DRONACHARYA GROUP OF INSTITUTIONS, GREATER NOIDA

CSE/IT/CSIT

OBJECTIVE TYPE QUESTION BANK FOR AKTU END SEMESTER EXAM

SESSION 2020-21

SUBJECT NAME: Operating Systems

SUBJECT CODE: KCS401

UNIT 1

1. 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

2. Distributed systems should

(a) Meet prescribed time constraints

(b) Aim better resource sharing

(c) Aim better system utilization

(d) Aim low system overhead

3. Which of the following applications are well suited for batch processing?

i. Process control

ii. Video game control

iii. Preparing pay bills of employees

iv. Preparing mailing addresses

(a) ii and iii only

(b) iii and iv only

(c) i, ii and iv only

(d) All of the above

4. Which of the following is not a function of operating system?

(a) Process management

(b) Device management

(c) Network management

(d) Power management

5. When more than one process are running concurrently on a system

(a) Batched system

(b) Real-time system

(c) Multi programming system

(d) Multiprocessing system

6. Consider the following statements:

S1: The OS is designed to maximize the resource utilization

S2: The control program manages the system programs. Which of the above statements is/are true?

(a) S1 is true S2 is false

(b) S2 is true and S1 is false

(c) Both S1 and S2 are true

(d) Both S1 and S2 are false

7. Kernel is

(a) Considered as the critical part of the operating system

(b) The software which monitors the operating system.

(c) The set of primitive functions upon which the rest of operating system functions are built up.

(d) None of the above

8. Supervisor call

(a) Is a call made by the supervisor of the system.

(b) Is a call with control functions.

(c) Are privileged calls that are used to perform resource management functions, which are controlled by the operating system.

(d) Is a call made by someone working in root directory

9. Dual mode of operating system has

(a) 1 mode

(b) 2 modes

(c) 3 modes

(d) 4 modes

10. Logical extension of multiprogramming operating system is

(a) time sharing

(b) multi-tasking

(c) single programing

(d) both a and b

11. Running multiple programs at the same time is called:

(a) Multitasking
(b) Foreground tasking
(c) Single tasking
(d) Symmetric

12. A system program that sets up an executable program in main memory ready for execution is

(a) assembler
(b) linker
(c) loader
(d) compiler

13. A_____is a collection of processors that do not share memory, peripheral devices,or a clock.

(a) Computer system

(b) distributed system

(c) network

(d) None of the above

14. Which of the following Is not a part of the operating system?

(a) Input/output control program

(b) Job control program

(c) Supervisor

(d) Performance monitor

15. What is the name of the operating system that reads and reacts in terms of actual time?

(a) Real time system

(b) Time sharing system

(c) Quick response system

(d) Batch system

16. Card reader is an example of

(a) Multi-tasking

(b) Multiprogramming

(c) Batch operating system

(d) None of these

17. The Operating System was first introduced, the primary goal was mainly to ___

(a) Share memory

(b) User friendly

(c) Optimize resources

(d) None of the given

18. To avoid the delay due to manual operation____was introduced.

(a) Assistant

(b) Efficient

(c) Job sequencing

(d) Manual

19. A set of extended instructions providing an interface between the Operating System and the user programs, is called a _____

(a) Machine call

(b) System call

(c) Instruction call

(d) Service call

20. The multi-user Operating System is based on the concept of _____

(a) Time-losing

(b) Time-spooling

(c) Time-gaining

(d) Time-sharing

21. _____software helps the user to do his/her work.

(a) Computer

(b) Utility

(c) System

(d) Application

22. Software that measures, monitors, analyses and controls real-word events is called

(a) System software

(b) Real-time software

(c) Business software

(d) Scientific software

23. The capabilities of the operating system is to enable two or more than two programs to execute simultaneously in a single computer system by a single processor is

(a) Multi-execution

(b) Multi-programming

(c) Multi-tasking

(d) Multi-processing

24. Characteristics of an operating system is/are

(a) Error recovery

(b) Resource management

(c) Memory management

(d) All of the above

25. What is the standard set of functions through which application interacts with the Kernel?

(a) Compilers

(b) Utility programs

(c) Kernel code

(d) System libraries

26. The operating system that is self contained in a device and resident in the ROM is known as

(a) Multi processor operating system

(b) Embedded operating system

(c) Real time operating system

(d) Batch operating system

27. It refers to the process of managing various devices connected to the computer. So here “it” refers to

(a) Memory management

(b) File management

(c) Error management

(d) Device management

28. Which of the following is not an advantage of multiprogramming?

(a) Ability to assign priorities to jobs

(b) Decreased operating system overhead

(c) Shorter response time

(d) Increased throughout

29. Restrictive type of real time system is called

(a) Hard real time system

(b) Soft real time system

(c) Both (a) and (b)

