

Sample questions for the jump-in test of the Operating Systems exam (not the full set of the possible questions)

What is the operating system?

What is the kernel?

What are the kernel's tasks?

What is a multiprogrammed / time-sharing / embedded system?

What is the hard / soft real-time system?

What is the IEEE POSIX?

What does the monolithic / layered / modular kernel structure mean?

What is the microkernel?

What is the runlevel (UNIX)?

What tasks run in kernel / user mode?

What does the CPU / I/O / memory intensive nature mean?

What is the waiting / turnaround / response time?

What is the CPU utilization / throughput?

What is the task / process / thread?

What are the advantages / disadvantages of a thread?

What are the main steps in the life cycle of a task?

What are the administrative data fields of a task?

What is the context of a task?

What is the context change?

What is the task of the window manager / display server?

What is the short- / medium- / long-term scheduling?

What is the preemptive / cooperative scheduler?

What is the convoy effect?

What is the goal of using priorities?

What is starvation?

What does the aging mean?

What is the priority inversion?

What does it mean if a multi-level scheduler is static / dynamic?

What is an embedded system?

What is the difference between a high-end and a low-end embedded OS?

What is the purpose of the memory management unit (MMU)?

What data is stored in the task's memory range?

What administrative data is managed by the kernel about a task?

In which cases should the tasks use synchronization?

What is mutual exclusion?

What is a critical section?

What is busy waiting?

What is an atomic operation?

What is the reader-writer problem?

What is a deadlock?

What is a resource allocation graph?

What are the necessary conditions for a deadlock?

What is the abstract virtual machine concept?

What does virtual memory means?

How the data is stored in the virtual memory / in the physical memory / on the HDD?

What does address translation means?

What is swapping / caching?

What is the page table?

Where the page table is stored?

What is a page fault?

Why we need page replacement algorithms?

What metadata is stored about a page?

What is the fill-on-demand technique?

What is the copy-on-write technique?

What is trashing?

What is the Bélády's anomaly?

What is the PRAM (pipelined RAM) model?

What is direct / indirect addressing?

What does synchronous / asynchronous data transfer (messaging) means?

What is the socket communication?

What is the remote procedure call (RPC)?

What is a signal?

What is a message queue (MQ)?

What is a pipe?

What is shared memory between processes (SHM)?

What is a file / directory?

What is a file system?

What is a volume?

What is a partition?

What is the difference between soft and hard links?

What kind of permissions there are in UNIX systems?

What does mounting / unmounting mean?

What are the most common causes of data loss?

What is an open file object?

What is stored in a superblock?

What metadata is stored about a file?

What is a journaling file system?

What is the virtual file system (VFS)?

What are the most common measuring numbers to measure the reliability of storage devices?

What is a cylinder block?

What is the main idea of RAID?

What are the problems of RAID?

What is a network file system (NFS)?

What are the main goals of virtualization?

What is host / guest / VMM in virtualization?

What are the two kind of platform virtualization?

What does paravirtualization mean?

What are the three requirements for virtualization?

What does emulation mean?

What does IaaS / PaaS / SaaS mean in cloud computing?