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**Department of Computing Sciences and Mathematics**

**College of Art, Science, and Technology**

**ITEC 205: Cloud Fundamentals**

**Homework Assignment 5: Management and Technical Operations**

**Questions:**

1. What is latency and why it is important within the synchronous replication approach?

Latency is the delay within communication which is important within the synchronous replication approach as it is limited by the distance between locations and the network latency of these distances.

1. What are the different levels of backup and when typically, they are performed?

The different levels of backup are the daily backups which are performed each day, weekly backups which are done on a week-by-week basis, and monthly backups that are done each month.

1. What is Geo-Redundancy and how it is employed within the CDNs?

Geo-Redundancy is the offer of cross-region availability and is employed within the CDNs as caches of content copies to be served locally.

1. What is golden image and how it can be used for replications?

A golden image is where a VM image that has been tested and verified is taken and customized to your needs before being deployed. It can be used for replications by setting configurations that can be reused with each new replication.

1. What is DevOps? and what are the tools used for enabling it?

DevOps is a combination of software development and information technology operations that help increase the ability to deliver applications and services. Tools used for developing DevOps are source tools such as GitHub and Apache subversion, build tools like Jenkins and Microsoft visual studio, testing tools like selenium, pester, vagrant, and release tools like chef and puppet.

1. What is Continuous Integration/Continuous Delivery (CI/CD) paradigm? and how it can be supported by the cloud services?

CI/CD paradigm is when application updates and changes are being released constantly. It will take the application and update it even after it has been released. Cloud services can help support this by setting up a centralized server to be used as updates are needed.

1. What is the difference between Load testing and Regression testing? Provide an example for each technology.

Load testing is to test by trying to mimic or reproduce real-world use scenarios such as testing a large amount of traffic that would be on a website. Regression testing is testing and validating new features and fixes such as an application patch to fix parts of the code.

1. What is the difference between Orchestration and containerization within the context of cloud computing?

Orchestration is used to help free up resources so they can move on to perform other tasks such as the resources used on cloud computing that get moved between the different areas of the cloud. Containerization is used to store items in the areas that are needed so for cloud computing it would move around the items and store them where they are needed to perform tasks.

1. What are the different types of storage resources?

Storage has three different types, object which is used for unstructured files, block that is used for files as blocks or sectors, and file which is used to help solve the problem of multiple endpoints writing to the same destination.

1. What is the difference between BYOL and standard Licenses?

BYOL is a means of bringing the licenses you already own and having them transferred to your new service. Standard licenses are needed to use software and BYOL takes these and lets them transfer over to your new service as otherwise, you would need to pay for an entirely new license.