OPERATING SYSTEMS
GROUP THREE (3)

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CHAPTER 1

1) _____ is a program for managing computer hardware.
   A. Operating System C. Telnet
   B. Microsoft word D. VNC

2) Computer systems can be divided into four components.
   A. Hardware, Operating system, application programs and users
   B. Users, computer room, server racks and mouse
   C. Hardware, internet, PC and google
   D. Operating Systems, application programs, users and internet

3) From system view, operating systems can be thought as.
   A. Resource allocator and internet management
   B. Resource allocator and antivirus
   C. Antivirus and Control program
   D. Resource allocator and Control program

4) The one program that is always running on a computer is_____.
   A. Operating system C. Antivirus program
   B. Kernel D. daemon process

5) Multiprocessing system where there exists a boss-worker relationship among the processors is known as.
   A. Symmetric Multiprocessing C. Asymmetric Multiprocessing
   B. Boss-worker Multiprocessing D. Resource Multiprocessing

6) The context of execution of a program is known as
   A. Instance C. Context switch
   B. Process D. scheduling

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7) A _____ is a software generated interrupt.
   A. Trap C. Sleep
   B. Block D. SIGINT

8) There _____ modes of operation in multiprocessing system.
   A. 2 modes C. 4 modes
   B. 1 mode D. 8 modes

9) The programming techniques that is designed to take advantage of cluster is
   A. Serialization C. Object-Oriented
   B. Parallelization D. Structured programing

10) Moore's law predicted that the number of transistors on an integrated circuit will double every _____.
   A. 18 months C. 14 months
   B. 20 months D. 17 months

CHAPTER 2

11. Environment in which programs of computer system are executed is:
   A. Operating system B. Clustered system
   C. Nodes D. Both A and B
   E. GUI
   Answer A

12. Each user of computer system that uses computer services has at least
   A. 1program B. 2programs
   C. 3programs D. 4programs
   E. 5programs
   Answer A

13. System resources of computer system can be utilized better in
   A. Single program environment B. Dual program environment
   C. Core environment D. Multi program environment
   E. Kernel environment
   Answer D

14. Logical extension of multiprogramming operating system is
   A. Time sharing B. Multi-tasking
   C. Single programing D. Both A and B
   E. Tasking
   Answer D

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15. Multiprogramming of computer system increases

A. Memory
B. Storage
C. CPU utilization
D. Cost
E. Money

Answer C

16. All the following are types of System Calls except

A. Process control
B. Communications
C. Protection
D. Operating system
E. File manipulation

Answer D

17. Arrange the following in the correct order from bottom-up of the logical computer hierarchy

A. Hardware=>Operating System=>System Programs=>Application programs=>
B. Operating System=>System Programs=>Application programs=> Hardware
C. Hardware=>Operating System=> Application programs =>System Programs
D. Application programs=> Hardware=>Operating System=> Hardware
E. System Programs=>Application programs=> Hardware=> Operating System

Answer A

18. The main user interface in Apple Macintosh OS is known as

A. Aqua user interface
B. Aquarium user interface
C. Mach user interface
D. Apple interface
E. Communicating interface

Answer A

19. …….. is the Basic unit of CPU Utilization.

A. Process
B. Utilization
C. Threads
D. File system

Answer C

20. ……..is the process of exchanging information or resources with other processes or computers over a network.

A. Communication
B. File system
C. Accounting
D. Error detection
E. Sharing

Answer A

21. All the following are examples of Application Programming Interface(API) except

A. C++ API
B. Windows API
C. POSIX API
D. Java API
E. Python API

Answer A

22) The initial program that is run when the computer is powered up is called…….

