Operating System

Multiple Choice Question & Answers:-

01) 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

Answer:d

02) To access the services of operating system, the interface is provided by the

a) system calls

b) API

c) library

d) assembly instructions

Answer:a

03) 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

Answer:c

04) 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

Answer:d

05) The scheme used in the above question is known as _____ or _____.

a) sector sparing

b) forwarding

c) backwarding

d) sector utilization

Answer : a and b

06) By operating system, the resource management can be done via

a) time division multiplexing

b) space division multiplexing

c) both (a) and (b)

d) none of the mentioned

Answer:c

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

Answer:a

08) 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

Answer:a

09) Which one of the following is not a real time operating system?

a) VxWorks

b) Windows CE

c) RTLinux

d) Palm OS

Answer:d

10) The OS X has

a) monolithic kernel

b) hybrid kernel

c) microkernel

d) monolithic kernel with modules

Answer:b

11) The systems which allows only one process execution at a time, are called

a) uniprogramming systems

b) uniprocessing systems

c) unitasking systems

d) none of the mentioned

Answer:a

Explanation:Those systems which allows more than one process execution at a time, are called multiprogramming systems. Uniprocessing means only one processor.

12) 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

Answer:d

13) In Unix, Which system call creates the new process?

a) fork

b) create

c) new

d) none of the mentioned

Answer:a

14) A process can be terminated due to

a) normal exit

b) fatal error

c) killed by another process

d) all of the mentioned

Answer:d

15) 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

Answer:a

Explanation:When process is unable to run until some task has been completed,

the process is in blocked state and if process is using the CPU, it is in running state.

16) 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

Answer:b

17) 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

Answer:a

18) A process stack does not contain

a) function parameters

b) local variables

c) return addresses

d) PID of child process

Answer:d

19) Which system call returns the process identifier of a terminated child?

a) wait

b) exit

c) fork

d) get

Answer:a

20) 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

Answer:b

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

a) Code

b) Stack

c) Heap

d) Data

e) Program Counter

f) Process State

g) I/O status information

h) bootstrap program

Answer: h

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

a) Output

b) Throughput

c) Efficiency

d) Capacity

Answer: b

23) 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

Answer: d

24) Which of the following is not the state of a process ?

a) New

b) Old

c) Waiting

d) Running

e) Ready

f) Terminated

Answer: b

25) The Process Control Block is :

a) Process type variable

b) Data Structure

c) a secondary storage section

d) a Block in memory

Answer: b

26) The entry of all the PCBs of the current processes is in :

a) Process Register

b) Program Counter

c) Process Table

d) Process Unit

Answer: c

27) The degree of multi-programming is :

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

Answer: d

28) A single thread of control allows the process to perform :

a) only one task at a time

b) multiple tasks at a time

c) All of these

Answer: a

29) The objective of multi-programming is to : (choose two)

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) To maximize CPU utilization

Answer: a and d

30) Which of the following do not belong to queues for processes ?

a) Job Queue

b) PCB queue

c) Device Queue

d) Ready Queue

Answer: b

31) 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

Answer: a

32) When a process terminates : (Choose Two)

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

Answer: a and c

33) 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 these

Answer: a

34) 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

Answer: c

35) 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 these

Answer: c

36) 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 these

Answer: b

37) 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 these

Answer: c

38) The only state transition that is initiated by the user process itself is :

a) block

b) wakeup

c) dispatch

d) None of these

Answer: a

39) 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

Answer: b

40) In a multi-programming 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

Answer: c

41) 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

Answer: b

42) An unrecoverable error is known as _____.

a) hard error

b) tough error

c) soft error

d) None of these

Answer : a

43) Which of the following need not necessarily be saved on a context switch between processes ? (GATE CS 2000)

a) General purpose registers

b) Translation look-aside buffer

c) Program counter

d) All of these

Answer: b

44) Which of the following does not interrupt a running process ? (GATE CS 2001)

a) A device

b) Timer

c) Scheduler process

d) Power failure

Answer: c

45) Several processes access and manipulate the same data concurrently and the outcome of the execution depends on the particular order in which

the access takes place, is called a(n) ____.

a) Shared Memory Segments

b) Entry Section

c) Race condition

d) Process Synchronization

Answer: c

46) Which of the following state transitions is not possible ?

a) blocked to running

b) ready to running

c) blocked to ready

d) running to blocked

Answer: a

47) 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

Answer:a

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

Answer:b

49) 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

Answer:b

50) 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

Answer:a

51) 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

Answer:a

52) 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

Answer:b

53) Time quantum is defined in

a) shortest job scheduling algorithm

b) round robin scheduling algorithm

c) priority scheduling algorithm

d) multilevel queue scheduling algorithm

Answer:b

54) 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

Answer:d

55) 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

Answer:a

56) 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

Answer:b

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

57) What is the 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

Answer:a

58) Which of the following condition is required for 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

