Q)If several jobs are ready to run at the same time, the system must choose among them. Making this decision is**--> CPU scheduling**

Q)Time sharing system is also called as**--> Multitasking system**

Q)An interactive, or hands-on, computer system provides _____communication between the user and the system.**--> on-line**

Q)A time-shared operating system uses _____ to provide each user with a small portion of a time-shared computer.**--> CPU scheduling and multiprogramming**

Q)If several jobs are ready to be brought into memory, and there is not enough room for all of them, then the system must choose among them. Making this decision is called as**--> job scheduling**

Q)All the jobs that enter the system are kept in**--> Secondary memory**

Q)Spooling concept helps to**--> Efficient Memory Utilization**

Q)The most important aspect of job scheduling is the ability to**--> Multiprogramming**

Q)The ability to continue providing service proportional to the level of surviving hardware is called graceful degradation. Systems that are designed for graceful degradation are also called**--> fault-tolerant**

Q)The most common multiple-processor systems now use the**--> symmetric multiprocessing**

Q)asymmetric multiprocessing means**--> in which each processor is assigned a specific task**

Q)In distributed systems**--> Processes do not share memory and clock**

Q)central themes of modern operating systems**--> Multiprogramming and Time sharing**

Q)Multiprocessor systems also called as**--> tightly coupled systems**

Q)Which of the following operating systems are more complex**--> Time-sharing**

Q)virtual memory is**--> a technique that allows the execution of a job that may not be completely in memory**

Q)The occurrence of an event is usually signaled by _____from either the hardware or the software**--> Interrupt**

Q)Software may trigger an interrupt by executing a special operation called a**--> Interrupt call**

Q)Event that may trigger an interrupt**--> invalid memory access**

Q)The interrupt Architecture must also save the address of the**--> Interrupted instruction**

Q)If a particular site is currently overloaded with jobs, some of them may be moved to other, lightly loaded, sites. This movement of jobs is called**--> load sharing**

Q)When a computer system powered up or rebooted it needs to have an initial program to run. This initial program is called as**--> Bootstrap program**

Q)Distribute systems are also called as**--> Loosely coupled systems**

Q)The processors in a distributed system may vary in**--> Size and function**

Q)The _____is responsible for moving the data between the peripheral devices**--> device controller**

Q)A typical instruction-execution cycle, as executed on a system with a von Neumann architecture, will first fetch an instruction from memory and will store that instruction in the**--> instruction register**

Q)Mode bit value of monitor mode is**--> 0**

Q)At system boot time, the hardware starts in**--> monitor mode**

Q)When an interrupt (or trap) occurs, the _____transfers control to the operating system**--> Hardware**

Q)When an interrupt (or trap) occurs First, the operating system preserves the state of the CPU by storing registers and the program counter. Then, it determines which type of interrupt has occurred. This determination may require**--> Polling**

Q)After the interrupt is serviced, the saved return address is loaded into the**--> Program counter**

Q)A trap is**--> Software generated interrupt**

Q)The _____reads instructions from main memory during the instruction-fetch cycle**--> central processor**

Q)The perform both reads and writes data from main memory during the**--> data-fetch cycle**

Q)For a program to be executed, it must be mapped to _____and loaded into memory**--> absolute addresses**

Q)The operating system is responsible for the following activities in connection with file management**--> The support of primitives for manipulating files and directories**

Q)When a system call is executed, it is treated by the hardware as a**--> Software interrupt**

Q)The operating system is responsible for the following activities in connection with process management**--> The provision of mechanisms for process communication**

Q)Whenever a trap or interrupt occurs, the hardware switches from**--> user mode to monitor mode**

Q)whenever the operating system gains control of the computer, it is in**--> monitor mode**

Q)System calls generally available as**--> Assembly language instructions**

Q)The simplest approach is to pass the parameters to the operating system is**--> Registers**

Q)transfer status information is _____type of system call**--> Communications**

Q)wait event, signal event is _____type of system call**--> Process control**

Q)Shell is also called as**--> command-line interpreter**

Q)_____provide the interface between a process and the operating system**--> System calls**

Q)The most important systems programs for an operating system is the**--> command interpreter**