(d) None of these

30. What else is a command interpreter called?

(a) prompt

(b) kernel

(c) shell

(d) command

31. Who provides the interface to access the services of the operating system?

(a) API

(b) System call

(c) Library

(d) Assembly instruction

32. Which of the following operating system runs on the server?

(a) Batch OS

(b) Distributed OS

(c) Real-time OS

(d) Network OS

33. Kernel mode of the operating system is also called

(a) user mode

(b) system mode

(c) supervisor mode

(d) both a and b

34. A bit that selects the mode of the operating system is called

(a) kernel bit

(b) user bit

(c) mode bit

(d) system bit

35. First process that is executed by operating system during booting is

(a) init

(b) initl

(c) mint

(d) start

36. ___is a compromise mode between Shut Down and Sleep mode because it does not consume power and remembers the current state of your desktop

(a) Shut Down
(b) Restart
(c) Sleep
(d) Hibernate

37. Which of the following are true?

(a) Re-entrant procedures can be called recursively.
(b) Re-entrant procedures cannot be called recursively.
(c) A re-entrant procedure can be called even before the procedure has not returned from its previous call.
(d) Both (a) and (c) are true

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

(a) I/O operation
(b) Compilation
(c) Accounting
(d) Protection

39. A system program that combines the separately compiled modules of a program into a form suitable for execution

(a) assembler
(b) linking loader
(c) cross compiler
(d) load and go

40. Supervisor state is

(a) never used
(b) entered by programs when they enter the processor
(c) required to perform any I/O
(d) only allowed to the operating system

41. Which of the following functions is(are) performed by the loader

(a) allocate space in memory for the programs and resolve symbolic references between object decks
(b) adjust all address dependent locations, such as address constants, to correspond to the allocated space.
(c) physically place the machine instructions and data into memory.
(d) All of the above

42. All of the following are tasks performed by the operating system except

(a) Managing hardware on the computer
(b) Controlling the access that application program has to the CPU
(c) Performing housekeeping task like file compression and disk defragmentation
(d) Provides an interface for user to interact with computer

43. The ability of an operating system to control the activities of multiple program at the same time is called

(a) Multitasking
(b) Multiprocessing
(c) Multioperating
(d) Multipaging

44. 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 cannot be loaded in running operating system
(d) kernel remains in the memory during the entire computer session

45. The main function of the command interpreter is:

(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

46. 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

47. If a process fails, most operating system writes the error information to a:

(a) log file
(b) another running process
(c) new file
(d) none of the mentioned

48. Which of the following is a good practice?

(a) Give full permission for remote transferring
(b) Grant read only permission
(c) Grant limited permission to specified account
(d) Give both read and write permission but not execute.

49. Which of the following are forms of malicious attack?

(a) Theft of information
(b) Modification of data
(c) Wiping of information
(d) All of the mentioned

50. The OS X has:

(a) monolithic kernel
(b) hybrid kernel
(c) microkernel
(d) monolithic kernel with modules

UNIT 2

1. Critical region is

(a) A part of the operating system which is not allowed to be accessed by any process.

(b) A set of instructions that access common shared resource which exclude one another in time.

(c) The portion of the main memory which can be accessed only by one process at a time.

(d) None of these

2. At a particular time, the value of a counting semaphore is 10. It will become 7 after

1. 3 V operations

2. 3 P operations

3. 5 V operations and 2 P operations

4. 13 P operations and 10 V operations

(a) 1 and 2

(b) 2 and 3

(c) 2 and 4

(d) 4 only

5. Semaphores are used to solve the problem of

1 – Race condition

2. Process synchronization

3. Mutual exclusion

(a) 1 and 2

(b) 2 and 3

(c) All of the above

(d) None of the above

6. Mutual exclusion problem occurs

(a) between two disioint processes that do not interact

(b) Among processes that share resources.

(c) Among processes that do not use the same resource.

(d) None of the above

7. Peterson's algorithm is the solution of which of the following problem.

(a) Deadlock

(b) Mutual exclusion

(c) Trashing

(d) Paging

8. Piece of code that only one thread can execute at a time is called

(a) Mutual Exclusion
(b) Critical Section
(c) Synchronization
(d) All of them

9. A critical section is a program segment

(a) Which must be enclosed by a pair of semaphore operations, P and V

(b) Where shared resources are accessed

(c) Which avoids deadlocks

(d) Which should run in a certain specified amount of time

10. Which conditions must be satisfied to solve a critical section problem?

(a) Bounded Waiting

(b) Progress

(c) Mutual Exclusion

(d) All of these.

11. Which of the following method is used to prevent threads or processes from accessing a single resource?

(a) PCB

(b) Semaphore

(c) Job Scheduler

(d) Non-Contiguous Memory Allocation

12. Which of the following mechanisms is a locking mechanism?

(a) Semaphore

(b) PCB

(c) Mutex

(d) Binary Semaphore

13. An executed program of the computer system is called?

(a) trap

(b) process

(c) program

(d) interrupt

14. Concurrent processes are processes that

(a) overlap in time
(b) do not overlap in time
(c) are executed by a processor at the same time
(d) none of the above

15. At a particular time of computation, the value of a counting semaphore is 7. Then 20 P operations and 'x' V operations were completed on this semaphore. If the final value of the semaphore is 5. x will be

(a) 15
(b) 22
(c) 18
(d) 14

16. To avoid the race condition, the number of processes that may be simultaneously inside their critical section is

(a) 8
(b) **1**
(c) 16
(d) 0

17. Fork is

(a) the dispatching of a task
(b) the creation of a new job
(c) the creation of a new process
(d) increasing the priority of a task

18. Interprocess communication

(a) is required for all processes
(b) is usually done via disk drives
(c) is never necessary,
(d) allows processes to synchronize activity

19. Consider the following statements with respect to user-level threads and kernel supported threads
i. context switch is faster with kernel-supported threads
ii. for user-level threads, a system call can block the entire process
iii. Kernel supported threads can be scheduled independently
iv. User level threads are transparent to the kernel

Which of the above statements are true?

