage of a process being allocated all its resources before beginning its execution is :

1. Low CPU utilization
2. Low resource utilization
3. Very high resource utilization
4. None of the mentioned

Answer : Low resource utilization

130. To ensure no preemption, if a process is holding some resources and requests another resource that cannot be immediately allocated to it :

1. then the process waits for the resources be allocated to it
2. the process keeps sending requests until the resource is allocated to it
3. the process resumes execution without the resource being allocated to it
4. then all resources currently being held are preempted

Answer : then all resources currently being held are preempted

131. One way to ensure that the circular wait condition never holds is to :

1. impose a total ordering of all resource types and to determine whether one precedes another in the ordering
2. to never let a process acquire resources that are held by other processes
3. to let a process wait for only one resource at a time
4. all of the mentioned

Answer : impose a total ordering of all resource types and to determine whether one precedes another in the ordering

132. A deadlock can be broken by :

1. abort one or more processes to break the circular wait
2. abort all the process in the system
3. preempt all resources from all processes
4. none of the mentioned

Answer : abort one or more processes to break the circular wait

133. The two ways of aborting processes and eliminating deadlocks are :

1. Abort all deadlocked processes
2. Abort all processes
3. Abort one process at a time until the deadlock cycle is eliminated
4. All of the mentioned

Answer : Abort one process at a time until the deadlock cycle is eliminated



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134. Those processes should be aborted on occurrence of a deadlock, the termination of which :

1. is more time consuming
2. incurs minimum cost
3. safety is not hampered
4. all of the mentioned

Answer : incurs minimum cost

135. The process to be aborted is chosen on the basis of the following factors :

1. priority of the process
2. process is interactive or batch
3. how long the process has computed
4. all of the mentioned

Answer : all of the mentioned

136. Cost factors of process termination include :

1. Number of resources the deadlock process is not holding
2. CPU utilization at the time of deadlock
3. Amount of time a deadlocked process has thus far consumed during its execution
4. All of the mentioned

Answer : Amount of time a deadlocked process has thus far consumed during its execution

137. If we preempt a resource from a process, the process cannot continue with its normal execution and it must be :

1. aborted
2. rolled back
3. terminated
4. queued

Answer : rolled back

138. To _____ to a safe state, the system needs to keep more information about the states of processes.

1. abort the process
2. roll back the process
3. queue the process
4. none of the mentioned

Answer : roll back the process

139. If the resources are always preempted from the same process, _____ can occur.

1. deadlock
2. system crash
3. aging
4. starvation

Answer : starvation



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140. The solution to starvation is :

1. the number of rollbacks must be included in the cost factor
2. the number of resources must be included in resource preemption
3. resource preemption be done instead
4. all of the mentioned

Answer : the number of rollbacks must be included in the cost factor

141. Inter process communication :

1. allows processes to communicate and synchronize their actions when using the same address space
2. allows processes to communicate and synchronize their actions without using the same address space
3. allows the processes to only synchronize their actions without communication
4. none of these

Answer : allows processes to communicate and synchronize their actions without using the same address space.

142. Bounded capacity and Unbounded capacity queues are referred to as :

1. Programmed buffering
2. Automatic buffering
3. User defined buffering
4. No buffering

Answer : Automatic buffering

143. Message passing system allows processes to :

1. communicate with one another without resorting to shared data
2. communicate with one another by resorting to shared data
3. share data
4. name the recipient or sender of the message

Answer : communicate with one another without resorting to shared data

144. An IPC facility provides at least two operations:

1. write & delete message
2. delete & receive message
3. send & delete message
4. receive & send message

Answer : receive & send message

145. The Zero Capacity queue :

1. is referred to as a message system with buffering
2. is referred to as a message system with no buffering
3. is referred to as a link
4. none of these

Answer : is referred to as a message system with no buffering



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146. Messages sent by a process :

1. have to be of a fixed size
2. have to be a variable size
3. can be fixed or variable sized
4. None of these

Answer : can be fixed or variable sized

147. In the Zero capacity queue :

1. the queue can store at least one message
2. the sender blocks until the receiver receives the message
3. the sender keeps sending and the messages dont wait in the queue
4. none of these

