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15CS754

## Seventh Semester B.E. Degree Examination, Feb./Mar. 2022 Storage Area Networks

Time: 3 hrs.

Max. Marks: 80

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

### Module-1

- 1 a. Explain key characteristics of a data center with a neat diagram. (08 Marks)  
b. What is a file system? Explain the process of mapping user files to disk storage with a neat diagram. (08 Marks)

OR

- 2 a. Explain RAID techniques with a neat diagram. (08 Marks)  
b. With a neat diagram, explain the components of an Intelligent Storage System (ISS). (08 Marks)

### Module-2

- 3 a. Explain FC connectivity with a neat diagram. (08 Marks)  
b. What is iSCSI? With a neat diagram explain iSCSI protocol stack. (08 Marks)

OR

- 4 a. Define NAS. With a neat diagram, explain the components of NAS. (08 Marks)  
b. With a neat diagram, explain the concept of object storage and retrieval in OSD systems. (08 Marks)

### Module-3

- 5 a. What is a backup? With a neat diagram, explain the different backup topologies. (08 Marks)  
b. What is a Data deduplication? With a neat diagram, explain source-based data deduplication and Target-Based data deduplication. (08 Marks)

OR

- 6 a. Describe the various Host-Based local replication technologies. (08 Marks)  
b. What is a remote replication? Explain synchronous and asynchronous replication mode in it. (08 Marks)

### Module-4

- 7 a. Explain the benefits of cloud computing. (08 Marks)  
b. Explain the different classification of cloud deployment models. (08 Marks)

OR

- 8 a. Explain the following:  
i) In-Band Virtualization Appliances  
ii) Out-of-Band Virtualization Appliances. (08 Marks)  
b. Explain the Application-Aware storage virtualization with a neat diagram. (08 Marks)

### Module-5

- 9 a. Explain the SAN security architecture with a neat diagram. (08 Marks)  
b. Define Kerberos. Explain Kerberos authorization with a neat diagram. (08 Marks)

OR

- 10 a. Explain storage infrastructure management activities. (08 Marks)  
b. What is Storage tiering? Explain Intra Array storage and Inter-Array storage tiering. (08 Marks)

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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.