Q)Many commands are given to the operating system by**--> control statements**

Q)The following one indicates the address of the next instruction to be executed for a particular process**--> program counter**

Q)The processes that are residing in main memory and are ready and waiting to execute are kept on a list called**--> ready queue**

Q)The list of processes waiting for a particular I/O device is called a**--> device queue**

Q)The process could be removed forcibly from the CPU, as a result of an interrupt, and be put back in the**--> Ready queue**

Q)The unit of work in most systems**--> Process**

Q)Each process is represented in the operating system by a _____.**--> process control block**

Q)set process, file, or device attributes is _____type of system call**--> Information maintenance**

Q)attach or detach remote devices is _____ type of system call**--> Communications**

Q)An LWP contains a process control block with register data, accounting information, and _____.**--> memory information**

Q)A user-level thread needs only a stack and _____.**--> one program counter**

Q)A kernel thread has only a small data structure and_____.**--> A stack**

Q)Selecting processes from mass storage device(DISK) and place those processes in memory for execution will be done by**--> Long term scheduler**

Q)The _____selects processes from memory among the processes that are ready to execute, and allocates the CPU to one of them.**--> Short term scheduler**

Q)The user-level threads are supported by _____.**--> Light weight processes**

Q)Each light weight process is connected to _____.**--> exactly one kernel-level thread**

Q)If all processes are CPU bound, the I/O waiting queue will almost always be**--> Empty**

Q)In time sharing systems _____scheduler may be absent.**--> Long-term**

Q)If all processes are I/O bound, the ready queue will almost always be _____**--> Empty**

Q)shared-memory and message-system communication schemes are_____.**--> not mutually exclusive**

Q)Switching the CPU from one process to another by saving the state of the old process is known as_____**--> Context switch**

Q)The degree of multiprogramming is controlled by_____scheduler.**--> Long-term**

Q)The degree of multiprogramming means_____**--> The number of processes in the memory**

Q)The dispatcher is the module that gives control of the**--> CPU to the process selected by the short-term scheduler**

Q)The interval from the time of submission of a process to the time of completion is_____**--> Turn around time**

Q)Whenever the CPU becomes idle, the operating system must select one of the processes in the _____to be executed**--> ready queue**

Q)Time sharing systems introduced _____scheduler**--> Medium-term**

Q)A process is swapped out and swapped in later by the _____scheduler**--> Medium-term**

Q)Process execution consists of a cycle of _____.**--> CPU execution and I/O wait**

Q)Process execution begins with a _____.**--> CPU burst**

Q)_____scheduling is used frequently in long-term scheduling.**--> SJF**

Q)Although the SJF algorithm is optimal, it cannot be implemented at the level of _____.**--> Short term scheduling**

Q)The average waiting time under _____ policy is optimal.**--> SJF**

Q)time from the submission of a request until the first response is produced is called_____.**--> Response time**

Q)The implementation of the FCFS policy is easily managed with a _____.**--> Queue**

Q)The average waiting time under _____ policy is quite long.**--> FCFS**

Q)The FCFS scheduling algorithm is**--> Always Non preemptive**

Q)A context switch is applied in _____.**--> Round Robin**

Q)At one extreme, if the time quantum is very large (infinite), the RR policy is the same as the**--> FCFS**

Q)A time quantum is generally from_____.**--> 10 to 100 milliseconds**

Q)The SJF algorithm is_____.**--> may be either preemptive or non preemptive**

Q)Equal-priority processes in priority scheduling algorithm are scheduled in

_____manner.**--> FCFS**

Q)A major problem with priority scheduling algorithms is**--> Starvation**

Q)A solution to the problem of indefinite blocking is_____.**--> Aging**

Q)In multilevel queue-scheduling algorithm the foreground queue might be scheduled by_____.**--> RR**

Q)In multilevel queue-scheduling algorithm the background queue might be scheduled by_____.**--> FCFS**

Q)If a process uses too much CPU time, it will be moved to a_____.**--> lower-priority queue**

Q)If the time quantum is very small (say 1 microsecond), the RR approach is called _____ **--> processor sharing**

Q)processes are permanently assigned to a queue on entry in _____ scheduling algorithm.**--> Multi level queue**