Answer : the sender blocks until the receiver receives the message

148. The link between two processes P and Q to send and receive messages is called :

1. communication link
2. message-passing link
3. synchronization link
4. all of these

Answer : communication link

149. Which of the following are TRUE for direct communication :

1. A communication link can be associated with N number of process($N = \text{max. number of processes supported by system}$)
2. A communication link can be associated with exactly two processes
3. Exactly $N/2$ links exist between each pair of processes($N = \text{max. number of processes supported by system}$)
4. Exactly two link exists between each pair of processes

Answer : A communication link can be associated with exactly two processes

150. In indirect communication between processes P and Q :

1. there is another process R to handle and pass on the messages between P and Q
2. there is another machine between the two processes to help communication
3. there is a mailbox to help communication between P and Q
4. none of these

Answer : there is a mailbox to help communication between P and Q

151. In the non blocking send :

1. the sending process keeps sending until the message is received
2. the sending process sends the message and resumes operation
3. the sending process keeps sending until it receives a message
4. none of these

Answer : the sending process sends the message and resumes operation



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152. Address Binding is :

1. going to an address in memory
2. locating an address with the help of another address
3. binding two addresses together to form a new address in a different memory space
4. a mapping from one address space to another

Answer : a mapping from one address space to another

153. Binding of instructions and data to memory addresses can be done at :

1. Compile time
2. Load time
3. Execution time
4. All of the mentioned

Answer : All of the mentioned

154. If the process can be moved during its execution from one memory segment to another, then binding must be :

1. delayed until run time
2. preponed to compile time
3. preponed to load time
4. none of the mentioned

Answer : delayed until run time

155. Dynamic loading is :

1. loading multiple routines dynamically
2. loading a routine only when it is called
3. loading multiple routines randomly
4. none of the mentioned

Answer : loading a routine only when it is called

156. The advantage of dynamic loading is that :

1. A used routine is used multiple times
2. An unused routine is never loaded
3. CPU utilization increases
4. All of the mentioned

Answer : An unused routine is never loaded

157. The idea of overlays is to :

1. data that are needed at any given time
2. enable a process to be larger than the amount of memory allocated to it
3. keep in memory only those instructions
4. all of the mentioned

Answer : all of the mentioned

158. The _____ must design and program the overlay structure.

1. programmer
2. system architect
3. system designer
4. none of the mentioned

Answer : programmer



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159. The _____ swaps processes in and out of the memory.

1. Memory manager
2. CPU
3. CPU manager
4. User

Answer : Memory manager

160. If a higher priority process arrives and wants service, the memory manager can swap out the lower priority process to execute the higher priority process. When the higher priority process finishes, the lower priority process is swapped back in and continues execution. This variant of swapping is sometimes called :

1. priority swapping
2. pull out, push in
3. roll out, roll in
4. none of the mentioned

Answer : roll out, roll in

161. If binding is done at assembly or load time, then the process _____ be moved to different locations after being swapped out and in again.

1. can
2. must
3. can never
4. may

Answer : can never

162. In a system that does not support swapping,

1. the compiler normally binds symbolic addresses (variables) to relocatable addresses
2. the compiler normally binds symbolic addresses to physical addresses
3. the loader binds relocatable addresses to physical addresses
4. binding of symbolic addresses to physical addresses normally takes place during execution

Answer : the compiler normally binds symbolic addresses (variables) to relocatable addresses

163. In a system that does not support swapping,

1. the compiler normally binds symbolic addresses (variables) to relocatable addresses
2. the compiler normally binds symbolic addresses to physical addresses
3. the loader binds relocatable addresses to physical addresses
4. binding of symbolic addresses to physical addresses normally takes place during execution

Answer : the compiler normally binds symbolic addresses (variables) to relocatable addresses

164. Which of the following is TRUE ?

1. Overlays are used to increase the size of physical memory
2. Overlays are used to increase the logical address space
3. When overlays are used, the size of a process is not limited to the size of the physical memory
4. Overlays are used whenever the physical address space is smaller than the logical address space

