CBCS SCHEME

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18CS822

Eighth Semester B.E. Degree Examination, Dec.2023/Jan.2024
Storage Area Networks

Time: 3 hrs. Max. Marks: 100

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

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.

Module-1

1 a. What is Big Data? Explain the big data ecosystem with a neat diagram. **(06 Marks)**
b. Describe the Server-Centric storage architecture and information centric storage architecture with a neat diagram. **(08 Marks)**
c. Explain the key characteristics of a data center. **(06 Marks)**

OR

2 a. Define file. Explain the process of mapping the user files to the disk storage with a neat diagram. **(08 Marks)**
b. Explain the key components of a hard disk with a neat diagram. **(06 Marks)**
c. Describe with a neat diagram, the Block-level access and file level access to data. **(06 Marks)**

Module-2

3 a. Differentiate between Hardware RAID and Software RAID. **(08 Marks)**
b. Explain the RAID techniques-striping, mirroring and parity with neat diagrams. **(12 Marks)**

OR

4 a. Explain the components of a Intelligent storage system with a neat diagram. **(06 Marks)**
b. Illustrate the types of flushing with a neat diagram. **(06 Marks)**
c. Explain the components of FC SAN with neat diagrams. **(08 Marks)**

Module-3

5 a. Explain the three iSCSI topologies with a neat diagrams. **(12 Marks)**
b. Describe the iSCSI protocol stack with a neat diagram. **(08 Marks)**

OR

6 a. Explain the components of NAS with neat diagram. **(06 Marks)**
b. Describe the unified NAS connectivity and Gateway NAS connectivity with neat diagram. **(08 Marks)**
c. Discuss the factors affecting the NAS performance. **(06 Marks)**

Module-4

7 a. What is Information Availability? Explain the causes of Information unavailability. **(04 Marks)**
b. Explain BC planning life cycle with a neat diagram. **(12 Marks)**
c. Describe the single point of failure with a neat diagram. **(04 Marks)**

OR

8	a.	Describe the process of restoring data from an incremental backup with neat diagram.	**(06 Marks)**
	b.	Explain the backup architecture with a neat diagram.	**(06 Marks)**
	c.	Explain Server-based and Serverless Backup with neat diagrams.	**(08 Marks)**

Module-5

9	a.	Discuss the uses of local replicas.	**(05 Marks)**
	b.	Explain the Storage Array Based local replication with a neat diagram.	**(05 Marks)**
	c.	Explain the Pointer-based virtual replication-write to source with neat diagrams.	**(10 Marks)**

OR

10	a.	Explain the LVM-based remote replication and Array-based synchronous remote replication with neat diagrams.	**(10 Marks)**
	b.	Describe the Kerberos authentication process with a neat diagram.	**(10 Marks)**

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