قائمة الاسئلة

202107291230_2_[IS]_[Operating Systems]_[د. أنور الشميري]

1) What is operating system
   1) - collection of programs that manages hardware resources
   2) - system service provider to the application programs
   3) - link to interface the hardware and application programs
   4) + all of the mentioned
2) 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
   1) - Shared memory segments
   2) + Race condition
   3) - Entry section
   4) - Process synchronization
3) Why is CPU scheduling done?
   1) - Decrease CPU Utilization
   2) - Decrease Cost
   3) + Increase CPU Utilization
   4) - None of the mentioned
4) What is the ready state of a process?
   1) + when process is scheduled to runin the CPU
   2) - when process is wating in the Job Queue
   3) - when process is using the CPU
   4) - none of the mentioned
5) A set of processes is deadlock if
   1) - each process is terminated
   2) - all processes are trying to kill each other
   3) + each process is blocked and will remain so forever
   4) - none of the mentioned
6) ? What is a long-term scheduler
   1) + It selects which process has to be brought into the ready queue
   2) - It selects which process has to be executed next and allocates CPU
   3) - It selects which process to remove from memory by swapping
   4) - None of these
7) Suppose that a process is waiting for some I/O service. When the service is completed, it goes to the
   1) - Running state
   2) + Ready State
   3) - Waiting State
   4) - Terminate State
8) 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) ____.
   1) + Race condition
   2) - Shared Memory Segments
   3) - Entry Section
   4) - Process Synchronization
9) Which one of the following is a synchronization tool?
   1) - Critical Section

2) - pipe
3) + semaphore
4) - Deadlock

10) Thre processes: Give their Burst Time as (P1=8,P2=4,P3=9,p4=5) in (ms) and and Arrival time as (P1=0,P2=1,P3=2,p4=3), the average waiting time for the Shortest Job first (SJF) algorithm is:
1) - 28/4
2) - 36/4
3) - 35/4
4) + 31/4

11) Which one of the following is the address generated by CPU?
1) - physical address
2) - absolute address
3) + logical address
4) - none of the mentioned

12) Thre processes: Give their Burst Time as (P1=8,P2=4,P3=9,p4=5) in (ms) and and Arrival time as (P1=0,P2=1,P3=2,p4=3), the average waiting time for the FCFS algorithm is:
1) - 28/4
2) - 36/4
3) + 35/4
4) - 31/4

13) What are the requirements for the solution to critical section problem?
1) - Mutual Exclusion
2) - Progress
3) - Bounded Waiting
4) + All of Above

14) A program in execution is called?
1) - A Paging
2) + A Process
3) - A virtual memory
4) - A Demand Page

15) Which of the following are two types of atomic operations performed by semaphores?
1) + Wait and signal
2) - Wait and Stop
3) - Signal and Stop
4) - Release and Wait

16) Convoy effect in FCFS happens if
1) + The burst time of the first job is the highest among all
2) - The burst time of the first job is the smallest among all
3) - The burst time of all processe is the same
4) - none of the mentioned

17) Waiting time is amount of time to execute particular process
1) - TRUE.
2) + FALSE.

18) Process control block (PCB) is information Associated with each process.
1) + TRUE.
2) - FALSE.

19) It is necessary for threads in a process to have separate stacks
1) + TRUE.
2) - FALSE.

20) Program running at all times on the computer called Kernel
1) + TRUE.
2) - FALSE.

21) Which one of the following is OS services:
1) - user interface
2) - program execution
3) - I/O operations
4) + All of the above

22) If graph of processes contains cycle, then there is a deadlock.
1) - TRUE.
2) + FALSE.

23) Dual-mode operation does not allow OS to protect itself and other system component
1) - TRUE.
2) + FALSE.

24) We want to keep the CPU as busy as possible, this criteria refers to as
1) - Throughput
2) + CPU utilization
3) - Response time
4) - waiting time

25) The part of the program, in which race condition can occur, is called
1) - Exit section.
2) + Critical section.
3) - Remainder section.
4) - Entry section.

26) What is CPU utilization in the context of CPU scheduling?
1) - The amount of time the CPU is idle
2) - The percentage of CPU time that is wasted on overhead
3) - The percentage of CPU time that is used for system processes
4) + The amount of time the CPU is executing user processes

27) What is a kernel thread?
1) - A thread that is created and managed by the user-level application
2) - A thread that runs in kernel mode
3) + A thread that is created and managed by the kernel
4) - A thread that runs in user mode

28) Which scheduling criterion aims to minimize the average waiting time of all processes?
1) - First-come, first-served scheduling
2) - Round-robin scheduling
3) - Priority scheduling
4) + Shortest job first scheduling

29) What is aging in priority scheduling?
1) + The process of increasing the priority of long-waiting processes
2) - he process of decreasing the priority of low-priority processes
3) - The process of changing the order of processes in the ready queue
4) - The process of terminating processes that have been waiting too long

30) Which scheduling algorithm is known for providing fairness to all processes?
1) + Round-robin scheduling
2) - Shortest job first scheduling
3) - Priority scheduling
4) - First Come First Serve scheduling

31) In memory managemnt, What is the purpose of the page table?
- 1) - To keep track of which pages are in physical memory and which pages are on disk
- 2) + To provide a mapping between virtual addresses and physical addresses
- 3) - To manage process synchronization
- 4) - To manage process communication

32) What is process synchronization?
- 1) - A mechanism that prevents a process from communicating with another process
- 2) - A mechanism that prevents multiple processes from accessing shared resources
- 3) + A mechanism that allows multiple processes to access shared resources
- 4) - A mechanism that allows a process to communicate with another process

33) What is context switching?
- 1) - The process of switching between user and kernel mode
- 2) - The process of switching between threads
- 3) + The process of switching between processes
- 4) - The process of switching between CPUs

34) What is a process control block (PCB)?
- 1) - A type of system call
- 2) - A file system data structure
- 3) + A data structure that contains information about a process
- 4) - A scheduling algorithm

35) What is a process in the context of Operating System?
- 1) - A device driver
- 2) - A collection of files
- 3) - A set of system calls
- 4) + A program in execution

36) Who provides an interface to access the services of the operating system?
- 1) - Assembly instructions
- 2) - Library
- 3) + System calls
- 4) - All of the above

37) An address generated by a CPU is referred to as a ____.
- 1) - physical address
- 2) + logical address
- 3) - post relocation register address
- 4) - Memory-Management Unit (MMU) generated address

38) Suppose we are operating with execution-time binding and the physical address generated is 300. The relocation register is set to 100. What is the corresponding logical address?
- 1) - 300
- 2) - 206
- 3) + 200
- 4) - None of the above

39) Which of the following dynamic storage-allocation algorithms results in the largest leftover hole in memory?
- 1) - first fit
- 2) - best fit
- 3) + worst fit
- 4) - None of the above

40) _____ refers to the situation where, for a set of processes, every process in the set

must be waiting for an event that can be caused only be another process in the set.

1) + Deadlock
2) - Starvation
3) - Locking
4) - Blocking

41) An unsafe state always leads to a deadlocked state.

1) - TRUE.
2) + FALSE.

42) A shell is a program that allows a user to interact with the operating system by typing commands.

1) + TRUE.
2) - FALSE.

43) The process scheduler is responsible for allocating CPU time to multiple processes.

1) + TRUE.
2) - FALSE.