Answer : When overlays are used, the size of a process is not limited to the size of the physical memory



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165. The address generated by the CPU is referred to as :

1. Physical address
2. Logical address
3. Neither physical nor logical
4. None of the mentioned

Answer : Logical address

166. The address loaded into the memory address register of the memory is referred to as :

1. Physical address
2. Logical address
3. Neither physical nor logical
4. None of the mentioned

Answer : Physical address

167. The run time mapping from virtual to physical addresses is done by a hardware device called the:

1. Virtual to physical mapper
2. Memory management unit
3. Memory mapping unit
4. None of the mentioned

Answer : Memory management unit

168. The base register is also known as the :

1. basic register
2. regular register
3. relocation register
4. delocation register

Answer : relocation register

169. The size of a process is limited to the size of :

1. physical memory
2. external storage
3. secondary storage
4. none of the mentioned

Answer : physical memory

170. If execution time binding is being used, then a process _____ be swapped to a different memory space.

1. has to be
2. can never
3. must
4. may

Answer : may

171. Swapping requires a _____

1. motherboard
2. keyboard
3. monitor
4. backing store

Answer : backing store



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172. The backing store is generally a :

1. fast disk
2. disk large enough to accommodate copies of all memory images for all users
3. disk to provide direct access to the memory images
4. all of the mentioned

Answer : all of the mentioned

173. The _____ consists of all processes whose memory images are in the backing store or in memory and are ready to run.

1. wait queue
2. ready queue
3. cpu
4. secondary storage

Answer : ready queue

174. The _____ time in a swap out of a running process and swap in of a new process into the memory is very high.

1. context – switch
2. waiting
3. execution
4. all of the mentioned

Answer : context – switch

175. The major part of swap time is _____ time.

1. waiting
2. transfer
3. execution
4. none of the mentioned

Answer : transfer

176. Swapping _____ be done when a process has pending I/O, or has to execute I/O operations only into operating system buffers.

1. must
2. can
3. must never
4. maybe

Answer : must never

177. Swap space is allocated :

1. as a chunk of disk
2. separate from a file system
3. into a file system
4. all of the mentioned

Answer : as a chunk of disk

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178. A monitor is a type of :

1. semaphore
2. low level synchronization construct
3. high level synchronization construct
4. none of the mentioned

Answer : high level synchronization construct

179. A monitor is characterized by :

1. a set of programmer defined operators
2. an identifier
3. the number of variables in it
4. all of the mentioned

Answer : a set of programmer defined operators

180. A procedure defined within a _____ can access only those variables declared locally within the _____ and its formal parameters.

1. process, semaphore
2. process, monitor
3. semaphore, semaphore
4. monitor, monitor

Answer : monitor, monitor

181. The monitor construct ensures that :

1. only one process can be active at a time within the monitor
2. n number of processes can be active at a time within the monitor (n being greater than 1)
3. the queue has only one process in it at a time
4. all of the mentioned

Answer : only one process can be active at a time within the monitor

182. The operations that can be invoked on a condition variable are :

1. wait & signal
2. hold & wait
3. signal & hold
4. continue & signal

Answer : wait & signal

183. The process invoking the wait operation is :

1. suspended until another process invokes the signal operation
2. waiting for another process to complete before it can itself call the signal operation
3. stopped until the next process in the queue finishes execution
4. none of the mentioned

Answer : suspended until another process invokes the signal operation

184. A Process Control Block(PCB) does not contain which of the following :

1. Code
2. Bootstrap program
3. Stack
4. Data

Answer : Bootstrap program



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

1. Output
2. Throughput
3. Efficiency
4. Capacity

Answer : Throughput

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

1. Running
2. Old
3. New
4. Waiting

Answer : Old

187. The state of a process is defined by:

1. the current activity of the process
2. the final activity of the process
3. the activity just executed by the process
4. the activity to next be executed by the process

Answer : the current activity of the process

188. The Process Control Block is:

1. Process type variable
2. Data Structure
3. A secondary storage section
4. A Block in memory

Answer : Data Structure

189. The objective of multi-programming is to :

1. Have some process running at all times
2. Have multiple programs waiting in a queue ready to run
3. To minimize CPU utilization
4. None of these