(a) (ii), (iii) and (iv) only
(b) (ii) and (iii) only
(c) (i) and (iii) only
(d) (i) and (ii) only

20. A process executes the code

```
fork ();
fork ();
fork ();
```

The total number of child processes created is

(a) 3
(b) 4

(c) **7**
(d) 8

21. Fork is

(a) the dispatching of a task
(b) the creation of a new job
(c) the creation of a new process
(d) increasing the priority of a task

22. Which one of the following is not shared by threads?

(a) program counter
(b) stack
(c) both (a) and (b)
(d) none of the mentioned

23. A process can be:

(a) single threaded
(b) multithreaded
(c) both (a) and (b)
(d) none of the mentioned

24. 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) any other thread can not read from that file
(d) all of the mentioned

25. The time required to create a new thread in an existing process is:

(a) greater than the time required to create a new process
(b) less than the time required to create a new process
(c) equal to the time required to create a new process
(d) none of the mentioned

26. When the event for which a thread is blocked occurs,

(a) thread moves to the ready queue
(b) thread remains blocked
(c) thread completes
(d) a new thread is provided

27. 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

28. The register context and stacks of a thread are deallocated when the thread:

(a) terminated
(b) blocks
(c) unblocks
(d) spawns

29. Thread synchronization is required because:

(a) all threads of a process share the same address space
(b) all threads of a process share the same global variables
(c) all threads of a process can share the same files
(d) all of the mentioned

30. A thread is also called:

(a) Light Weight Process(LWP)
(b) Heavy Weight Process(HWP)
(c) process
(d) None of these

31. A thread shares its resources (like data section, code section, open files, signals) with:

(a) other process similar to the one that the thread belongs to
(b) other threads that belong to similar processes
(c) other threads that belong to the same process
(d) All of these

32. A process having multiple threads of control implies:

(a) it can do more than one task at a time
(b) it can do only one task at a time, but much faster
(c) it has to use only one thread per process
(d) None of these

33. Multithreading an interactive program will increase responsiveness to the user by:

(a) continuing to run even if a part of it is blocked
(b) waiting for one part to finish before the other begins
(c) asking the user to decide the order of multithreading
(d) None of these

34. The kernel is_____of user threads.

(a) a part of
(b) the creator of
(c) unaware of

(d) aware of

35. If the kernel is single threaded, then any user level thread performing a blocking system call will:

(a) cause the entire process to run along with the other threads
(b) cause the thread to block with the other threads running
(c) cause the entire process to block even if the other threads are available to run
(d) None of these

36. 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 these

37. If a kernel thread performs a blocking system call, _____.

(a) the kernel can schedule another thread in the application for execution.
(b) the kernel cannot schedule another thread in the same application for execution.
(c) the kernel must schedule another thread of a different application for execution.
(d) the kernel must schedule another thread of the same application on a different processor.

38. Which of the following is FALSE ?

(a) Context switch time is longer for kernel level threads than for user level threads
(b) User level threads do not need any hardware support
(c) Related kernel level threads can be scheduled on different processors in a multiprocessor system
(d) Blocking one kernel level thread blocks all other related threads

39. 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

40. 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

41. 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

42. 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

43. 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

44. When one thread immediately terminates the target thread, it is called:

(a) Asynchronous cancellation
(b) Systematic cancellation
(c) Sudden Termination
(d) Deferred cancellation

45. The TestAndSet instruction is executed:

(a) after a particular process
(b) periodically
(c) atomically
(d) None of these

46. 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 these

47. The main disadvantage of spinlocks is that:

(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

48. 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 these

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

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

50. Spinlocks are intended to provide_____only.

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

UNIT 3

1. 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

2. Suppose that a process is in 'BLOCKED' state waiting for some 1/O service. When the service is completed, it goes to the

(a) RUNNING state

(b) READY state

(c) SUSPENDED state

(d) TERMINATED state

Consider a set of 5 processes whose arrival time, CPU time needed and the priority are given below:

Process priority	Arrival Time (in ms)	CPU Time Needed (in ms)	Priority
P_1	0	10	5
P_2	0	5	2
P_3	2	3	1
P_4	5	20	4
P_5	10	2	3

Note: Smaller the number, higher the priority.

