



Unit 1 Introduction to OS

1. What is operating system?
 - a) collection of programs that manages hardware resources
 - b) system service provider to the application programs
 - c) link to interface the hardware and application programs
 - d) all of the mentioned
2. To access the services of operating system, the interface is provided by the _____
 - a) System calls
 - b) API
 - c) Library
 - d) Assembly instructions
3. Which one of the following is not true?
 - a) kernel is the program that constitutes the central core of the operating system
 - b) kernel is the first part of operating system to load into memory during booting
 - c) kernel is made of various modules which can not be loaded in running operating system
 - d) kernel remains in the memory during the entire computer session
4. Which one of the following error will be handle by the operating system?
 - a) power failure
 - b) lack of paper in printer
 - c) connection failure in the network
 - d) all of the mentioned
5. What is the main function of the command interpreter?
 - a) to get and execute the next user-specified command
 - b) to provide the interface between the API and application program
 - c) to handle the files in operating system
 - d) none of the mentioned
6. By operating system, the resource management can be done via _____
 - a) time division multiplexing
 - b) space division multiplexing
 - c) time and space division multiplexing
 - d) none of the mentioned
7. If a process fails, most operating system write the error information to a _____
 - a) log file
 - b) another running process
 - c) new file
 - d) none of the mentioned



Unit 2 : System Structure

8. Which facility dynamically adds probes to a running system, both in user processes and in the kernel?
 - a) DTrace
 - b) DLocate
 - c) DMap
 - d) DAdd
9. Which one of the following is not a real time operating system?
 - a) VxWorks
 - b) Windows CE
 - c) RTLinux
 - d) Palm OS
10. The OS X has _____
 - a) monolithic kernel
 - b) hybrid kernel
 - c) microkernel
 - d) monolithic kernel with modules
11. 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
12. 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
13. 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
14. In Unix, Which system call creates the new process?
 - a) fork
 - b) create
 - c) new
 - d) none of the mentioned



Unit 3 : Process Management

15. A process can be terminated due to _____
 - a) normal exit
 - b) fatal error
 - c) killed by another process
 - d) all of the mentioned
16. 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
17. 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
18. 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
19. A process stack does not contain _____
 - a) Function parameters
 - b) Local variables
 - c) Return addresses
 - d) PID of child process
20. Which system call returns the process identifier of a terminated child?
 - a) wait
 - b) exit
 - c) fork
 - d) get
21. 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



22. A Process Control Block(PCB) does not contain which of the following?
 - a) Code
 - b) Stack
 - c) Bootstrap program
 - d) Data
23. The number of processes completed per unit time is known as _____
 - a) Output
 - b) Throughput
 - c) Efficiency
 - d) Capacity
24. 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
25. Which of the following is not the state of a process?
 - a) New
 - b) Old
 - c) Waiting
 - d) Running
26. What is a Process Control Block?
 - a) Process type variable
 - b) Data Structure
 - c) A secondary storage section
 - d) A Block in memory
27. The entry of all the PCBs of the current processes is in _____
 - a) Process Register
 - b) Program Counter
 - c) Process Table
 - d) Process Unit
28. 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
29. 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

Unit : Process Synchronization

- 30. What is the objective of multiprogramming?
 - a) Have some process running at all times
 - b) Have multiple programs waiting in a queue ready to run
 - c) To minimize CPU utilization
 - d) None of the mentioned
- 31. Which of the following do not belong to queues for processes?
 - a) Job Queue
 - b) PCB queue
 - c) Device Queue
 - d) Ready Queue
- 32. 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
- 33. 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
- 34. What is a long-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
- 35. 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



36. 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
37. 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
38. 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
39. The only state transition that is initiated by the user process itself is _____
 - a) block
 - b) wakeup
 - c) dispatch
 - d) none of the mentioned
40. 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
41. 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
42. 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



43. 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
44. 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
45. Which of the following does not interrupt a running process?
 - a) A device
 - b) Timer
 - c) Scheduler process
 - d) Power failure
46. Which process can be affected by other processes executing in the system?
 - a) cooperating process
 - b) child process
 - c) parent process
 - d) init process
47. 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
48. If a process is executing in its critical section, then no other processes can be executing in their critical section. This condition is called?
 - a) mutual exclusion
 - b) critical exclusion
 - c) synchronous exclusion
 - d) asynchronous exclusion
49. Which one of the following is a synchronization tool?
 - a) thread
 - b) pipe
 - c) semaphore
 - d) socket