A. Boot program
B. Bootloader
C. Initializer
D. Bootstrap program
E. Booting
Answer: D

23) 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
E. Sending signals to CPU through the motherboard
Answer: b

24) In the layered approach of Operating Systems: (choose two)
A. Bottom Layer(0) is the User interface
B. Highest Layer(N) is the User interface
C. Bottom Layer(0) is the hardware
D. Highest Layer(N) is the hardware
E. Bottom Layer (0) is the software
Answer: B and C

25) Programs that duplicate the functionality of one system on another system are called……
A. Imitators
B. Daemons
C. Deadlocks
D. Modules
E. Emulators
Answer E

CHAPTER 3

Use the following to answer question 26-30
a) New state
b) Blocked state
c) Running state
d) Exit state
e) Ready state

26) The process is currently being executed
27) The process is prepared to execute when given the turn
28) The process can't execute until some event occurs such as an I/O operation
29) The process has been created but not yet accepted in the pool of executable processes by the OS
30) The process has been released from the pool of executable processes by the OS

31) Which of the following is not a process state
a) Ready state
b) Blocked state
c) Running state
d) None of the above

32) Processor is faster than I/O so all processes could be waiting for I/O
a) True
b) False

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33) File tables provide information about all these except

a) The location of files
b) The existence of files
c) Files current status
d) None of the above

34) Various flags, signals, and messages may be associated with communication between two independent processes

a) True
b) False

35) The processes in most systems can execute concurrently, and they may be created and deleted dynamically

a) True
b) False

CHAPTER 4 -THREADS

36) Which one of the following is not shared by threads?

a) program counter
b) stack
c) program and stack
d) register set
e) Thread ID

37) If one thread opens a file with read privileges, then

a) other threads in the another process can also read from that file
b) other threads in the same process can also read from that file
c) thread in the same process cannot read from that file
d) Thread in the same process and other process can read from that file
e) other thread in the same process cannot read from that file

38) The time required to create a new thread in an existing process is

a) approximately the same as time the time required to create new process
c) less than the time required to create a new process
c) equal to the time required to create a new process
d) greater or less than time required to create new process
e) greater than the time required to create a new process

39) When the event for which a thread is blocked occurs,

a) thread moves to the ready queue
b) thread remains blocked
c) threads are not blocked in anyway
d) a new thread is provided
e) thread completes

40) The jacketing technique is used to

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

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41) 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
e) all threads thread moves to the ready queue

42) Which one of the following is not a valid state of a thread?

a) running
b) parsing
c) ready
d) blocked
e) waiting

43) The register context and stacks of a thread are deallocated when the thread

a) terminates
b) blocks
c) unblocks
d) spawns
e) running

44) In situations that require waiting for multiple threads to complete, the WaitForMultipleObjects() function is used. This function is passed four parameters:

i. The number of objects to wait for
ii. A pointer to the array of objects
iii. A flag indicating whether all objects have been signaled
iv. A timeout duration (or INFINITE)
v. The memory value of the program counter

a) i,v
b) iv, v
c) i,ii,iii,iv
d) i,ii,iii,iv,v
e) ii,iv,v

45) In a pure Kernel Level Thread facility all of work of thread management is done by the

a) Application
b) Program
c) Kernel
d) Threads
e) Process

46) To avoid the race condition, the number of processes that may be simultaneously inside the critical section is

a) 14
b) 12
c) 3
d) 1
e) 0

47) Kernel mode of operating system runs when mode bit is

a) 1
b) 0
c) x
d) undefined
e) -1

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48) 13. Which among following scheduling algorithms give minimum average waiting time
   a) FCFS
   b) Round robin
   c) On priority
   d) MVT
   e) SJF

49) 14. Shortest Job First executes first the job
   a) with the least processor needs
   b) that first entered the queue
   c) that has been in the queue for the longest
   d) that last entered the queue
   e) that first entered running state

50) A thread is
   a) lightweight process where the context switching is low
   b) lightweight process where the context switching is high
   c) used to speed up paging
   d) used in dead locks
   e) used to locate the kernel and load it into the operating system

CHAPTER 5

51.A process that can affect or be affected by another process executing in the system is called

a. Synchronized process
b. Modifiable process
c. Cooperating process
d. Kernel process
e. User process

52.Ensuring that only one process access and modifies the value/content of the variable counter is a way of curbing

a. Synchronization processes
b. Deadlock
c. Lock Situation
d. Race Condition
e. Resource contention