Answer : Have some process running at all times

190. A single thread of control allows the process to perform:

1. only one task at a time
2. multiple tasks at a time
3. only two tasks at a time
4. all of these

Answer : only one task at a time

191. The entry of all the PCBs of the current processes is in:

1. Process Register
2. Program Counter
3. Process Table
4. Process Unit

Answer : Process Table



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192. The degree of multi-programming is:

1. the number of processes executed per unit time
2. the number of processes in the ready queue
3. the number of processes in the I/O queue
4. the number of processes in memory

Answer : the number of processes in memory

193. Restricting the child process to a subset of the parent's resources prevents any process from

1. overloading the system by using a lot of secondary storage
2. under-loading the system by very less CPU utilization
3. overloading the system by creating a lot of sub-processes
4. crashing the system by utilizing multiple resources

Answer : overloading the system by creating a lot of sub-processes

194. The child process completes execution, but the parent keeps executing, then the child process is known as :

1. Dead
2. Zombie
3. Orphan
4. Body

Answer : Zombie

195. The child process can :

1. be a duplicate of the parent process
2. never be a duplicate of the parent process
3. cannot have another program loaded into it
4. never have another program loaded into it

Answer : be a duplicate of the parent process

196. A parent process calling _____ system call will be suspended until children processes terminate.

1. exec
2. wait
3. fork
4. exit

Answer : wait

197. In UNIX, the return value for the fork system call is _____ for the child process and _____ for the parent process.

1. A Negative integer, Zero
2. Zero, A Negative integer
3. Zero, A nonzero integer
4. A nonzero integer, Zero

Answer : Zero, A nonzero integer



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198. In UNIX, each process is identified by its :

1. Process Control Block
2. Device Queue
3. Process Identifier
4. None of these

Answer : Process Identifier

199. 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.

1. Multiprocessing, Multiprogramming
2. Multiprogramming, Uniprocessing
3. Multiprogramming, Multiprocessing
4. Uniprogramming, Multiprocessing

Answer : Uniprogramming, Multiprocessing

200. Cascading termination refers to termination of all child processes before the parent terminates _____

1. Normally
2. Abnormally
3. Normally or abnormally
4. None of these

Answer : Normally

201. Remote Procedure Calls are used :

1. for communication between two processes remotely different from each other on the same system
2. for communication between two processes on the same system
3. for communication between two processes on separate systems
4. None of these

Answer : for communication between two processes on separate systems

202. processes using message based communication, is called _____

1. Local Procedure Call
2. Inter Process Communication
3. Remote Procedure Call
4. Remote Machine Invocation

Answer : Remote Procedure Call

203. A process that is based on IPC mechanism which executes on different systems and can communicate with other.

1. Local Procedure Call
2. Inter Process Communication
3. Remote Procedure Call
4. Remote Machine Invocation

Answer : Remote Procedure Call



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204. To differentiate the many network services a system supports _____ are used.

1. Variables
2. Sockets
3. Ports
4. Service names

Answer : Ports

205. The remote method invocation :

1. allows a process to invoke memory on a remote object
2. allows a thread to invoke a method on a remote object
3. allows a thread to invoke memory on a remote object
4. allows a process to invoke a method on a remote object

Answer : allows a thread to invoke a method on a remote object

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

1. stub
2. identifier
3. name
4. process identifier

Answer : stub

207. The stub :

1. transmits the message to the server where the server side stub receives the message and invokes procedure on the server side
2. packs the parameters into a form transmittable over the network
3. locates the port on the server
4. all of these

Answer : all of these

208. The full form of RMI

1. Remote Memory Installation
2. Remote Memory Invocation
3. Remote Method Installation
4. Remote Method Invocation

Answer : Remote Method Invocation

209. To resolve the problem of data representation on different systems RPCs define

1. machine dependent representation of data
2. machine representation of data
3. machine-independent representation of data
4. none of these

