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10CS/IS765

Seventh Semester B.E. Degree Examination, Jan./Feb. 2023
Storage Area Networks

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART – A

- 1 a. Which are the core elements required for the basic functionality of data center? Explain all key characteristics of data center elements. (10 Marks)
b. What is Information Life-Cycle Management? (02 Marks)
c. Explain the 3 steps process of developing an ILM strategy using the required diagram. (08 Marks)
- 2 a. Discuss in detail the role of cache in the intelligent storage system. (10 Marks)
b. Explain the working of RAID-4 and RAID-5 with a neat diagram. (10 Marks)
- 3 a. Describe the types of 'Direct Attached Storage' (DAS) architectures with figures wherever applicable, which are the benefits and limitations of DAS? (10 Marks)
b. What is 'Fibre channel protocol stack'? Elaborate each of its layers in a diagram showing the functions and protocols. (10 Marks)
- 4 a. What is NAS? What are the benefits of NAS? (06 Marks)
b. List down the factors affecting NAS performance and availability. (06 Marks)
c. What is iSCSI? Explain iSCSI protocol stack with a neat block diagram. (08 Marks)

PART – B

- 5 a. Explain the Architecture of CAS with a neat diagram. List out the features of CAS. (08 Marks)
b. Explain block level storage virtualization with a neat diagram. (06 Marks)
c. Write a short notes on : (06 Marks)
i) Network Virtualization ii) Server Virtualization.
- 6 a. Explain Business Continuity (BC) Planning Life cycle in detail. (06 Marks)
b. Define the following Terminologies : (06 Marks)
i) Disaster Recovery ii) RPO iii) RTO.
c. Explain any two basic backup topologies that are used in a backup Environment. (08 Marks)
- 7 a. What are the five main reasons to consider for creating one or more 'Local Replicas'? Explain. (05 Marks)
b. Define data consistency. Which are the important factors to consider ensuring the data consistency in all replication technologies? (07 Marks)
c. Describe the two basic modes of 'Remote Replication' with a neat diagram. (08 Marks)
- 8 a. Briefly explain the SAN security architectures illustrating the various levels (zones) of storage environment that must be secured. (10 Marks)
b. Explain the concept of Kerberos with a neat diagram. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.