

**Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019**  
**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. What is a data center? Explain key characteristics of data center elements with diagram. (08 Marks)  
b. What is a file system? Explain the process of mapping user files to the disk storage. (08 Marks)

**OR**

- 2 a. What is RAID? Explain the RAID levels with reference to nested RAID, RAID3, RAID5 with neat diagram. (08 Marks)  
b. With neat diagram, explain the structure of read and write operations with cache. (08 Marks)

**Module-2**

- 3 a. Explain FC connectivity options with relevant diagram. (08 Marks)  
b. Explain block-level storage virtualization with neat diagram. Explain VSAN in brief. (08 Marks)

**OR**

- 4 a. What is FCoE? Explain the components of FCoE with neat diagram. (08 Marks)  
b. What is NAS? Explain the benefits of NAS. (08 Marks)

**Module-3**

- 5 a. What is business continuity? Explain the BC Terminology in detail. (08 Marks)  
b. Explain Backup and Restore operations with neat diagram. (08 Marks)

**OR**

- 6 a. What is data deduplication? Explain the implementation of data deduplication. (08 Marks)  
b. Explain Synchronous + Asynchronous and Synchronous + Disk Buffered methods of three-site replication with neat diagram. (08 Marks)

**Module-4**

- 7 a. What is cloud computing? Explain the characteristics and benefits of cloud computing? (08 Marks)  
b. Explain the various cloud service models available. (08 Marks)

**OR**

- 8 a. Explain the public cloud and private cloud deployment models in cloud computing. (08 Marks)  
b. Explain the cloud computing infrastructure in detail. (08 Marks)

**Module-5**

- 9 a. Explain FC SAN security architecture with neat diagram. (08 Marks)  
b. Explain the concept of Kerberos with neat diagram. (08 Marks)

**OR**

- 10 a. Explain the storage management activities in detail. (08 Marks)  
b. Explain Information Lifecycle Management (ILM) in detail with challenges. (08 Marks)