ExamCompetition.com OS introduction & Background

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

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2. To access the services of operating system, the interface is provided by the
a) system calls
b) API
c) library
d) assembly instructions

3. Which one of the following 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

4. 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

ExamCompetition.com Process Management & Scheduling

1. 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

2. 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

3. 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

4. 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

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

6. 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

7. The Process Control Block is :
a) Process type variable
b) Data Structure
c) a secondary storage section
d) a Block in memory

8. The entry of all the PCBs of the current processes is in :
a) Process Register
b) Program Counter
c) Process Table
d) Process Unit

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9. 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

10. 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

11. 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

12. 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

13. 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

14. 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

15. The only state transition that is initiated by the user process itself is :
a) block
b) wakeup
c) dispatch
d) None of these

16. 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

17. 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

18. 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

19. 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

20. 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

 Threads

1. A thread is also called :
a) Light Weight Process(LWP)
b) Heavy Weight Process(HWP)
c) Process
d) None of these

2. The kernel is _____ of user threads.
a) a part of
b) the creator of
c) unaware of
d) aware of

3. 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

4. The time required to create a new thread in an existing process is
a) greater than the time required to create a 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) none of the mentioned

5. 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

 Deadlock

1. 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

2. 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

3. 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

4. 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

5. 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

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

7. For Mutual exclusion to prevail in the system :
a) at least one resource must be held in a non sharable mode
b) the processor must be a uniprocessor rather than a multiprocessor
c) there must be at least one resource in a sharable mode
d) All of these

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

9. Deadlock prevention is a set of methods :
a) to ensure that at least one of the necessary conditions cannot hold
b) to ensure that all of the necessary conditions do not hold
c) to decide if the requested resources for a process have to be given or not
d) to recover from a deadlock

10. To ensure that the hold and wait condition never occurs in the system, it must be ensured that :
a) whenever a resource is requested by a process, it is not holding any other resources
b) each process must request and be allocated all its resources before it begins its execution
c) a process can request resources only when it has none
d) All of these

11. The disadvantage of a process being allocated all its resources before beginning its execution is :
a) Low CPU utilization
b) Low resource utilization
c) Very high resource utilization
d) None of these

12. One way to ensure that the circular wait condition never holds is to :
a) impose a total ordering of all resource types and to determine whether one precedes another in the ordering
b) to never let a process acquire resources that are held by other processes
c) to let a process wait for only one resource at a time
d) All of these

13. A state is safe, if :
a) the system does not crash due to deadlock occurrence
b) the system can allocate resources to each process in some order and still avoid a deadlock
c) the state keeps the system protected and safe
d) All of these

14. A system is in a safe state only if there exists a :
a) safe allocation
b) safe resource
c**) safe sequence**
d) All of these

15. If no cycle exists in the resource allocation graph :
a) then the system will not be in a safe state
b) then the system will be in a safe state
c) either a or b
d) None of these

16. The resource allocation graph is not applicable to a resource allocation system :
a) with multiple instances of each resource type
b) with a single instance of each resource type
c) Both a and b

17. The data structures available in the Banker's algorithm are : (choose all that apply)
a) Available
b) Need
c) Allocation
d) Maximum
e) Minimum
f) All of these

18. The content of the matrix Need is :
a) Allocation – Available
b) Max – Available

c) Max – Allocation
d) Allocation – Max

19. The wait-for graph is a deadlock detection algorithm that is applicable when :
a) all resources have a single instance
b) all resources have multiple instances
c) both a and b

20. If the wait for graph contains a cycle :
a) then a deadlock does not exist
b) then a deadlock exists
c) then the system is in a safe state
d) either b or c

21. A system has 3 processes sharing 4 resources. If each process needs a maximum of 2 units then, deadlock :
a) can never occur
b) may occur
c) has to occur
d) None of these

22. If the resources are always preempted from the same process, _____ can occur.
a) deadlock
b) system crash
c) aging
d) starvation

ExamCompetition.com **Memory**

1. Address Binding is :
a) going to an address in memory
b) locating an address with the help of another address
c) binding two addresses together to form a new address in a different memory space
d) a mapping from one address space to another

2. Binding of instructions and data to memory addresses can be done at :
a) Compile time
b) Load time
c) Execution time
d) All of these

