## Q1: Define the following

[1] **Downtime**:  Time turning which the virtual machine on source host is suspended (not available)

[2] **Virtual organization**: is a collection of organizations have the same aims constructed dynamically to share data

[3] **Consolidation**: Reduce the number of active PM by migrating the virtual machines into less number of active Physical machines, so that with PM with no VM can be converted into sleep state to reduce the energy consumption.

[4] **Hard Real time**: refers to a type of computing environment where tasks must be completed within a specific and guaranteed time frame. In other words, hard real-time computing requires that system responses occur within a certain amount of time, without any delay or variation.

[5] **VM hand-off**: it is a technique for seamlessly transforming VM-encapsulated execution to a more optimal offload site as user move

## Q2: What are the similarities and differences between the following

|  | **Cloudlet Computing** | **Mobile Edge Computing** |
|---|---|---|
| **Similarities** | Both MEC and Cloudlet Computing aim to bring computing resources closer to mobile devices to reduce latency and improve the performance of mobile applications<br><br>Both MEC and Cloudlet Computing enable mobile devices to offload processing and storage tasks to nearby servers, which can provide faster response times and lower network traffic<br><br>Both MEC and Cloudlet Computing can be used to provide low-latency and high-bandwidth services to mobile devices | |
| **Differences** | 1. Deployment location: MEC is typically deployed at the edge of the network, such as at base stations or access points, while Cloudlet Computing is deployed in a localized area, such as a campus or a building.<br>2. Scale: MEC is designed to be scalable and support many mobile devices, while Cloudlet Computing is designed to serve a smaller number of devices within a localized area.<br>3. Resource allocation: MEC resources are dynamically allocated to mobile devices based on their needs, while Cloudlet Computing resources are typically pre-allocated to specific devices or applications.<br>4. Ownership: MEC resources are typically owned and managed by network operators or service providers, while Cloudlet Computing resources are owned and managed by the organizations that deploy them. | |

| | Network fault | Dirty Pages |
|---|---|---|
| **Similarities** | Both cause system errors during migration (Memory migration) <br> Both can affect the reliability and availability of the system | |
| **Differences** | VM tries to access page that has not been transferred and trapped at the target and redirect to source | Memory pages that have been modified in the source host since last page transfer |

Select the correct answer from the following

1. b
2. a
3. c
4. b
5. d
6. b
7. d
8. c
9. d
10. b
11. a
12. d
13. b
14. a
15. d