50. 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
51. 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
52. When high priority task is indirectly preempted by medium priority task effectively inverting the relative priority of the two tasks, the scenario is called _____
- a) priority inversion
 - b) priority removal
 - c) priority exchange
 - d) priority modification
53. Process synchronization can be done on _____
- a) hardware level
 - b) software level
 - c) both hardware and software level
 - d) none of the mentioned
54. 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
55. 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
56. 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



57. A parent process calling _____ system call will be suspended until children processes terminate.
- wait
 - fork
 - exit
 - exec
58. Cascading termination refers to termination of all child processes before the parent terminates _____
- Normally
 - Abnormally
 - Normally or abnormally
 - None of the mentioned
59. 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.
- Multiprocessing, Multiprogramming
 - Multiprogramming, Uniprocessing
 - Multiprogramming, Multiprocessing
 - Uniprogramming, Multiprocessing
60. In UNIX, each process is identified by its _____
- Process Control Block
 - Device Queue
 - Process Identifier
 - None of the mentioned
61. In UNIX, the return value for the fork system call is _____ for the child process and _____ for the parent process.
- A Negative integer, Zero
 - Zero, A Negative integer
 - Zero, A nonzero integer
 - A nonzero integer, Zero
62. The child process can _____
- be a duplicate of the parent process
 - never be a duplicate of the parent process
 - cannot have another program loaded into it
 - never have another program loaded into it
63. The child process completes execution, but the parent keeps executing, then the child process is known as _____
- Orphan
 - Zombie



- c) Body
d) Dead
64. What is Inter process 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 without using the same address space
c) allows the processes to only synchronize their actions without communication
d) none of the mentioned
65. Message passing system allows processes to _____
a) communicate with one another without resorting to shared data
b) communicate with one another by resorting to shared data
c) share data
d) name the recipient or sender of the message
66. 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
67. 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
68. 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
69. Which of the following are TRUE for direct communication?
a) A communication link can be associated with N number of process($N = \text{max. number of processes supported by system}$)
b) A communication link can be associated with exactly two processes
c) Exactly $N/2$ links exist between each pair of processes($N = \text{max. number of processes supported by system}$)
d) Exactly two link exists between each pair of processes
70. 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

71. 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
72. 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
73. 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
74. Bounded capacity and Unbounded capacity queues are referred to as _____
- a) Programmed buffering
 - b) Automatic buffering
 - c) User defined buffering
 - d) No buffering
75. Remote Procedure Calls are used _____
- a) for communication between two processes remotely different from each other on the same system
 - b) for communication between two processes on the same system
 - c) for communication between two processes on separate systems
 - d) none of the mentioned
76. To differentiate the many network services a system supports _____ are used.
- a) Variables
 - b) Sockets
 - c) Ports
 - d) Service names
77. RPC provides a(an) _____ on the client side, a separate one for each remote procedure.
- a) stub
 - b) identifier



- c) name
d) process identifier
78. What is stub?
a) transmits the message to the server where the server side stub receives the message and invokes procedure on the server side
b) packs the parameters into a form transmittable over the network
c) locates the port on the server
d) all of the mentioned
79. To resolve the problem of data representation on different systems RPCs define _____
a) machine dependent representation of data
b) machine representation of data
c) machine-independent representation of data
d) none of the mentioned
80. What is the full form of RMI?
a) Remote Memory Installation
b) Remote Memory Invocation
c) Remote Method Installation
d) Remote Method Invocation
81. The remote method invocation _____
a) allows a process to invoke memory on a remote object
b) allows a thread to invoke a method on a remote object
c) allows a thread to invoke memory on a remote object
d) allows a process to invoke a method on a remote object
82. A process that is based on IPC mechanism which executes on different systems and can communicate with other processes using message based communication, is called _____
a) Local Procedure Call
b) Inter Process Communication
c) Remote Procedure Call
d) Remote Machine Invocation
83. The initial program that is run when the computer is powered up is called _____
a) boot program
b) bootloader
c) initializer
d) bootstrap program
84. 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

Unit : CPU Scheduling

85. 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
86. What is an ISR?
- a) Information Service Request
 - b) Interrupt Service Request
 - c) Interrupt Service Routine
 - d) Information Service Routine
87. 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
88. 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
89. 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
90. 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
91. 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
92. 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
93. 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
94. 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
95. 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
96. 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
97. 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
98. 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
99. 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
100. 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
101. 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
102. 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
103. 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
104. 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
105. CPU scheduling is the basis of _____
a) multiprocessor systems
b) multiprogramming operating systems
c) larger memory sized systems
d) none of the mentioned
106. With multiprogramming _____ is used productively.
a) time
b) space
c) money
d) all of the mentioned
107. 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
108. 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
109. 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
110. 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
111. 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

