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

5. In Operating Systems, which of the following is/are CPU scheduling algorithms?
   a) Round Robin
   b) Shortest Job First
   c) Priority
   d) All of the mentioned

6. 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

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

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

9. 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

10. 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

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

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

13. 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

14. 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

15. 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

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

17. 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

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

19. The number of processes completed per unit time is known as _____
a) Output
b) Throughput
c) Efficiency
d) Capacity

20. 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
21. What is a Process Control Block?
    a) Process type variable
    b) Data Structure
    c) A secondary storage section
    d) A Block in memory
22. 6. The entry of all the PCBs of the current processes is in _____
    a) Process Register
    b) Program Counter
    c) Process Table
    d) Process Unit
23. 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
24. What is the objective of multiprogramming?
    a) Have a process running at all time
    b) Have multiple programs waiting in a queue ready to run
    c) To increase CPU utilization
    d) None of the mentioned
25. Which of the following do not belong to queues for processes?
    a) Job Queue
    b) PCB queue
    c) Device Queue
    d) Ready Queue
26. 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

27. What is a long-term scheduler?
    a) It selects processes which have to be brought into the ready queue
    b) It selects processes which have to be executed next and allocates CPU
    c) It selects processes which heave to remove from memory by swapping
    d) None of the mentioned
28. 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
29. 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
30. 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
31. 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
32. 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
33. Which process can be affected by other processes executing in the system?
    a) cooperating process
    b) child process
    c) parent process
    d) init process

34. 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
35. If a process is executing in its critical section, then no other processes can be executing in their critical section. What is this condition called?
    a) mutual exclusion
    b) critical exclusion
    c) synchronous exclusion
    d) asynchronous exclusion
36. Which one of the following is a synchronization tool?
    a) thread
    b) pipe
    c) semaphore
    d) socket
37. 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
38. 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
39. 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

40. A parent process calling _____ system call will be suspended until children processes terminate.
    a) wait
    b) fork
    c) exit
    d) exec
41. In UNIX, each process is identified by its _____
    a) Process Control Block
    b) Device Queue
    c) Process Identifier
    d) None of the mentioned
42. The child process completes execution, but the parent keeps executing, then the child process is known as _____
    a) Orphan
    b) Zombie
    c) Body
    d) Dead
43. What is Interprocess communication?
    a) allows processes to communicate and synchronize their actions when using the same address space
    b) allows processes to communicate and synchronize their actions
    c) allows the processes to only synchronize their actions without communication
    d) none of the mentioned
44. 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
45. The initial program that is run when the computer is powered up is called _____
    a) boot program
    b) bootloader
    c) initializer
    d) bootstrap program

46. 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
47. What is an ISR?
    a) Information Service Request
    b) Interrupt Service Request
    c) Interrupt Service Routine
    d) Information Service Routine
48. 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
49. 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
50. A collection of instructions that performs a single logical function is called _____
    a) transaction
    b) operation
    c) function
    d) all of the mentioned
51. 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
52. 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

53. 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

54. 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

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

56. 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

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

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

59. The disadvantage of a process being allocated all its resources before beginning its execution is _____
    a) Low CPU utilization
    b) Low resource utilization
    c) Very high resource utilization
    d) None of the mentioned
60. A deadlock avoidance algorithm dynamically examines the _____ to ensure that a circular wait condition can never exist.
    a) resource allocation state
    b) system storage state
    c) operating system
    d) resources
61. A state is safe, if _____
    a) the system does not crash due to deadlock occurrence
    b) the system can allocate resources to each process in some order and still avoid a deadlock
    c) the state keeps the system protected and safe
    d) all of the mentioned
62. The _____ swaps processes in and out of the memory.
    a) Memory manager
    b) CPU
    c) CPU manager
    d) User
63. The address generated by the CPU is referred to as _____
    a) Physical address
    b) Logical address
    c) Neither physical nor logical
    d) None of the mentioned
64. The address loaded into the memory address register of the memory is referred to as _____
    a) Physical address
    b) Logical address
    c) Neither physical nor logical
    d) None of the mentioned
65. The size of a process is limited to the size of _____
    a) physical memory
    b) external storage

c) secondary storage
d) none of the mentioned

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

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

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

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

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

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

72. When memory is divided into several fixed sized partitions, each partition may contain _____
a) exactly one process
b) at least one process

c) multiple processes at once
d) none of the mentioned

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

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

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

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

77. _____ is generally faster than _____ and _____
a) first fit, best fit, worst fit
b) best fit, first fit, worst fit
c) worst fit, best fit, first fit
d) none of the mentioned

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

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

80. Logical memory is broken into blocks of the same size called _____
    a) frames
    b) pages
    c) backing store
    d) none of the mentioned
81. The size of a page is typically _____
    a) varied
    b) power of 2
    c) power of 4
    d) none of the mentioned
82. The percentage of times a page number is found in the TLB is known as _____
    a) miss ratio
    b) hit ratio
    c) miss percent
    d) none of the mentioned
83. In paged memory systems, if the page size is increased, then the internal fragmentation generally _____
    a) becomes less
    b) becomes more
    c) remains constant
    d) none of the mentioned
84. In segmentation, each address is specified by _____
    a) a segment number & offset
    b) an offset & value
    c) a value & segment number
    d) a key & value
85. The _____ can be turned off by the CPU before the execution of critical instruction sequences that must not be interrupted.
    a) nonmaskable interrupt
    b) blocked interrupt
    c) maskable interrupt
    d) none of the mentioned
86. A keyboard is an example of a device that is accessed through a _____ interface.
    a) block stream
    b) set of blocks

c) character stream
d) none of the mentioned

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

88. Caching is _____ spooling.
a) same as
b) not the same as
c) all of the mentioned
d) none of the mentioned

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

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

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

92. 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

93. 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

94. 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

95. 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

96. 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

97. 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

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

99. 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

100. 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

101. 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

102. What are the two kinds of semaphores?

a) mutex & counting

b) binary & counting

c) counting & decimal

d) decimal & binary

103. Semaphores are mostly used to implement _____

a) System calls

b) IPC mechanisms

c) System protection

d) None of the mentioned

104. From the following, which is not a common file permission?

a) Write

b) Execute

c) Stop

d) Read

105. Which of the following is a strong password?

a) 19thAugust88

b) Delhi88

c) P@assw0rd

d) !augustdelhi

106. To create a file _____

a) allocate the space in file system

b) make an entry for new file in directory

c) allocate the space in file system & make an entry for new file in directory

d) none of the mentioned

107. In _____ information is recorded magnetically on platters.

a) magnetic disks

b) electrical disks

c) assemblies

d) cylinders

108. Whenever a process needs I/O to or from a disk it issues a _____
a) system call to the CPU
b) system call to the operating system
c) a special procedure
d) all of the mentioned
109. SSTF algorithm, like SJF _____ of some requests.
a) may cause starvation
b) will cause starvation
c) does not cause starvation
d) causes aging
110. For most computers, the bootstrap is stored in _____
a) RAM
b) ROM
c) Cache
d) Tertiary storage
111. The first process launched by the linux kernel is _____
a) init process
b) zombie process
c) batch process
d) boot process
112. What is Linux?
a) single user, single tasking
b) single user, multitasking
c) multi user, single tasking
d) multi user, multitasking
113. A process can be _____
a) single threaded
b) multithreaded
c) both single threaded and multithreaded
d) none of the mentioned
114. Termination of the process terminates _____
a) first thread of the process
b) first two threads of the process
c) all threads within the process
d) no thread within the process
115. Which one of the following is not a valid state of a thread?
a) running
b) parsing

c) ready
d) blocked

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

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

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

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