3. If the CPU scheduling policy is FCFS, the average waiting time will be

(a) 12.8 ms

(b) 8 ms

(c) 16 ms

(d) None of the above

4. If the CPU scheduling policy is SJF, the average waiting time (without pre-emption) will be

(a) 12.8 ms

(b) 6.8 ms

(c) 17 ms

(d) None of the above

5. If the CPU scheduling policy is SJF with preemption, the average waiting time will be

(a) 8 ms

(b) 14 ms

(c) 5.6 ms

(d) None of the above

6. If the CPU scheduling policy is priority scheduling with preemption, the average waiting time will be

(a) 19 ms

(b) 7.6 ms

(c) 8 ms

(d) None of the above

7. A system with multiple CPU's is called

(a) Time sharing system

(b) Desktop system

(c) Client-server system

(d) Parallel system

8. Process Control Block (PCB) of all running process reside in which of the following?

(a) RAM

(b) Hard disk

(c) Cache

(d) None of these

9. If a system contains 'n' processors and 'n' processes then what will be maximum and minimum processes in running state respectively

(a) n, n

(b) n, o

(c) n^2, o

(d) n^2, n^2

10. Match List-I with List-Il select the correct answer using the codes given below the lists:

List-1

A. Run → ready

B. Run → blocked

C. Blocked → run

D. Run → terminated

List-II

1. Not possible

2. When a process terminates itself

3. When a process time quantum expires

4. When a process issues an input/output request Codes:

(a) 1 4 3 2

(b) 2 1 3 4

(c) 3 4 1 2

(d) 1 4 3 2

11. Starvation can be avoided by which of the following statements:

1. By using shortest job first resource allocation policy.

2. By using first-come, first serve resource allocation policy.

(a) 1 only

(b) 2 only

(c) 1 and 2 only

(d) None of the above

12. Suppose a system contains n processes and system uses the round robin algorithm for CPU scheduling then which data structure is best suited ready queue of the processes.

(a) Stack

(b) Queue

(c) Circular queue

(d) Tree

13. If a system contains CPU bound processes then which of the following scheduling algorithm produces maximum efficiency of the CPU.

(a) FIFO

(b) Round robin

(c) SJF

(d) Priority

14. The time interval between the time of submission of a process to the time of completion of a process is known as which of the following?

(a) Waiting time

(b) Response time

(c) Turn around time

(d) None of these

15. Dijkstra's banking algorithm in an operating system performs

(a) Deadlock avoidance

(b) Deadlock recovery

(c) Mutual exclusion

(d) Context switching

16. Necessary conditions for deadlock are

(a) Non-preemption and circular wait

(b) Mutual exclusion and partial allocation

(c) Both (a) and (b)

(d) None of the above

17. Which of the following statements is not true?

(a) Deadlock can never occur if resources can be shared by competing processes.

(b) Deadlock can never occur if resources must be requested in the same order by processes.

(c) The Banker's algorithm for avoiding deadlock requires knowing resource requirements in advance

(d) If the resource allocation graph depicts a cycle then deadlock has certainly occured.

18. Suppose we have a system in which processes is in hold and wait condition then which of the following approach prevent the deadlock.

(a) Request all resources initially

(b) Spool everything

(c) Take resources away

(d) Order resources numerically

19. An operating system makes use of Banker's algorithm to allocate 12 printers. Printers will be allocated to a process requesting them only if there are enough available printers to allow it to run to completion. User 1 using 7 printers and will need at most a total of 10 printers. User 2 is using 1 printer and will need at most 4 printers. User 3 is using 2 printers and will need at most 4 printers. Each user is currently requesting 1 more printer. Which of the following is true?

(a) The operating system will grant a printer to User 1 only.

(b) The operating system will grant a printer to User 2 only.

(c) The operating system will grant a printer to User 3 only.

(d) The operating system will not grant any more printers until some are relinquished.

20. A state is safe if the system can allocate resources to each process (up to its maximum) in some order and still avoid deadlock, which of the following is/are true

1. Deadlocked state is unsafe.

2. Unsafe state may lead to a deadlock situation.

3. Unsafe state must lead to a deadlock situation.

4. Deadlock state is a subset of unsafe state.

(a) 1, 2 and 3

(b) 1 and 2 only

(c) 1, 3 and 4

(d) 1, 2 and 4

21. An operating system implements a policy that requires a process to release all resources before making a request for another resource.

