



VIT

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

Fall Semester - 2019-20
School of Computer Science and
Engineering
CSE4011-Virtualization Slot : G1

Continuous Assessment Test #1

Answer all Questions

Max. Marks: 50

1. The key to managing the complexity in the computer system is the levels of abstraction separated by well-defined interfaces.
 - (a) Explain the different levels of abstractions and interfaces in traditional computer architecture with a neat diagram. [5]
 - (b) Justify how these interfaces help in virtualization. [5]
2. Some computers are virtualizable, and some are non-virtualizable.
 - (a) State and explain the reasons for both. [5]
 - (b) How different category of instructions helps the architecture for virtualization. [5]
3. Let's say that you are working in the IT department of a large organization that sells clocks all over the world. The CEO wants to save money and asks for a way to spend less on IT equipment but still wants employees to be able to use a computer that can access the company's files wherever they are in the world. Suggest your solution based on the five-step process of virtualization to the CEO and give the justification for selecting suitable hypervisor. [10]
4.
 - (a) Explain the difference between the system virtual machine and process virtual machine and how these machines work. Also explain about clones, templates, snapshot and OVF. [5]
 - (b) At the last moment, your procurement group was able to contribute additional money for the host and instead of a quad-core server, you can acquire virtualization with four eight-core CPUs. The trade-off is that you will need to support an additional application that consists of 17 virtual machines configured with four vCPUs each. Keeping that same twenty percent reserve, in addition to the 17 larger VMs, how many single vCPU virtual machines will you be able to deploy on this host? [5]
5. With a neat diagram
 - (a) Discuss the role of the hypervisor in virtualization. [5]
 - (b) Explain the design conditions and components of the generic hypervisor. [5]

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