Answer : machine-independent representation of data



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

1. Ready Queue
2. PCB queue
3. Device Queue
4. Job Queue

Answer : PCB queue

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

1. Power failure
2. Scheduler process
3. A device
4. Mutex

Answer : Scheduler process

212. When the process issues an I/O request :

1. It is placed in an I/O queue
2. It is placed in a waiting queue
3. It is placed in the ready queue
4. Timer

Answer : It is placed in an I/O queue

213. Which of the following need not necessarily be saved on a context switch between processes?

1. General purpose registers
2. Program counter
3. Translation look-aside buffer
4. All of the above

Answer : Translation look-aside buffer

214. When a process terminates :

1. It is removed from all queues
2. It is removed from all, but the job queue
3. Its process control block is de-allocated
4. Its process control block is never de-allocated

Answer : It is removed from all queues

215. The context of a process in the PCB of a process does not contain :

1. the value of the CPU registers
2. memory-management information
3. context switch time
4. the process state

Answer : context switch time

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216. Suppose that a process is in “Blocked” state waiting for some I/O service. When the service is completed, it goes to the :

1. Running state
2. Ready state
3. Suspended state
4. Terminated state

Answer : Ready state

217. What is a long-term scheduler?

1. It selects which process has to be brought into the ready queue
2. It selects which process has to be executed next and allocates CPU
3. It selects which process to remove from memory by swapping
4. None of these

Answer : It selects which process has to be brought into the ready queue

218. In a multi-programming environment :

1. the processor executes more than one process at a time
2. more than one process resides in the memory
3. the programs are developed by more than one person
4. a single user can execute many programs at the same time

Answer : more than one process resides in the memory

219. 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 :

1. Blocked state
2. Ready state
3. Terminated state
4. Suspended state

Answer : Ready state

220. If all processes I/O bound, the ready queue will almost always be _____ and the Short term Scheduler will have a _____ to do.

1. full, little
2. full, lot
3. empty, little
4. empty, lot

Answer : empty, little

221. The initial program that is run when the computer is powered up is called :

1. boot program
2. boot loader
3. initializer
4. bootstrap program

Answer : bootstrap program



223. Which operation is performed by an interrupt handler ?

1. Saving the current state of the system
2. Loading the interrupt handling code and executing it
3. Once done handling, bringing back the system to the original state it was before the interrupt occurred
4. All of these

Answer : All of these

224. How does the software trigger an interrupt?

1. Sending signals to CPU through bus
2. Executing a special operation called system call
3. Executing a special program called system program
4. Executing a special program called interrupt trigger program

Answer : Executing a special operation called system call

225. What is a trap/exception?

1. hardware generated interrupt caused by an error
2. software generated interrupt caused by an error
3. user generated interrupt caused by an error
4. none of these

Answer : software generated interrupt caused by an error

226. How does the Hardware trigger an interrupt?

1. Sending signals to CPU through system bus
2. Executing a special program called interrupt program
3. Executing a special program called system program
4. Executing a special operation called system call

Answer : Sending signals to CPU through system bus

227. What is an ISR?

1. Information Service Request
2. Interrupt Service Request
3. Interrupt Service Routine
4. Information Service Routine

Answer : Interrupt Service Routine

228. In the layered approach of Operating Systems :

1. Bottom Layer(0) is the User interface
2. Highest Layer(N) is the User interface
3. Bottom Layer(N) is the hardware
4. Highest Layer(N) is the hardware

Answer : Highest Layer(N) is the User interface

229. An interrupt vector

1. is an address that is indexed to an interrupt handler
2. is a unique device number that is indexed by an address
3. is a unique identity given to an interrupt
4. none of these

Answer : is an address that is indexed to an interrupt handler



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230. DMA is used for :

1. High speed devices(disks and communications network)
2. Low speed devices
3. Utilizing CPU cycles
4. All of these

Answer : High speed devices(disks and communications network)

231. In a memory mapped input/output :

1. the CPU uses polling to watch the control bit constantly, looping to see if device is ready
2. the CPU writes one data byte to the data register and sets a bit in control register to show that a byte is available
3. the CPU receives an interrupt when the device is ready for the next byte
4. the CPU runs a user written code and does accordingly