(a) Both starvation and deadlock can occur

(b) Starvation can occur but deadlock cannot occur

(c) Starvation cannot occur but deadlock can occur

(d) Neither starvation nor deadlock can occur

22. Which one of the following can block the running process?

(a) Read

(b) Down

(c) Fork

(d) All of the above

23. A program in execution is called

(a) A Paging
(b) A Process
(c) A virtual memory
(d) A Demand Page

24. Which scheduler selects which processes should be brought into the ready queue?

(a) Real-term
(b) Long-term
(c) Mid-term
(d) Short-term

25. FIFO scheduling is

(a) Fair-share scheduling

(b) Deadline scheduling

(c) Non-preemptive scheduling

(d) Preemptive scheduling

26. Context switching is part of

(a) Interrupt servicing

(b) Interrupt handling

(c) Polling

(d) Spooling

27. The allocation of processors by process management is also known as the CPU ____

(a) Managing

(b) Processing

(c) Planning

(d) Scheduling

28. Scheduling is

(a) the same regardless of the purpose of the system

(b) quite simple to implement, even on large mainframes

(c) unrelated to performance considerations

(d) allowing job to use the processor

29. Round robin is a

(a) Kind of magnetic drum

(b) Memory allocation policy

(c) Process scheduling policy

(d) Process synchronization policy

30. A process having multiple threads of control implies

(a) Only one task at a time, but much faster

(b) More than one task at a time

(c) Only one thread per process to use

(d) All of the above

31. Multithreading on a multi CPU machine

(a) can increase or decrease the concurrency

(b) doesn’t affected the concurrency

(c) decreases concurrency

(d) increases concurrency

32. Spooling is most beneficial in multi-programming environment where

(a) There is limited primary memory and need for secondary memory

(b) Jobs are evenly divided as I/O bound and CPU bound

(c) Most jobs are I/O bound

(d) Most-jobs are CPU-bound

33. When a interrupt occurs, an operating system

(a) May change state of interrupted process to blocked and schedule another process

(b) Always resumes execution of interrupted process after processing the interrupt

(c) Always changes state of interrupted process after processing the interrupt

(d) Ignores the interrupt

34. The state transition initiated by the user process itself in an operating system is

(a) Timer run out

(b) Wake up

(c) Dispatch

(d) Block

35. An operating system contains 3 user processes each requiring 2 units of resource R. The minimum number of units of R such that no deadlocks will ever arise is

(a) 3

(b) **4**

(c) 5

(d) 6

36. A computer has six tape drives, with n processes competing for them. Each process may need two drives. What is the maximum value of n for the systems to be deadlock free?

(a) 3

(b) **4**

(c) 5

(d) 6

37. Which of the following is a condition that causes deadlock?

(a) Mutual exclusion

(b) Hold and wait

(c) Circular wait

(d) No preemption

(e) All of these

38. Where are placed the list of processes that are prepared to be executed and waiting?

(a) Job queue

(b) Ready queue

(c) Execution queue

(d) Process queue

39. Who among the following can block the running process?

(a) Fork

(b) Read

(c) Down

(d) All of these

40. Which of the following component does not belong to PCB (Process Control Block)?

(a) CPU registers

(b) CPU scheduling information

(c) Operating System information

(d) Accounting information

41. The PCB is identified by_____.

(a) Real-Number

(b) Binary Number

(c) Store block

(d) Integer Process ID

42. ISR is the interrupt program that stands for?

(a) interrupt software routine

(b) internally service routine

(c) internal service routine

(d) interrupt service routine

43. What is dispatch latency?

(a) The time taken by the dispatcher to stop one process and start another
(b) The time taken by the processor to write a file into disk
(c) The whole time taken by all processor
(d) None of Above

44. When a thread waits indefinitely for some resource, but other threads are actually using it is called

(a) Starvation
(b) Demand Paging
(c) Segmentation
(d) None of them

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

(a) when it requests (I/O)
(b) to allow starving processes to run
(c) before the CPU time slice expires
(d) none of the above

46. In Round Robin CPU scheduling, as the time quantum is increased, the average turn around

(a) remains constant
(b) varies irregularly
(c) increases
(d) decrease

47. With a single resource, deadlock occurs

(a) if there are only two processes competing for that resource
(b) if there is a single process competing for that resource
(c) if there are more than two processes competing for that resource
(d) none of the above

48. In which of the following scheduling policies does context switching never take place?

(a) Round-robin
(b) Shortest job first
(c) First-cum-first-served
(d) Both (b) and (c)

49. The necessary conditions needed before deadlock can occur?

(a) No Mutual Exclusion, Hold and wait, Preemption, Circular Wait
(b) Mutual Exclusion, No Hold and wait, Preemption, Circular Wait

(c) Mutual Exclusion, Hold and wait, No Preemption, Circular Wait
(d) Mutual Exclusion, Hold and wait, Preemption, No Circular Wait

50. Which of the following is NOT a valid deadlock prevention scheme?

(a) Release all resources before requesting a new resource
(b) Number the resources uniquely and never request a lower numbered resource than the last one requested.
(c) Never request a resource after releasing any resource
(d) Request and all required resources be allocated before execution.

UNIT 4

1. Virtual memory is

(a) An extremely large main memory.

(b) A extremely large secondary memory

(c) An illusion of an extremely large memory

(d) A type of memory used in super computers

2. Spatial locality refers to the property that once a location is referenced

(a) It will not be referenced again

(b) It will be referenced again

(c) A nearby location will be referenced soon

(d) None of the above

3. Page fault occurs when

(a) The page is corrupted by application software

(b) A page is in main memory

(c) The page is not in main memory

(d) The tries to divide a number by 0

4. Fragmentation is

(a) Dividing the secondary memory into equal sized fragments

(b) Dividing the main memory into equal-size fragments

(c) Fragments of memory words used in a page

(d) Fragments of memory words unused in a page

5. The size of virtual memory is based on?

(a) CPU
(b) Data Bus

(c) RAM

(d) Address Bus

6. If page size increases then internal fragmentation also?

(a) Increases

(b) Decreases

(c) Remains constant

(d) None of the above

7. Which of the following memory unit that processor can access more rapidly

(a) Main Memory
(b) Virtual Memory
(c) Cache memory
(d) Read Only Memory

8. _____may be the first elementary Operating System.