Q)In _____ scheduling processes can move from one queue to another.**--> Multi level feedback queue**

Q)In _____ scheduling processes cannot move from one queue to another.**--> Multi level queue**

Q)If process P is executing in its critical section, then no other processes can be executing in their critical sections is called_____.**--> Mutual exclusion**

Q)A semaphore is**--> An integer variable**

Q)A solution to the critical-section problem must satisfy the following three ' Requirements**--> Mutual exclusion, progress, bounded waiting**

Q)A non preemptive priority scheduling algorithm will simply put the new process at the head of the _____.**--> ready queue**

Q)The number of processes that are completed per time unit, called_____.**--> Throughput**

Q)A situation like this, where 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 _____.**--> race condition**

Q)In critical section**--> process may be changes common variables**

Q)Semaphores are used to solve the problem of_____.**--> Process synchronization**

Q)Mutual exclusion problem occurs between_____.**--> Among processes that share resources**

Q)Only those processes that are not executing in their remainder section can participate in the decision of which will enter its critical section next is called_____.**--> Progress**

Q)A semaphore can be accessed through_____.**--> Wait() and signal()**

Q)The classical definition of signal is_____.**--> signal(S): S := S + 1;**

Q)Disallowing interrupts in uniprocess systems we can remove_____.**--> Critical-section problem**

Q)If the machine supports the Test-and-Set instruction, then we can implement mutual exclusion by declaring a Boolean variable lock, initialized to**--> false**

Q)The critical-section problem could be solved simply in a _____ if we could disallow interrupts to occur while a shared variable is being modified**--> uniprocessor environment**

Q)To enter into critical section every process sets its flag to_____.**--> True**

Q)An algorithm solves critical section problem for n processes is_____.--> **Bakery**

Q)Bakery algorithm implemented for_____.--> **Distributed environment**

Q)Features of _____ can make the programming task easier and improve system efficiency--> **Hardware**

Q)Each semaphore has an integer value and a list of _____.--> **Processes**

Q)A _____operation removes one process from the list of waiting processes--> **signal**

Q)The process is restarted by a _____operation--> **wakeup**

Q)If the machine supports the Swap instruction, then _____can be Provided--> **mutual exclusion**

Q)Busy waiting wastes--> **CPU cycles**

Q)Spinlocks are useful in _____.--> **Multi processor systems**

Q)The only state transition that is initiated by the user process itself is_____.--> **Block**

Q)A solution to the Dining Philosophers Problem which avoids deadlock is--> **ensure that one particular philosopher picks up the left fork before the right fork, and that all other philosophers pick up the right fork before the left fork**

Q)A counting semaphore was initialized to 10. Then 6 P (wait) operations and 4V (signal) operations were completed on this semaphore. The resulting value of the semaphore is--> **8**

Q)A critical section is a program segment--> **where shared resources are accessed**

Q)The _____ operation suspends the process that invokes it--> **block**

Q)The _____operation resumes the execution of a blocked process--> **wakeup**

Q)The list of waiting processes can be easily implemented by a link field in each _____.--> **process control block**

Q)One way to add and remove processes from the list, which ensures bounded waiting, would be to use a_____--> **FIFO queue**

Q)At a particular time of computation the value of a counting semaphore is 7.Then 20 P operations and 15 V operations were completed on this semaphore.The resulting value of the semaphore is--> **2**

Q)Spinlocks are intended to provide _____ only--> **Bounded Waiting**

Q)A mutex--> **must be accessed from only one process**

Q)Let m[0]m[4] be mutexes (binary semaphores) and P[0] . P[4] be processes. Suppose each process P[i] executes the following:wait (m[i]);wait (m[(i+1) mode 4]);.........release (m[i]); release (m[(i+1)mod 4]); This could cause--> **Deadlock**

Q)Which of the following need not necessarily be saved on a context switch between processes?--> **Translation look-aside buffer**

Q)Let the time taken to switch between user and kernel modes of execution be t1 while the time taken to switch between two processes be t2. Which of the following is TRUE?--> **t1 < t2**

Q)Semaphores are mostly used to implement--> **IPC mechanisms**