1. Rank the following storage systems from slowest to fastest:

Magnetic tapes < optical disk < hard-disk drives < nonvolatile memory < main memory < cache < registers

1. Provide at least three resources the operating system allocates.

CPU

Memory

Permanent I/O devices (such as hard disk)

1. What is the difference between an interrupt and a trap? What is the use of each function?

An interrupt is a hardware-generated signal to inform the system where a trap is a software-generated signal to do the same thing.

The interrupt usually come from many different sources such as timer chip, input devices, or I/O devices.

For the trap it caused by division by zero or invalid memory access those kinds of errors.

1. What are the two separate modes of operation?

Usually the operation system has two modes of operation, user mode and kernel mode. The user mode is for running regular applications, but the kernel mode is on if a user application requests a system service.

1. Which of the following actions should be privileged?

Privileged:

Write the kernel memory

Turn off interrupts

1. What is a system call?

System call offers user-level processes to request system services such as process control, file management, or device management.

1. List at least three of the major categories of system calls.

Process control

File management

Device management

Protection

1. List three possible ways to pass parameters to system calls.

-Pass the parameters in registers

-Store the parameters in a block, or table, in memory, and pass the address of block as a parameter in a register

-Push the parameters onto a stack

1. What part of the operating system makes the decision with regards to which process will run?

The CPU scheduler

1. What are the two different approaches for providing a user interface?

-command line interface

-graphical user interface