



PRESIDENCY UNIVERSITY

BENGALURU

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End - Term Examinations – May / June 2026

Date: 27-05-2026

Time: 01:00pm – 04:00pm

School: SOCSE	Program: B.Tech Computer Science and Engineering (Networks)		
Course Code: CSN2507	Course Name: Storage Area Networks		
Semester: VI	Max Marks: 100	Weightage: 50%	

CO - Levels	C01	C02	C03	C04	C05
Marks	20	20	20	20	20

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks.

10Q x 2M=20M

1.	List out the key characteristics of Big Data.	2 Marks	L1	C01
2.	Explain the need for the evolution of storage architecture.	2 Marks	L2	C01
3.	Define an intelligent storage system.	2 Marks	L1	C02
4.	Outline the purpose of storage provisioning.	2 Marks	L2	C02
5.	Find the basic steps involved in NAS I/O operations during file access.	2 Marks	L1	C03
6.	List any two NAS protocols used in practice.	2 Marks	L1	C03
7.	Explain the role of virtualization in enabling cloud computing.	2 Marks	L2	C04
8.	Define Local Replication and mention one use.	2 Marks	L1	C04
9.	Relate the risk triad to identify a vulnerability in a storage network environment.	2 Marks	L1	C05
10.	What is Information Lifecycle Management (ILM).	2 Marks	L1	C05

Part B

Answer the Questions.

Total Marks 80M

11.	a.	Explain data center infrastructure and discuss its key characteristics	8 Marks	L2	C01
	b.	Summarize the various RAID techniques such as striping, mirroring, and parity with illustrations.	8 Marks	L2	C01
Or					
12.	a.	Demonstrate data protection mechanisms in storage systems with emphasis on RAID	8 Marks	L2	C01
	b.	Illustrate the virtualization and cloud computing concepts then highlighting their importance in modern data centers.	8 Marks	L2	C01
13.	a.	Outline the IP SAN technologies such as iSCSI, FCIP, and FCoE.	8 Marks	L2	C02
	b.	Explain the architecture and working of an intelligent storage system.	8 Marks	L2	C02
Or					
14.	a.	Explain the role of virtualization in SAN environments.	8 Marks	L2	C02
	b.	Illustrate FC SAN zoning and its advantages.	8 Marks	L2	C02
15.	a.	Apply the concept of Network Attached Storage (NAS) to design a storage solution for a university file-sharing environment.	8 Marks	L3	C03
	b.	Choose the complete NAS I/O operation by explaining the steps involved when a client accesses data stored on a NAS device.	8 Marks	L3	C03
Or					
16.	a.	Identify different Business Continuity technology solutions such as fault tolerance, replication, and backup.	8 Marks	L3	C03
	b.	Apply various backup methods to design an effective backup strategy for a cloud-based application environment.	8 Marks	L3	C03
17.	a.	Contrast the working of synchronous and asynchronous remote replication and evaluate their suitability for disaster recovery scenarios.	8 Marks	L4	C04
	b.	Compare local and remote replication techniques in virtualized environments then highlighting their impact on VM migration and data consistency.	8 Marks	L4	C04
Or					
18.	a.	Analyze Cloud Computing Architecture and Infrastructure by breaking down its core components and interactions.	8 Marks	L4	C04
	b.	Distinguish Cloud Deployment Models by analyzing their structures and suitable use cases with examples.	8 Marks	L4	C04
19.	a.	Apply the storage security framework and risk triad to design a secure storage infrastructure for an enterprise, including threat mitigation strategies.	8 Marks	L3	C05
	b.	Identify how security implementations (zoning, LUN masking, RBAC, encryption) can be applied in SAN and IP-SAN environments to prevent unauthorized access.	8 Marks	L3	C05
Or					
20.	a.	Apply suitable solutions to overcome storage infrastructure management challenges in practical situations.	8 Marks	L3	C05
	b.	Develop the monitoring and management of storage infrastructure using relevant tools or techniques.	8 Marks	L3	C05