Answer : the CPU writes one data byte to the data register and sets a bit in control register to show that a byte is available

232. In a programmed input/output(PIO) :

1. the CPU uses polling to watch the control bit constantly, looping to see if device is ready
2. the CPU writes one data byte to the data register and sets a bit in control register to show that a byte is available
3. the CPU receives an interrupt when the device is ready for the next byte
4. the CPU runs a user written code and does accordingly

Answer : the CPU uses polling to watch the control bit constantly, looping to see if device is ready

233. An un-interruptible unit is known as :

1. static
2. single
3. atomic
4. none of these

Answer : atomic

234. The TestAndSet instruction is executed :

1. after a particular process
2. periodically
3. atomically
4. none of these

Answer : atomically

235. Semaphore is a/an _____ to solve the critical section problem.

1. hardware for a system
2. special program for a system
3. integer variable
4. none of these

Answer : integer variable

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236. The two atomic operations permissible on semaphores are :

1. wait
2. stop
3. hold
4. none of these

Answer : wait

237. Spinlocks are :

1. CPU cycles wasting locks over critical sections of programs
2. Locks that avoid time wastage in context switches
3. Locks that work better on multiprocessor systems
4. All of these

Answer : All of these

238. The main disadvantage of spinlocks is that :

1. they are not sufficient for many process
2. they require busy waiting
3. they are unreliable sometimes
4. they are too complex for programmers

Answer : they require busy waiting

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

1. Stop()
2. block()
3. hold()
4. wait()

Answer : block()

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

1. continue()
2. wakeup()
3. getup()
4. start()

Answer : wakeup()

241. If the semaphore value is negative :

1. its magnitude is the number of processes waiting on that semaphore
2. it is invalid
3. no operation can be further performed on it until the signal operation is performed on it
4. none of these

Answer : its magnitude is the number of processes waiting on that semaphore

242. The code that changes the value of the semaphore is :

1. remainder section code
2. non – critical section code
3. critical section code
4. none of these

Answer : critical section code

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

1. Signaling
2. Starvation
3. Deadlock
4. Aging

Answer : Deadlock

244. A semaphore :

1. is a binary mutex
2. must be accessed from only one process
3. can be accessed from multiple processes
4. none of these

Answer : can be accessed from multiple processes

245. The two kinds of semaphores are :

1. mutex & counting
2. binary & counting
3. counting & decimal
4. decimal & binary

Answer : binary & counting

246. A mutex :

1. is a binary mutex
2. must be accessed from only one process
3. can be accessed from multiple processes
4. None of these

Answer : must be accessed from only one process

247. 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 :

1. 42
2. 2
3. 7
4. 12

Answer : 2 P represents Wait and V represents Signal. P operation will decrease the value by 1 every time and V operation will increase the value by 1 every time.

248. A binary semaphore is a semaphore with integer values :

1. 1
2. -1
3. 1.5
4. 2.5

Answer : 1

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249. Semaphores are mostly used to implement :

1. System calls
2. IPC mechanisms
3. System protection
4. None of these

Answer : IPC mechanisms

250. Spinlocks are intended to provide _____ only.

1. Mutual Exclusion
2. Bounded Waiting
3. Aging
4. Progress

Answer : Bounded Waiting

251. Which module gives control of the CPU to the process selected by the short-term scheduler?

1. scheduler
2. dispatcher
3. interrupt
4. none of the mentioned

Answer : dispatcher

252. Which one of the following can not be scheduled by the kernel?

1. process
2. kernel level thread
3. user level thread
4. none of these

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

253. In multilevel feedback scheduling algorithm

1. a process can move to a different classified ready queue
2. classification of ready queue is permanent
3. processes are not classified into groups
4. None of these

Answer : a process can move to a different classified ready queue

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

1. job queue
2. ready queue
3. execution queue
4. process queue

Answer : ready queue



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255. The interval from the time of submission of a process to the time of completion is termed as

1. waiting time
2. turnaround time
3. response time
4. throughput

Answer : turnaround time

256. Process are classified into different groups in

1. shortest job scheduling algorithm
2. round robin scheduling algorithm
3. priority scheduling algorithm
4. multilevel queue scheduling algorithm