53.The segment of the code of a process which when executing, no other process is supposed to execute its critical section is referred to as

a. Critical section
b. Entry section
c. Remainder section
d. Exit section
e. Valuable section

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54.Each process must request permission to enter into its

a. Critical section
b. Entry section
c. Remainder section
d. Exit section
e. Valuable section

55.Protecting critical regions through the use of locks is known as

a. Critical region safety
b. Locking
c. Progress
d. Bounding wait
e. Race condition

56.The type of mutex lock that requires that any process wanting to execute its critical section needs to continuously loop to call the Acquire() function is called the

a. Acquire lock
b. Spinlock
c. Process lock
d. Release lock
e. Function lock

57.A Semaphore is accessed through only two standard atomic operations:

a. Acquire() and Release()
b. Call() and Wait()
c. Acquire() and Wait()
d. Call() and Release()
e. Acquire() and Call()

58.The situation whereby two or more processes are waiting indefinitely for an event that can be caused by one of the waiting processes is known as

a. Event lock
b. Self-initialization
c. Deadlock
d. Race condition
e. Lock condition

59.A situation whereby processes wait indefinitely within the semaphore is referred to as

a. Starvation
b. Semaphore lock
c. Greedy starvation
d. Semaphore starvation
e. Starvation lock

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60.A sequence of memory read-write operations that are atomic is known as

a. Memory transaction
b. Memory atomicity
c. Memory recursion
d. Race condition
e. Starvation

CHAPTER 7

71) In a multiprogramming environment, several processes may compete for a finite number of……

a) resources b) time c) deadlock d) things

72) A process requests resources; if the resources are not available at that time, the process enters a ……

a) deadlock b) waiting state c) hibernation d) time wasting

73) A…… records whether each resource is free or allocated

a) recorder b) system table c) allocator d) system

74) If a process requests a resource that is currently allocated to another process, it can be added to a ……. of processes waiting for this resource

a) queue b) program c) line d) system

75) Sometimes, a waiting process is never again able to change state, because the resources it has requested are held by other waiting processes. This situation is called ……

a) resources b) time c) management d) deadlock.

76) Deadlocks can be described more precisely in terms of a directed graph called……

a) system resource-allocation graph b) system waiting allocation graph
c) system graph d) deadlock resource allocation graph

77) All the following are ways we can deal with the deadlock problem in one of except

a) We can use a protocol to prevent or avoid deadlocks, ensuring that the system will *never* enter a deadlocked state.
b) We can allow the system to enter a deadlocked state, detect it, and recover.
c)We can ignore the problem altogether and pretend that deadlocks never occur in the system.
d) Restarting the system all over again.

78) If a system does not employ either a deadlock-prevention or a deadlock avoidance algorithm, then a deadlock situation may arise.

a) True b) False

79) One lock-order verifier, which works on BSD versions of UNIX such as FreeBSD, is known as

a) view b) verifier c) witness d) locker

80) A state is…… if the system can allocate resources to each process (up to its maximum) in some order and still avoid a deadlock.

a) well b) fine c) ok d) safe

CHAPTER 8

81) CPU fetches the instruction from memory according to the value of

a) program counter b) status register
c) instruction register d) program status word

82) A memory buffer used to accommodate a speed differential is called

a) stack pointer b) cache
c) accumulator d) disk buffer

83) Which one of the following is the address generated by CPU?

a) physical address b) absolute address
c) logical address d) none of the mentioned

84) Run time mapping from virtual to physical address is done by

a) memory management unit b) CPU
c) PCI d) none of the mentioned

85) 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

86) The address of a page table in memory is pointed by

a) stack pointer b) page table base register
c) page register d) program counter

87) Program always deals with

a) logical address b) absolute address
c) physical address d) relative address

88) The page table contains

a) base address of each page in physical memory b) page offset
c) page size d) none of the mentioned

89) 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

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

CHAPTER 9

91) Because of virtual memory, the memory can be shared among
a) processes
b) threads
c) instructions
d) none of the mentioned

92) The pager concerns with the
a) individual page of a process
b) entire process
c) entire thread
d) first page of a process