(a) Resident System

(b) Resident Monitor

(c) Resident Operator

(d) Resident Computer

9. User___is divided into many partitions to accommodate various jobs.

(a) File

(b) Data

(c) Memory

(d) Program

10. Thrashing

(a) Can be caused by poor paging algorithms

(b) Always occur on large computers

(c) Can always be avoided by swapping

(d) Is a natural consequence of virtual memory system

11. Dirty bit for a page in a page table

(a) Allows only read on a page

(b) Helps maintain LRU information

(c) Helps avoid unnecessary writes on a paging device

(d) None of these

12. If a page number is not found in the translation lookaside buffer, then it is known as a?

(a) Translation Lookaside Buffer miss

(b) Buffer miss

(c) Translation Lookaside Buffer hit

(d) All of the mentioned

13. What type of memory stores data in a swap file on a hard drive?

(a) Secondary memory

(b) Virtual memory

(c) Low memory

(d) RAM

14. What is the paging in the operating system?

(a) Memory management scheme

(b) Network management scheme

(c) Internet management scheme

(d) None of the these

15. Buffer is a_____.

(a) Permanent area

(b) Temporary area

(c) Small area

(d) Large area

16. Which of the following statements is correct about virtual memory?

(a) It is a combination of the logical-memory and physical-memory

(b) It is a separation of user logical memory and physical memory

(c) It is a virtual network memory

(d) None of these

17. COW stands for _____

(a) Compress of write memory

(b) Copy overwrite

(c) Compress overwrites

(d) Computer of world

18. All of the following are TRUE regarding virtual memory EXCEPT

(a) Any amount of RAM can be allocated to virtual memory
(b) The setting for the amount of hard disk drive space to allocate virtual memory can be manually change
(c) This temporary storage is called the swap file or page file
(d) Virtual memory is the physical space of the hard drive

19. Overlay is

(a) a specific memory location
(b) a part of an operating system
(c) overloading the system with many user files
(d) a single contiguous memory that was used in the olden days for running large programs by swapping.

20. The first-fit and the worst-fit algorithm can be used for

(a) linked allocation of memory
(b) indexed allocation of memory
(c) contiguous allocation of memory
(d) all of the above

21. In a paged memory, the page hit ratio is 0.35. The time required to access a page in secondary memory is equal to 100 ns. The time required to access a page in primary memory is 10 ns. The average time required to access a page is

(a) 3.0 ns
(b) 68.0 ns
(c) 68.5 ns
(d) 78.5 ns

22. Which of the following is true?

(a) The linkage editor links object modules during compiling or assembling.
(b) The linkage editor links object modules and resolves external references between them before loading.
(c) The linkage editor resolves external references between the object modules during execution time.
(d) The linkage editor is used to edit programs which have to be later linked together.

23. If the property of locality of reference is well pronounced in a program

(a) the number of page faults will be more
(b) the number of page faults will be less
(c) execution will be faster
(d) Both (b) and (c)

24. The page replacement policy that sometimes leads to more page faults when the size of the memory is increased is

(a) FIFO
(b) LRU
(c) no such policy exists
(d) none of the above

25. The LRU algorithm

(a) pages out pages that have been used recently
(b) pages out pages that have not been used recently
(c) pages out pages that have been least used recently
(d) pages out the first page in a given area

26. The principle of locality of reference justifies the use of

(a) reenterable
(b) non reusable
(c) virtual memory
(d) cache memory

27. In virtual memory systems, Dynamic address translation

(a) is the hardware necessary to implement paging
(b) stores pages at a specific location on disk
(c) is useless when swapping is used
(d) is part of the operating system paging algorithm

28. A non-relocatable program is one which

(a) cannot be made to execute in any area of storage other than the one designated for it at the time of its coding or translation.
(b) consists of a program and relevant information for its relocation.
(c) can itself performs the relocation of its address-sensitive portions.
(d) all of the above

29. Page-Table length register (PTLR) indicates size of

(a) Page Table
(b) Paging File
(c) Main Memory
(d) Virtual Memory

30. Bring a page into memory only when it is needed is called

(a) Demand Memory
(b) Demand Paging
(c) Page Fault
(d) Page Segmentation

31. Divided logical memory blocks with the same size as frames are called

(a) Pages
(b) Frames
(c) Page Table
(d) Segmentation

32. Which memory allocation policy allocates the largest hole to the process?

(a) Best-Fit
(b) Worst-Fit
(c) First-Fit
(d) None of them

33. When there is enough memory to fit a process in memory, but the space is not contiguous we need

(a) Internal Fragmentation
(b) Virtual Fragmentation
(c) External Fragmentation
(d) None of them

34. Consider a virtual memory system with FIFO page replacement policy. For an arbitrary page access pattern, increasing the number of page frames in main memory will

(a) Always decrease the number of page faults
(b) Always increase the number of page faults
(c) Sometimes increase the number of page faults
(d) Never affect the number of page faults