3. If the process can be moved during its execution from one memory segment to another, then binding must be :
a) delayed until run time
b) preponed to compile time
c) preponed to load time
d) None of these

4. Dynamic loading is :
a) loading multiple routines dynamically
b) loading a routine only when it is called
c) loading multiple routines randomly
d) None of these

5. The _____ swaps processes in and out of the memory.
a) memory manager
b) CPU
c) CPU manager
d) user

6. If binding is done at assembly or load time, then the process _____ be moved to different locations after being swapped out and in again.
a) can
b) must
c) can never
d) may

7. The address generated by the CPU is referred to as :
a) physical address
b) logical address
c) Neither a nor b
d) both a and b

8. The run time mapping from virtual to physical addresses is done by a hardware device called the :
a) Virtual to physical mapper
b) memory management unit
c) memory mapping unit
d) None of these

9. The size of a process is limited to the size of :
a) physical memory
b) external storage
c) secondary storage
d) None of these

10. Swapping requires a _____.
a) motherboard
b) keyboard
c) monitor
d) backing store

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

12. A memory buffer used to accommodate a speed differential is called
a) stack pointer
b) cache
c) accumulator
d) disk buffer

13. 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

14. 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

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

16. 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

17. When memory is divided into several fixed sized partitions, each partition may contain _____.
a) exactly one process
b) atleast one process
c) multiple processes at once
d) None of these

18. In fixed sized partition, the degree of multiprogramming is bounded by _____.
a) the number of partitions
b) the CPU utilization
c) the memory size
d) All of these

19. In internal fragmentation, memory is internal to a partition and :
a) is being used
b) is not being used
c) is always used
d) None of these

20. A solution to the problem of external fragmentation is :
a) compaction
b) larger memory space
c) smaller memory space
d) None of these

21._____ is generally faster than _____ and _____.
a) first fit, best fit, worst fit
b) best fit, first fit, worst fit
c) worst fit, best fit, first fit
d) None of these

22. External fragmentation exists when :
a) enough total memory exists to satisfy a request but it is not contiguous
b) the total memory is insufficient to satisfy a request
c) a request cannot be satisfied even when the total memory is free
d) None of these

23. External fragmentation will not occur when :
a) first fit is used
b) best fit is used
c) worst fit is used
d) no matter which algorithm is used, it will always occur

24. When the memory allocated to a process is slightly larger than the process, then :
a) internal fragmentation occurs
b) external fragmentation occurs
c) both a and b
d) neither a nor b

25. Physical memory is broken into fixed-sized blocks called _____.
a) frames
b) pages
c) backing store
d) None of these

26. Logical memory is broken into blocks of the same size called _____.
a) frames
b) pages
c) backing store
d) None of these

27. The _____ is used as an index into the page table.
a) frame bit
b) page number
c) page offset
d) frame offset

28. 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

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

30. When a program tries to access a page that is mapped in address space but not loaded in physical memory, then
a) segmentation fault occurs
b) fatal error occurs
c) page fault occurs
d) no error occurs

31. In FIFO page replacement algorithm, when a page must be replaced
a) oldest page is chosen
b) newest page is chosen
c) random page is chosen
d) none of the mentioned

32. Which algorithm chooses the page that has not been used for the longest period of time whenever the page required to be replaced?
a) first in first out algorithm
b) additional reference bit algorithm
c) least recently used algorithm
d) counting based page replacement algorithm

33. Which of the following page replacement algorithms suffers from Belady's Anomaly ?
a) Optimal replacement
b) LRU
c) FIFO
d) Both optimal replacement and FIFO

34. Optimal page – replacement algorithm is :
a) Replace the page that has not been used for a long time
b) Replace the page that has been used for a long time
c) Replace the page that will not be used for a long time
d) None of these

35. Increasing the RAM of a computer typically improves performance because:
a) Virtual memory increases
b) Larger RAMs are faster
c) Fewer page faults occur
d) None of the mentioned

ExamCompetition.com **Thrashing**

1. A process is thrashing if :
a) it spends a lot of time executing, rather than paging
b) it spends a lot of time paging, than executing
c) it has no memory allocated to it
d) None of these