93) Address location in main memory, is referred to as
a) Logical address
b) Physical address
c) Static address
d) Block associative

94) A virtual-memory block is known as page, and a virtual-memory miss is called a
a) Page miss
b) Hit miss
c) Page fault
d) Memory fault

95) Main memory of a computer can act as a
a) Virtual memory
b) Main memory
c) Cache
d) Buffer

96) Virtual memory producing virtual-addresses, are translated by
a) Logical addresses
b) Local addresses
c)Physical addresses
d) All the above

97) At any instant it is possible to switch from one process to another, this exchange is called a
a) Process switch
b) Context switch
c) Swapping
d) Both a and b

98) Virtual memory is
a) An extremely large memory
b) An extremely large secondary memory
c) An illusion of extremely large main memory
d) An illusion of extremely large secondary memory

99. The pager concerns with the

a) individual page of a process
b) entire process
c) entire thread
d) first page of a process

100. _____ is the concept in which a process is copied into main memory from the secondary memory according to the requirement.

a) Paging
b) Demand paging
c) Segmentation
d) Swapping

CHAPTER 10

101) Which of the following is true about magnetic tapes?

(a) Can hold relatively small amount of data.
(b) The average time for accessing data on a magnetic tape is faster compared to magnetic disk.
(c) It is relatively permanent secondary storage device.
(d) Random access of data is faster as compared to magnetic disk and hence a better choice for secondary storage of data.
(e) Only stores text.

102) Modern magnetic disk drives are addressed as large one-dimensional arrays called?

(a) flips
(b) Logical blocks
(c) Storage channels
(d) Arbitrated loop
(e) Segments

103) Whenever a process needs I/O to or from the disk, it issues a system call to the operating system. The request specifies several pieces of information. Which of the following is not part of the information?

(a) Whether this operation is input or output.
(b) What the disk address for the transfer is.
(c) What the memory address for the transfer is.
(d) The next process to use the I/O after the current process in need.
(e) The efficiency of the operation to be performed.

104) In FCFC scheduling……

(a) The process with the highest execution time executes first.
(b) The process with the lowest execution time executes first.
(c) The first process to be loaded into memory executes first.
(d) The process with the earliest deadline
(e) The last process to be loaded into memory

105) SSTF stands for?

(a) Sudden Same Transfer First.
(b) Shortest-Seek-Time-First.
(c) Strongest-Seek-Time-First

(d) Safety Standard Transfer File
(e) Shortest-Seek-Term-First

106) Which of the following is not a disk write result?
(a) Successful completion
(b) Biased permission
(c) Partial failure
(d) Total failure
(e) None of the above

107) Disk drives are the major secondary storage I/O on most computers.
(a) True
(b) Partially true
(c) False
(d) Partially false
(e) None of the above

108) Request for I/O are generated by?
(a) The file system and certain protocols.
(b) He files system and the virtual memory system
(c) Algorithms
(d) External fragmentation
(e) Disk blocks and the hardware in use.

109) Which of the following best describes bit-level splitting?
(a) splitting the bits of each byte of data across multiple disks.
(b) splitting the bytes of each packet of across multiple disks
(c) splitting blocks of file across multiple disks
(d) splitting blocks of files across a single disk
(e) defining the importance of data storage

110) A variety of disk-organization techniques that are commonly used to address the performance and reliability of data storage is known as?
(a) Protocols
(b) Data splitting
(c) RAID
(d) Pools
(e) Sector slipping

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

a) cooperating process b) child process

c) parent process d) init process

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102. 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

103. 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

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

a) thread
b) pipe
c) semaphore
d) socket

105. A semaphore is a shared integer variable

a) that cannot drop below zero
b) that cannot be more than zero
c) that cannot drop below one
d) that cannot be more than one

106. Mutual exclusion can be provided by the

a) mutex locks
b) binary semaphores
c) both (a) and (b)
d) none of the mentioned

107. 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

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108. Process synchronization can be done on

a) hardware level

b) software level

c) both (a) and (b)

d) none of the mentioned

109. 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

110. 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