QUIZ 1

The OS masks the details of the hardware from the programmer and provides the programmer with a convenient interface for using the system.

**True**

One of the driving forces in operating system evolution is advancement in the underlying hardware technology.

**True**

The one program running always on a computer is what?

**kernel**

The OS masks the details of the hardware from the programmer and provides the programmer with a convenient interface for using the system.

**True**

Quiz 2

The processor itself is not a resource so the OS is not involved determining how much of the processor time is devoted to the execution of a user program.

**False**

git is a concurrent debugger in the Linux operating system

**False**

Uniprogramming typically provides better utilization of system resources than multiprogramming

**False**

The\_ is the interface that is the boundary between hardware and software

**ISA**

Quiz 3

What is a process?

**An instance of a program in execution.**

What happens when a context switch occurs if the new context is already loaded into one of the register sets.

**The CPU current-register-set pointer is changed to point to the set containing the new context, which takes very little time.**

Interrupt disabling can implement mutual exclusion in a multiprocessor architectures.

Quiz 4

**False**

The central themes of operating system design are all concerned with the management of processes and threads.

**True**

The sharing of main memory among processes is usetul to permit efficient and close interaction among processes because such sharing does not lead to any problems.

**False**

The final result of a race condtion is independent of the order of execution.

**False**

The significant point about the process control block is that it contains sufficient information so that it is possible to interrupt a running process and later resume execution as if the interruption had not occurred.

**True**

Quiz 5

A test\_and\_set instruction occurs when two or more processes/ threads access shared resources and the concurrent processes/threads try to change these resource at the same time.

**False**

Mutual exclusion means if one process is in its critical section then no other processes can be executing in their critical sections.

**True**

Because mutex and semaphore mechanisms are different, we can’t use semaphores to implement mutex locks.

**False**

In OS/161, there are multiple process lists (a.k.a., sleeping-process lists), each of which is designed for a semaphore.

**False**

A condition variable - a synchronization mechanism – can be considered as a container, which allows processes or threads to wait for a certain condition.

**True**

**Instruction set architecture (ISA) :** The ISA defines the repertoire of machine

language instructions that a computer can follow. This interface is the boundary

between hardware and software. Note that both application programs

and utilities may access the ISA directly. For these programs, a subset of the

instruction repertoire is available (user ISA). The OS has access to additional

machine language instructions that deal with managing system resources

(system ISA).

**Application binary interface (ABI) :** The ABI defines a standard for binary

Reference: https://en.wikipedia.org/wiki/Application\_binary\_interface

portability across programs. The ABI defines the system call interface to

the operating system and the hardware resources and services available in a

system through the user ISA.

In computer software, an application binary interface (ABI) is the interface between two program modules, one of which is often a library of operating system, at the level of machine code.

**Application programming interface (API)** : The API gives a program access

to the hardware resources and services available in a system through the user

ISA supplemented with high-level language (HLL) library calls. Any system

calls are usually performed through libraries. Using an API enables application

software to be ported easily, through recompilation, to other systems that

support the same API.