35. The chunks of a memory are known as

(a) Sector
(b) Offset
(c) Page
(d) Frame

36. More than one word are put in one cache block to

(a) exploit the temporal locality of reference in a program
(b) exploit the spatial locality of reference in a program
(c) reduce the miss penalty
(d) none of the above

37. Which of the following statements is false?

(a) Virtual memory implements the translation of a program's address space into physical memory address space
(b) Virtual memory allows each program to exceed the size of the primary memory
(c) Virtual memory increases the degree of multiprogramming
(d) Virtual memory reduces the context switching overhead

38. Suppose the time to service a page fault is on the average 10 milliseconds, while a memory access takes 1 microsecond. Then a 99.99% hit ratio results in average memory access time of

(a) 1.9999 milliseconds
(b) 1 millisecond
(c) 9.999 microseconds
(d) 1.9999 microseconds

39. Where does the swap space reside?

(a) RAM
(b) Disk
(c) ROM
(d) On-chip cache

40. The minimum number of page frames that must be allocated to a running process in a virtual memory environment is determined by

(a) the instruction set architecture
(b) page size
(c) physical memory size
(d) number of processes in memory

41. The memory allocation scheme subject to "external" fragmentation is

(a) segmentation
(b) swapping
(c) pure demand paging
(d) multiple contiguous fixed partitions

42. Page stealing

(a) is a sign of an efficient system
(b) is taking page frames from other working sets
(c) should be the tuning goal
(d) is taking larger disk spaces for pages paged out

43. CPU fetches the instruction from memory according to the value of:

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

44. 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

45. Run time mapping from virtual to physical address is done by:

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

46. 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

47. The page table contains:

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

48. 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

49. Operating System maintains the page table for:

(a) each process
(b) each thread
(c) each instruction
(d) each address

50. In contiguous memory allocation:

(a) each process is contained in a single contiguous section of memory
(b) all processes are contained in a single contiguous section of memory
(c) the memory space is contiguous
(d) None of these

UNIT 5

1. FAT stands for?

(a) File Access Tape

(b) File Accommodation Table

(c) File Allocation Table

(d) File Activity Table

2. Sector interleaving in disks is done by

(a) the operating system
(b) the disk manufacturer
(c) the disk controller cord
(d) none of the above

3. Fragmentation of the file system

(a) occurs only if the file system is used improperly
(b) can always be prevented
(c) can be temporarily removed by compaction
(d) is a characteristic of all file systems

4. When data changes in multiple lists and all lists are not updated, this causes

(a) data redundancy
(b) information overload
(c) duplicate data
(d) data inconsistency

5. _____mechanism was created, which allowed transferring data to and from memory without the intervention of the CPU.

(a) Driver Monitor Access

(b) Driver Memory Access

(c) Direct Monitor Access

(d) Direct Memory Access

6. _____is a way of dealing with dedicated I/O devices in a multiprogramming system.

(a) System call

(b) Spooling

(c) Storage

(d) Buffer

7. The operating system provides special routines called_____to support the specific behavior of individual device.

(a) Managers

(b) Programs

(c) Application

(d) Device drivers

8. What is the collection of logically related information?

(a) File

(b) Word

(c) Processing

(d) Information

9. _____is a file that includes a series of commands that are executed in sequence without any input from the user.

(a) Batch file

(b) Path

(c) Pipe

(d) All of these

10. _____is the sequence of directories and subdirectories the operating system must follow to find a specific file.

(a) Internal command

(b) Path

(c) External command

(d) Extension

11. The operating system as a file management keeps track of information, its location, use, status etc. The facilities are collectively called the

(a) File allocation management

(b) File system

(c) Storage manager

(d) File tracker

12. Block cache and buffer cache are used

(a) To speed up main memory read operation

(b) To increase the capacity of the main memory

(c) To handle interrupts

(d) To improve disk performance

13. What is the use of directory structure in the operating system?

(a) The directory structure is used to solve the problem of the network connection in OS.

(b) It is used to store folders and files hierarchically.

(c) It is used to store the program in file format.

(d) All of the these

14. Which method is the best among file allocation methods?

(a) Linked

(b) Contiguous

(c) Indexed

(d) None of the these

15. Which of the following backup methods is quickest and requires the least amount of backup space?

(a) Complete backups

(b) Incremental

(c) Differential

(d) None of the these

16. Which of the following is not a type of directory structure?

(a) Acyclic-graph directory structure

(b) Single-level directory structure

(c) Tree directory structure

(d) Stack directory structure

17. How many types of buffer overflow in the operating system?

(a) Two

(b) Six

(c) Seven

(d) Five

18. In which allocation method does the user size the file before creating the file?

(a) Contiguous

(b) Linked

(c) Indexed

(d) None of these

19. SSTF stands for_____.

(a) Shortest Signal Time First

(b) Shortest Seek Time First

(c) System Seek Time First

(d) System Shortest Time First

20. Which one is true for unconditional disk formatting?

(a) Destroys every byte of data on a disk by overwriting it with blank spaces
(b) Do not check/scan surface after format
(c) Transfer system files after format
(d) All of above

21. Whenever you move a directory from one location to another

(a) All files inside the directory are moved
(b) All the subdirectory inside that directory are moved
(c) The directory is moved the source file is not moved
(d) Both A and B

22. When a peripheral device needs immediate attention from the operating system, it generates a(n)

(a) Interrupt
(b) Spool
(c) Stack
(d) Page file

23. Which type of command requires additional files to perform specific operations?

(a) Internal commands
(b) External commands
(c) Valuable commands
(d) Primary commands

24. Disk scheduling involves deciding

(a) which disk should be accessed next
(b) the order in which disk access requests must be serviced
(c) the physical location where files should be accessed in the disk
(d) none of the above

25. In which of the following directory systems, is it possible to have multiple complete paths for a file starting from the root directory?