Answer:d

59) 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) both (a) and (b)

d) none of the mentioned

Answer:c

60) 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

Answer:a

61) 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

Answer:a

62) What is the drawback of banker's algorithm?

a) in advance processes rarely know that 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

Answer:d

63) For effective operating system, when to check for deadlock?

a) every time a resource request is made

b) at fixed time intervals

c) both (a) and (b)

d) none of the mentioned

Answer:c

64) A problem encountered in multitasking when a process is perpetually denied necessary resources is called

a) deadlock

b) starvation

c) inversion

d) aging

Answer:b

65) 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

Answer:a

66) 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

Answer:a

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

a) program counter

b) status register

c) instruction register

d) program status word

Answer:a

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

a) stack pointer

b) cache

c) accumulator

d) disk buffer

Answer:b

69) 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

Answer:c

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

a) memory management unit

b) CPU

c) PCI

d) none of the mentioned

Answer:a

71) 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

Answer:b

72) 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

Answer:b

73) Program always deals with

a) logical address

b) absolute address

c) physical address

d) relative address

Answer:a

74) The page table contains

a) base address of each page in physical memory

b) page offset

c) page size

d) none of the mentioned

Answer:a

75) 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

Answer:c

76) Operating System maintains the page table for

a) each process

b) each thread

c) each instruction

d) each address

Answer:a

77) In segmentation, each address is specified by :

a) a segment number

b) an offset

c) a value

d) a key

Answer: a and b

78) In paging the user provides only _____, which is partitioned by the hardware into _____ and _____.

a) one address, page number, offset

b) one offset, page number, address

c) page number, offset, address

d) None of these

Answer: a

79) Each entry in a segment table has a :

a) segment base

b) segment peak

c) segment limit

d) segment value

Answer: a and c

80) The segment base contains the :

a) starting logical address of the process

b) starting physical address of the segment in memory

c) segment length

d) None of these

Answer: b

81) The segment limit contains the :

a) starting logical address of the process

b) starting physical address of the segment in memory

c) segment length

d) None of these

Answer: c

82) The offset ‘d’ of the logical address must be :

a) greater than segment limit

b) between 0 and segment limit

c) between 0 and the segment number

d) greater than the segment number

Answer: b

83) If the offset is legal :

a) it is used as a physical memory address itself

b) it is subtracted from the segment base to produce the physical memory address

c) it is added to the segment base to produce the physical memory address

d) None of these

Answer: a

84) When the entries in the segment tables of two different processes point to the same physical location :

a) the segments are invalid

b) the processes get blocked

c) segments are shared

d) All of these

Answer: c

85) The protection bit is 0/1 based on : (choose all that apply)

a) write only

b) read only

c) read – write

d) None of these

Answer: b and c

86) If there are 32 segments, each of size 1Kb, then the logical address should have :

a) 13 bits

b) 14 bits

c) 15 bits

d) 16 bits

Answer: a

Explanation: To specify a particular segment, 5 bits are required. To select a particular byte after selecting a page,

10 more bits are required. Hence 15 bits are required.

87) Consider a computer with 8 Mbytes of main memory and a 128 K cache. The cache block size is 4 K. It uses a direct mapping scheme for cache management. How many different main memory blocks can map onto a given physical cache block ?

a) 2048

b) 256

c) 64

d) 8

Answer: c

88) A multilevel page table is preferred in comparison to a single level page table for translating virtual address to physical address because :

a) it reduces the memory access time to read or write a memory location

b) it helps to reduce the size of page table needed to implement the virtual address space of a process

c) it is required by the translation look aside buffer

d) it helps to reduce the number of page faults in page replacement algorithms

Answer: b

89) The three general methods for delivering content from a server to a client across a network are :

a) unicasting

b) duplex-casting

c) broadcasting

d) multicasting

Answer : a, c, d

90) Unicasting delivers the content to :

a) a single client

b) all clients, regardless whether they want the content or not

c) a group of receivers who indicate they wish to receive the content

d) None of these

Answer : a

91) Broadcasting delivers the content to :

a) a single client

b) all clients, regardless whether they want the content or not

c) a group of receivers who indicate they wish to receive the content

d) None of these

Answer : b

92) Multicasting delivers the content to :

a) a single client

b) all clients, regardless whether they want the content or not

c) a group of receivers who indicate they wish to receive the content

d) None of these

Answer : c

93) RTSP stands for :

a) Real Time Streaming Policy

b) Real Time Streaming Protocol

c) Real Time Systems Protocol

d) Read Time Streaming Policy

Answer : b

94) HTTP is _____. (choose two)

a) a stateful protocol

b) a stateless protocol

c) a protocol that maintains the status of its connection with the client

d) a protocol that does not maintain the status of its connection with the client

