BE12-R4: INFORMATION STORAGE AND MANAGEMENT

NOTE:

1. **Answer question 1 and any FOUR from questions 2 to 7.**
2. **Parts of the same question should be answered together and in the same sequence.**

Time: 3 Hours **Total Marks: 100**

1.

a) Briefly describe the factors that determine the RAID level selection?
b) Why is class 3 service most preferred for FC communication?
c) What are the major performance considerations for FCIP?
d) Discuss the consequences of downtime or unavailability of data?
e) Briefly describe a scenario where soft zoning is preferred over hard zoning.
f) Briefly describe some security concerns regards to using cloud infrastructure for SAAS.
g) Explain how will you use 'tiered storage' based on access frequency?

(7x4)

2.

a) Briefly discuss the roadmap for implementing enterprise-wide ILM?
b) What is data proliferation? What problems arise due to data proliferation?
c) What is disk service time? What are the components that make up the disk service time?

(3+6+9)

3.

a) Briefly describe the functionality of RAID levels through 5. What types of applications should RAID 5 is used for?

b) A company is building out an environment to support their new web ordering software. The software expected to have a very high transaction rate. The company's data center is located in a building that has limited ability to expand power consumption. What types of disk drives would best suit this company's storage needs? Please provide reasons to justify your answer.

(9+9)

4.

a) Describe the SCSI command model.
b) What is LUN Masking and why it is required?

c) A small bank is expanding their data center, and will be installing more servers and storage to serve their customers better. The bank's primary concern is the security of their customer's data. Which type of zoning (hard or soft) should be implemented in their new data center's SAN? Why?

(4+5+9)

5.

a) Consider a disk I/O system in which an I/O request arrives at the rate of 80 IOPS. The disk service time is 6 ms. Compute the following:
   i) Utilization of I/O controller
   ii) Total response time
   iii) Average queue size
   iv) Total time spent by a request in queue

b) What is Cache? Discuss the structure of Cache? Which type of application benefits the most by bypassing write cache? Why

(9+9)

6.

a) What is NFS? Describe the various versions and variations of NFS?

b) Describe the factors that affect the NAS performance and availability at different levels?

(9+9)

7.

a) What is data center? What are the requirements for the design of a secure data center?

b) What do VLANs virtualize? Discuss VLAN implementation as a virtualization technology?

(9+9)