(a) Single level directory
(b) Two level directory

(c) Tree structured director
(d) cyclic graph directory

26. Which of the following statements is false?

(a) the technique of storage compaction involves moving all occupied areas of storage to one end or other of main storage
(b) compaction does not involve relocation of programs
(c) compaction is also known as garbage collection
(d) the system must stop everything while it performs the compaction

27. The problem with …. file is that they slow your computer's operation

(a) Fragmented
(b) Formatted
(c) Program
(d) All of above

28. Which of the following requires a device driver?

(a) Register
(b) Cache
(c) Main memory
(d) Disk

29. Using a larger block size in a fixed block size file system leads to

(a) better disk throughput but poorer disk space utilization
(b) better disk throughput and better disk space utilization
(c) poorer disk throughput but better disk space utilization
(d) poorer disk throughput and poorer disk space utilization

30. A file system with 300 GByte uses a file descriptor with 8 direct block address. 1 indirect block address and 1 doubly indirect block address. The size of each disk block is 128 Bytes and the size of each disk block address is 8 Bytes. The maximum possible file size in this file system is

(a) 3 Kbytes
(b) 35 Kbytes
(c) 280 Bytes
(d) Dependent on the size of the disk

31. RAID level 3 supports a lower number of I/Os per second, because_____.

(a) every disk has to participate in every I/O request
(b) only one disk participates per I/O request
(c) I/O cycle consumes a lot of CPU time
(d) All of these

32. RAID level_____is also known as block interleaved parity organization and uses block level striping and keeps a parity block on a separate disk.

(a) 1
(b) 2
(c) 3
(d) **4**

33. A performance problem with_____is the expense of computing and writing parity.

(a) non-parity based RAID levels
(b) parity based RAID levels
(c) all RAID levels
(d) None of these

34. In RAID level 4, one block read, accesses_____.

(a) only one disk
(b) all disks simultaneously
(c) all disks sequentially
(d) None of these

35. The overall I/O rate in RAID level 4 is :

(a) low
(b) very low
(c) high
(d) None of these

36. A write of a block has to access: (choose all that apply)

(a) the disk on which the block is stored
(b) parity disk
(c) a parity block
(d) All of these

37. RAID level 5 is also known as:

(a) bit-interleaved parity organization
(b) block-interleaved parity organization
(c) block-interleaved distributed parity
(d) memory-style ECC organization

38. The potential overuse of a single parity disk is avoided in RAID level _____.

(a) 3
(b) 4
(c) **5**
(d) None of these

39. RAID level 0+1 is used because, RAID level 0 provides_____whereas RAID level 1 provides_____.

(a) performance, redundancy
(b) performance, reliability
(c) redundancy, performance
(d) None of these

40. If a disk fails in RAID level____rebuilding lost data is easiest.

(a) 1
(b) 2
(c) 3
(d) 4

41. Where performance and reliability are both important, RAID level_____is used.

(a) 0
(b) 1
(c) 2
(d) 0+1

42. A large number of disks in a system improve the rate at which data can be read or written:

(a) if the disks are operated on sequentially
(b) if the disks are operated on selectively
(c) if the disks are operated in parallel
(d) All of these

43. RAID stands for:

(a) Redundant Allocation of Inexpensive Disks
(b) Redundant Array of Important Disks
(c) Redundant Allocation of Independent Disks
(d) Redundant Array of Independent Disks

44. If the mean time to failure of a single disk is 100,000 hours, then the mean time to failure of some disk in an array of 100 disks will be:

(a) 100 hours
(b) 10 days
(c) 10 hours
(d) 1000 hours

45. The mean time to failure of a mirrored disk depends on:

I) the mean time to failure of individual disks
II) the mean time to repair

(a) Only I

(b) Only II
(c) Both I and II
(d) Neither I nor II

46. RAID level_____ refers to disk arrays with striping at the level of blocks, but without any redundancy.

(a) 0
(b) 1
(c) 2
(d) 3

47. RAID level_____refers to disk mirroring.

(a) 0
(b) **1**
(c) 2
(d) 3

48. RAID level_____is also known as bit interleaved parity organization.

(a) 0
(b) 1
(c) 2
(d) **3**

49. RAID level_____is also known as memory style error correcting code (ECC) organization.

(a) 0
(b) 1
(c) **2**
(d) 3

50. RAID level 3 does not have_____as in RAID level 1.

(a) efficiency
(b) enough storage space for data
(c) storage overhead
(d) time consumption overhead