112. 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

113. 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

114. 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

115. 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

116. 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

117. 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

118. 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



119. 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
120. 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
121. 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
122. 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
123. Complex scheduling algorithms _____
- a) are very appropriate for very large computers
 - b) use minimal resources
 - c) use many resources
 - d) all of the mentioned
124. 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
125. 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

126. 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

127. 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) $tQ = 50ms$

128. 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

129. 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

130. 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

131. 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

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



132. 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

133. 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

134. The FCFS algorithm is particularly troublesome for _____

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

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

Process	Burst time
P1	6
P2	8
P3	7
P4	3

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

- a) The waiting time for process P1 is 3ms
- b) The waiting time for process P1 is 0ms
- c) The waiting time for process P1 is 16ms
- d) The waiting time for process P1 is 9ms

136. 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

137. 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



138. 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
139. 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
140. A solution to the problem of indefinite blockage of low – priority processes is _____
- a) Starvation
 - b) Wait queue
 - c) Ready queue
 - d) Aging
141. 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
- a) i only
 - b) i and iii only
 - c) ii and iii only
 - d) i, ii and iii
142. Which of the following scheduling algorithms gives minimum average waiting time?
- a) FCFS
 - b) SJF
 - c) Round – robin
 - d) Priority
143. Concurrent access to shared data may result in _____
- a) data consistency
 - b) data insecurity
 - c) data inconsistency



d) none of the mentioned

144. 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

145. 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

146. 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

147. 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

148. 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

149. 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



Unit : IO System

150. 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
151. An un-interruptible unit is known as _____
- a) single
 - b) atomic
 - c) static
 - d) none of the mentioned
152. TestAndSet instruction is executed _____
- a) after a particular process
 - b) periodically
 - c) atomically
 - d) none of the mentioned
153. 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
154. What are the two atomic operations permissible on semaphores?
- a) wait
 - b) stop
 - c) hold
 - d) none of the mentioned
155. 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
156. 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

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

- a) stop()
- b) block()
- c) hold()
- d) wait()

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

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

159. 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

160. 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

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

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

162. 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

163. What are the two kinds of semaphores?

- a) mutex & counting
- b) binary & counting
- c) counting & decimal



d) decimal & binary

164. 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

165. At a particular time of computation the value of a counting semaphore is 7. Then 20 P operations and 15 V operations were completed on this semaphore. The resulting value of the semaphore is? (GATE 1987)

- a) 42
- b) 2
- c) 7
- d) 12

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

- a) 1
- b) -1
- c) 0.8
- d) 0.5

167. Semaphores are mostly used to implement _____

- a) System calls
- b) IPC mechanisms
- c) System protection
- d) None of the mentioned

168. Spinlocks are intended to provide _____ only.

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

169. 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

170. 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

Unit : Memory Management

171. 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
172. 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
173. 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
174. 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
175. A monitor is a type of _____
- a) semaphore
 - b) low level synchronization construct
 - c) high level synchronization construct
 - d) none of the mentioned
176. A monitor is characterized by _____
- a) a set of programmer defined operators
 - b) an identifier
 - c) the number of variables in it
 - d) all of the mentioned



Unit : File System

177. A procedure defined within a _____ can access only those variables declared locally within the _____ and its formal parameters.
- process, semaphore
 - process, monitor
 - semaphore, semaphore
 - monitor, monitor
178. The monitor construct ensures that _____
- only one process can be active at a time within the monitor
 - n number of processes can be active at a time within the monitor (n being greater than 1)
 - the queue has only one process in it at a time
 - all of the mentioned
179. What are the operations that can be invoked on a condition variable?
- wait & signal
 - hold & wait
 - signal & hold
 - continue & signal
180. Which is the process of invoking the wait operation?
- suspended until another process invokes the signal operation
 - waiting for another process to complete before it can itself call the signal operation
 - stopped until the next process in the queue finishes execution
 - none of the mentioned
181. If no process is suspended, the signal operation _____
- puts the system into a deadlock state
 - suspends some default process execution
 - nothing happens
 - the output is unpredictable
182. A collection of instructions that performs a single logical function is called _____
- transaction
 - operation
 - function
 - all of the mentioned
183. A terminated transaction that has completed its execution successfully is _____ otherwise it is _____
- committed, destroyed
 - aborted, destroyed



- c) committed, aborted
- d) none of the mentioned

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

- a) safety
- b) protection
- c) roll – back
- d) revert – back

185. Write ahead logging is a way _____

- a) to ensure atomicity
- b) to keep data consistent
- c) that records data on stable storage
- d) all of the mentioned