Answer : multilevel queue scheduling algorithm

257. Which scheduling algorithm allocates the CPU first to the process that requests the CPU first?

1. first-come, first-served scheduling
2. shortest job scheduling
3. priority scheduling
4. none of these

Answer : first-come, first-served scheduling

258. In priority scheduling algorithm

1. CPU is allocated to the process with highest priority
2. CPU is allocated to the process with lowest priority
3. Equal priority processes can not be scheduled
4. None of these

Answer : CPU is allocated to the process with highest priority

259. In priority scheduling algorithm, when a process arrives at the ready queue, its priority is compared with the priority of

1. all process
2. currently running process
3. parent process
4. init process

Answer : currently running process

260. Time quantum is defined in

1. shortest job scheduling algorithm
2. round robin scheduling algorithm
3. priority scheduling algorithm
4. multilevel queue scheduling algorithm

Answer : round robin scheduling algorithm



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261. The systems which allows only one process execution at a time, are called

1. uniprogramming systems
2. uniprocessing systems
3. unitasking systems
4. none of these

Answer : uniprocessing systems

262. The address of the next instruction to be executed by the current process is provided by the

1. CPU registers
2. Program counter
3. Process stack
4. Pipe

Answer : Program counter

263. Which system call returns the process identifier of a terminated child?

1. wait
2. exit
3. fork
4. fork

Answer : wait

264. In operating system, each process has its own

1. address space and global variables
2. open files
3. pending alarms, signals and signal handlers
4. all of these

Answer : all of these

265. A process stack does not contain

1. Function parameters
2. Local variables
3. Return addresses
4. PID of child process

Answer : PID of child process

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

1. create
2. fork
3. new
4. none of these

Answer : fork

267. A set of processes is deadlock if

1. each process is blocked and will remain so forever
2. each process is terminated
3. all processes are trying to kill each other
4. None of these

Answer : each process is blocked and will remain so forever



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268. A process can be terminated due to

1. normal exit
2. fatal error
3. killed by another process
4. all of the above

Answer : all of the above

269. What is the ready state of a process?

1. when process is scheduled to run after some execution
2. when process is unable to run until some task has been completed
3. when process is using the CPU
4. none of these

Answer : when process is scheduled to run after some execution

270. What is interprocess communication?

1. communication within the process
2. communication between two process
3. communication between two threads of same process
4. none of these

Answer : communication between two process

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

1. cooperating process
2. child process
3. parent process
4. init process

Answer : cooperating process

272. 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

1. dynamic condition
2. race condition
3. essential condition
4. critical condition

Answer : race condition

273. To enable a process to wait within the monitor,

1. a condition variable must be declared as condition
2. condition variables must be used as boolean objects
3. semaphore must be used
4. all of these

Answer : a condition variable must be declared as condition



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274. If a process is executing in its critical section, then no other processes can be executing in their critical section. This condition is called

1. mutual exclusion
2. synchronous exclusion
3. critical exclusion
4. asynchronous exclusion

Answer : mutual exclusion

275. A monitor is a module that encapsulates

1. shared data structures
2. procedures that operate on shared data structure
3. synchronization between concurrent procedure invocation
4. all of the above

Answer : all of the above

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

1. socket
2. semaphore
3. pipe
4. thread

Answer : semaphore

277. A semaphore is a shared integer variable

1. that can not drop below zero
2. that can not be more than zero
3. that can not drop below one
4. that can not be more than one

Answer : that can not drop below zero

278. Process synchronization can be done on

1. hardware level
2. software level
3. both hardware and software level
4. none of these

Answer : both hardware and software level

279. When high priority task is indirectly preempted by medium priority task effectively inverting the relative priority of the two tasks, the scenario is called.

1. priority inversion
2. priority removal
3. priority exchange
4. priority modification

Answer : priority inversion

280. Mutual exclusion can be provided by the

1. mutex locks
2. binary semaphores
3. both mutex locks and binary semaphores
4. none of these

Answer : both mutex locks and binary semaphores