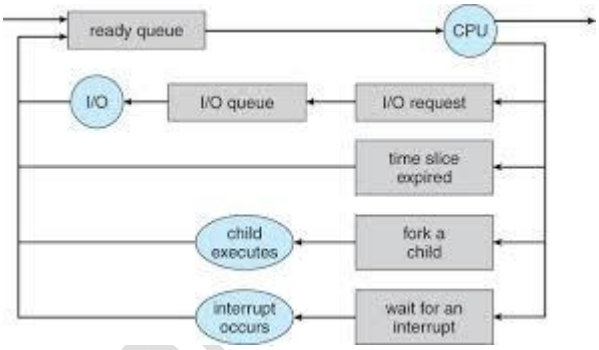
2. Thrashing _____ the CPU utilization.
a) increases
b) keeps constant
c) decreases
d) None of these

Secondary memory

1. The time for the disk arm to move the heads to the cylinder containing the desired sector is called
a) disk time
b) seek time
c) arm time
d) sector time

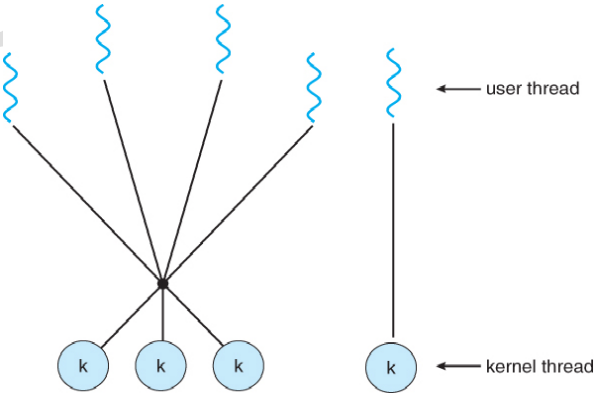
ExamCompetition.com **KVS 2013 Question**

1. The diagram given below represent



a) process creation
b) Process state
c) Queuing diagram
d) Communication model

2. The following diagram dipicts



a) Two level model
b) Many to one model
c) One to one model
d) Many to many model

3. The real time operating system always runs on
a) Linux
b) Unix
c) Embedded system
d) Apple's Mac OS

A Program is a/an …… Entity
a) Active
b) Passive
c) Domant
d) Hyperactive

4. This begins at the root and follows a path down to a specified file, giving the directory names on the path, this is known as
a) Absolute path name
b) Relative path name
c) Definite path name
d) Indefinite path name

5. Each process is contained in a single section of memory that is contiguous to the section containing the next process is called
a) Contiguous memory protection
b) Contiguous memory allocation
c) Contiguous memory reallocation
d) Contiguous memory utilization

6. The positioning time or random access time, consist of two parts: the time necessary to move the disk arm to the desired cylinder, called
a) seek time
b) rotational latency
c) flash drives
d) transfer rate

7. what is coalescing ?
a) it is secondary storage for allocated kernel memory
b) The buddy system allocates memory from a fixed size segment consisting of physically contiguous pages.
c) Kernel memory is often allocated from a free memory pool different from the list used to satisfy ordinary user mode processes.
d) An advantage of the buddy system is how quickly adjacent buddy can be combined to form larger segment using this technique

8. Both the first fit and best fit strategies for memory allocation suffer from
a) external fragmentation
b) internal fragmentation
c) 50-percent rule
d) segmentation

9. The term …… is used for the larger, more powerful computers other than supercomputers. It supports s large database, has elaborate I/O hardware, and is used in a central data processing facility.
a) minicomputer
b) supercomputer
c) mainframe computer
d) microcomputer

10. In a monolithic kernel, operating system runs in
a) user mode
b) supervisor mode
c) user/supervisor mode
d) none of these

11. one scheme for communication between user-thread library and the kernel is known as
a) lightweight process
b) upcall handler
c) scheduler dctivation
d) cleanup handler

12. A classic software – based solution to the critical – section problem is known as
a) peterson's solution
b) process sybchronization
c) coordination
d) race condition

13. …….. is a sequence of memory read- write operations are atomic
a) critical section object
b) adaptive mutex
c) time slice
d) memory transaction

14. If a process is runable but is temporarly stopped to let another process run, in which state is the process said to be
a) running
b) ready
c) interrupted
d) blocked