True/False

Virtualization can help reduce energy consumption by consolidating multiple physical machines into fewer physical ones

True

Virtualization can improve disaster recovery by enabling quick and easy backup and restoration of virtual machines

True

Type 2 hypervisors run on top of a guest operating system that provides indirect access to hardware resources

False

Hypervisors are only used in cloud computing environments.

False

Monolithic hypervisors are better suited for high-performance computing than microkernel hypervisors

True

Virtualization can help reduce the need for physical space and infrastructure by consolidating multiple servers onto a single physical machine

True

An emulator can read, interpret and execute all the bytes included in the memory of system it is going to reproduce

True

Type 1 hypervisors run directly on the host machine’s hardware and have direct access to hardware resources

True

Virtualization can reduce costs by enabling the sharing of hardware resources between virtual machines

True

Full virtualization can run on a wider range of hardware than paravirtualization.

False

Paravirtualization is a particular type of kernel-level Virtualization that does not relie on a host OS

False

Paravirtualization cannot be used with unmodified OS

True

Hybrid Clouds are systems where one or more public cloud services are combined with private data center resources into a single virtually managed environment

True

Full virtualization provides better performance than paravirtualization

False

Multiple choice

Select the wrong definition. A Virtual Machine

A may result in a different level of performance with respect to the physical machine

B may appear as having different resources than the physical machine

C none of the others

D provides identical software behavior

A System VM:

A Provides the interface to system ISA and user ISA

B Provides the interface to system ABI and the user ISA

C Provides the interface to system ABI and the user ABI

D Provides the interface to system calls and user ABI

Which is the difference between Guest and Host?

A Guest: the underlying platform running in the virtual machine manager; Host: the software that runs in the VM environment

B Guest: the underlying platform supporting the environment/system; Host: the software that runs in the VM environment

C Guest: the software that runs in the VM environment; Host: the underlying platform supporting the environment/system

D Guest: the underlying platform supporting the environment/system; Host: the virtual machine manager supporting the execution of virtual machines

In the Microkernel architecture of VMs:

A Drivers are part of the Guest VMs

B Drivers are part of the Hypervisor

C Drivers are part of a specific service VM

D Drivers are part of the Guest OS

Which statement about Paravirtualization is correct

A It is the same of Kerne-level Virtualization

B Guest OS and VMM are independent each other

C It cannot be used with traditional Operating Systems

D Hooks are not required

An emulator

A Emulates only the ISA but not the ABI

B Emulates only the ABI and not the ISA

C Reproduces the machine by providing not only ABI but ISA (user/system)

D Supports the Java Runtime Environment

What is the Hardware-level virtualization?

A The virtualization layer is placed between the operating system and the applications

B The virtualization layer is above the applications

C The virtualization layer is placed between the hardware and the operating system

D The virtualization layer is placed below the hardware

A process VM:

A Provides the interface to system calls and user ABI

B Provides the interface to system ABI and the user ISA

C Provides the interface to system calls and user ISA

D Provides the interface to system ABI and the user ABI

A System Virtual Machine can provide its functionality:

A Only on the hardware

B Either working directly on the hardware or running on an Operating System

C Only on top of an Operating System

D None of the others

Which statement about Paravirtualization is correct?

A It cannot be used with traditional Operating Systems

B Hooks are not required

C Guest OS and VMM are independent each other

D It is the same of Kernel-level Virtualization

In the Microkernel architecture of VMs:

A Drivers are part of a specific service VM

B Drivers are part of the Hypervisor

C Drivers are part of the Guest OS

D Drivers are part of the Guest VMs