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

- a) a memory
- b) a system
- c) a disk
- d) a log record

187. An actual update is not allowed to a data item _____

- a) before the corresponding log record is written out to stable storage
- b) after the corresponding log record is written out to stable storage
- c) until the whole log record has been checked for inconsistencies
- d) all of the mentioned

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

- a) idempotent
- b) easy
- c) protected
- d) all of the mentioned

189. The system periodically performs checkpoints that consists of the following operation(s) _____

- a) Putting all the log records currently in main memory onto stable storage
- b) putting all modified data residing in main memory onto stable storage
- c) putting a log record onto stable storage
- d) all of the mentioned

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



- a) There is a need to perform an undo operation on T1
- b) There is a need to perform a redo operation on T1
- c) There is no need to perform an undo and redo operation on T1
- d) All of the mentioned

191. Serializable schedules are ones where _____

- a) concurrent execution of transactions is equivalent to the transactions executed serially
- b) the transactions can be carried out one after the other
- c) a valid result occurs after execution transactions
- d) none of the mentioned

192. A locking protocol is one that _____

- a) governs how locks are acquired
- b) governs how locks are released
- c) governs how locks are acquired and released
- d) none of the mentioned

193. The two phase locking protocol consists of _____

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

194. The growing phase is a phase in which?

- a) A transaction may obtain locks, but does not release any
- b) A transaction may obtain locks, and releases a few or all of them
- c) A transaction may release locks, but does not obtain any new locks
- d) A transaction may release locks, and does obtain new locks

195. The shrinking phase is a phase in which?

- a) A transaction may obtain locks, but does not release any
- b) A transaction may obtain locks, and releases a few or all of them
- c) A transaction may release locks, but does not obtain any new locks
- d) A transaction may release locks, and does obtain new locks



Unit : Dead Lock

196. Which of the following concurrency control protocols ensure both conflict serializability and freedom from deadlock?
- I) 2-phase locking
 - II) Timestamp ordering
- a) I only
 - b) II only
 - c) Both I and II
 - d) Neither I nor II
197. 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
198. 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
199. 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
200. 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
201. 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
202. 6. What is the drawback of banker's algorithm?
- a) in advance processes rarely know how much resource they will need



- b) the number of processes changes as time progresses
- c) resource once available can disappear
- d) all of the mentioned

203. 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

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

- a) deadlock
- b) starvation
- c) inversion
- d) aging

205. 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

206. 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

Answers :

1	2	3	4	5	6	7	8	9	10
d	a	c	d	a	c	a	a	d	C
11	12	13	14	15	16	17	18	19	20
b	b	d	a	d	a	b	a	d	A
21	22	23	24	25	26	27	28	29	30
b	c	b	d	b	b	c	d	a	A
31	32	33	34	35	36	37	38	39	40
b	a	a	a	c	c	b	c	a	B



41	42	43	44	45	46	47	48	49	50
c	b	d	b	c	a	b	a	c	A
51	52	53	54	55	56	57	58	59	60
c	a	c	d	a	c	a	a	d	C
61	62	63	64	65	66	67	68	69	70
c	a	b	b	a	d	c	a	b	C
71	72	73	74	75	76	77	78	79	80
b	b	b	b	c	c	a	d	c	D
81	82	83	84	85	86	87	88	89	90
b	c	d	b	b	c	a	a	b	A
91	92	93	94	95	96	97	98	99	100
c	b	a	d	a	b	b	a	a	B
101	102	103	104	105	106	107	108	109	100
b	d	a	b	b	a	b	c	c	B
111	112	113	114	115	116	117	118	119	120
d	c	a	a	d	b	b	c	b	B
121	122	123	124	125	126	127	128	129	130
a	a	a	b	b	a	a	c	b	B
131	132	133	134	135	136	137	138	139	140
d	b	b	b	a	d	a	c	d	D
141	142	143	144	145	146	147	148	149	150
d	b	c	b	d	d	a	a	b	B
151	152	153	154	155	156	157	158	159	160
b	c	c	a	d	b	b	b	a	C
161	162	163	164	165	166	167	168	169	170
d	c	b	b	b	a	b	b	c	A
171	172	173	174	175	176	177	178	179	180
b	b	a	b	c	a	d	a	a	A
181	182	183	184	185	186	187	188	189	190
c	a	c	c	d	d	a	a	d	C
191	192	193	194	195	196	197	198	199	200
a	c	a	a	c	b	a	d	a	A
201	202	203	204	205	206				
a	d	c	b	a	a				