



CBCS SCHEME

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18CS822

Eighth Semester B.E. Degree Examination, Jan./Feb. 2023

Storage Area Networks

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. What is data center? Explain key characteristics of data center with a neat diagram. (05 Marks)
- b. Explain the evolution of storage architecture with a neat diagram. (05 Marks)
- c. Describe volume manager and compute virtualization with a neat diagram. (10 Marks)

OR

- 2 a. Explain disk drive components. (05 Marks)
- b. What is a file system? Explain the process of mapping user files to disk storage. (10 Marks)
- c. Explain the following keywords:
(i) Seek time (ii) Rotational latency (iii) Data transfer rate. (05 Marks)

Module-2

- 3 a. What is RAID? Explain RAID levels with reference to nested RAID, RAID3 and RAID5 with a neat diagram. (10 Marks)
- b. With a neat diagram, explain the structure of read and write operations in cache. (05 Marks)
- c. Explain the types of intelligent storage systems. (05 Marks)

OR

- 4 a. Explain cache management and data protection methods. (05 Marks)
- b. Explain the components of Intelligent Storage Systems. (10 Marks)
- c. Explain the components of fiber channel SAN. (05 Marks)

Module-3

- 5 a. Describe different iSCSI topologies with neat diagram. (07 Marks)
- b. What is FCIP? Explain FCIP protocol stack. (06 Marks)
- c. Describe the benefits of NAS. (07 Marks)

OR

- 6 a. What is NAS? Explain NAS implementation in detail. (10 Marks)
- b. Explain NAS file sharing protocols. (10 Marks)

Module-4

- 7 a. Explain backup and restore operation with neat diagram. (10 Marks)
- b. Describe failure analysis in BC. Explain single point of failure how to mitigate single point of failure. (10 Marks)

OR

- 8 a. Define the following terminologies:
i) MTBF ii) RPO iii) MTTR iv) RTO (10 Marks)
- b. Mention backup topologies. List various backup target solution and explain anyone with a neat diagram. (10 Marks)

Module-5

- 9 a. Describe the uses of local replication. (05 Marks)
b. Explain storage array based local replication in detail. (15 Marks)

OR

- 10 a. Explain host based remote replication with neat diagram. (10 Marks)
b. Differentiate between synchronous and asynchronous remote replication modes. (05 Marks)
c. Explain FCSCAN security architecture with a neat diagram. (05 Marks)

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