Answer : b and d

95) RTSP includes the following states :

a) SETUP

b) PLAY

c) PAUSE

d) STOP

e) TEARDOWN

f) REPLAY

g) All of these

Answer : a, b, c and e

96) In the SETUP state :

a) the server is setup

b) the client is setup

c) the server allocates resources for the client session

d) the client sends requests to the server

Answer : c

97) In the TEARDOWN state :

a) the server breaks down the connection and releases the resources allocated for the session

b) the client breaks down the connection and releases the resources allocated for the session

c) the system crashes

d) None of these

Answer : a

98) RTP stands for :

a) real time protocol

b) real time transmission control protocol

c) real time transmission protocol

d) real time transport protocol

Answer : d

99) The problem with unicast delivery is that the :

a) memory allocation is difficult

b) server must establish a seperate unicast session for each client

c) the routers must support unicasting

d) the clients must be close to the server

Answer : b

100) The difficulty with multicasting from a practical point of view is : (choose all that apply)

a) memory allocation is difficult

b) server must establish a seperate unicast session for each client

c) the routers must support multicasting

d) the clients must be close to the server

Answer : c and d

101) To let a client have random access to a media stream :

a) the protocol used must not be stateless

b) the server must support download

c) the stream should give access rights to the client

d) All of these

Answer : a

102) The model in which one kernel thread is mapped to many user-level threads is called :

a) Many to One model

b) One to Many model

c) Many to Many model

d) One to One model

Answer: a

103) The model in which one user-level thread is mapped to many kernel level threads is called :

a) Many to One model

b) One to Many model

c) Many to Many model

d) One to One model

Answer: b

104) In the Many to One model, if a thread makes a blocking system call :

a) the entire process will be blocked

b) a part of the process will stay blocked, with the rest running

c) the entire process will run

d) None of these

Answer: a

105) In the Many to One model, multiple threads are unable to run in parallel on multiprocessors because :

a) only one thread can access the kernel at a time

b) many user threads have access to just one kernel thread

c) there is only one kernel thread

d) None of these

Answer: a

106) The One to One model allows :

a) increased concurrency

b) decreased concurrency

c) increased or decreased concurrency

d) concurrency equivalent to other models

Answer: a

107) In the One to One model when a thread makes a blocking system call :

a) other threads are strictly prohibited from running

b) other threads are allowed to run

c) other threads only from other processes are allowed to run

d) None of these

Answer: b

108) Which of the following is the drawback of the One to One Model ?

a) increased concurrency provided by this model

b) decreased concurrency provided by this model

c) creating so many threads at once can crash the system

d) creating a user thread requires creating the corresponding kernel thread

Answer: d

109) When is the Many to One model at an advantage ?

a) When the program does not need multi-threading

b) When the program has to be multi-threaded

c) When there is a single processor

d) None of these

Answer: a

110) In the Many to Many model true concurrency cannot be gained because :

a) the kernel can schedule only one thread at a time

b) there are too many threads to handle

c) it is hard to map threads with each other

d) None of these

Answer: a

111) In the Many to Many model when a thread performs a blocking system call :

a) other threads are strictly prohibited from running

b) other threads are allowed to run

c) other threads only from other processes are allowed to run

d) None of these

Answer: b

112) The process of dividing a disk into sectors that the disk controller can read and write, before a disk can store data is known as : (choose all that apply)

a) partitioning

b) swap space creation

c) low-level formatting

d) physical formatting

Answer : c and d

113) The data structue for a sector typically contains : (choose all that apply)

a) header

b) data area

c) trailer

d) main section

Answer : a, b and c

114) The header and trailer of a sector contain information used by the disk controller such as _____ and _____.

a) main section

b) error correcting codes (ECC)

c) sector number

d) disk identifier

Answer : b and c

115) The two steps the operating system takes to use a disk to hold its files are _____ and _____.

a) partitioning

b) swap space creation

c) caching

d) logical formatting

Answer : a and d

116) The _____ program initializes all aspects of the system, from CPU registers to device controllers and the contents of main memory,

and then starts the operating system.

a) main

b) bootloader

c) bootstrap

d) ROM

Answer : c

117) For most computers, the bootstrap is stored in ____.

a) RAM

b) ROM

c) cache

d) tertiary storage

Answer : b

118) A disk that has a boot partition is called a _____. (choose all that apply)

a) start disk

b) system disk

c) boot disk

d) All of these

Answer : b and c

119) Defective sectors on disks are often known as _____.

a) good blocks

b) destroyed blocks

c) bad blocks

d) None of these

Answer : c

120) In SCSI disks used in high end PCs, the controller maintains a list of _____ on the disk.

The disk is initialized during _____ formatting which sets aside spare sectors not visible to the operating system.

a) destroyed blocks, high level formatting

b) bad blocks, partitioning

c) bad blocks, low level formatting

d) destroyed blocks, partitioning

Answer : c