PRESIDENCY UNIVERSITY

BENGALURU

Make up Examinations – December 2025

Date: 31 – 12- 2025   **Time:** 09:30am – 12:30pm

School: SOCSE	**Program:** B.Tech
Course Code: CSE2054	**Course Name:** Storage Area Networks
Semester: MK	**Max Marks**: 100 — **Weightage**: 50%

CO - Levels	CO1	CO2	CO3	CO4
Marks	26	26	24	24

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 the factors that have contributed to the growth of digital data.	2 Marks	L2	CO1
2	Recall Connectivity with its physical disk components.	2 Marks	L1	CO1
3	List the different kinds of storage media available.	2 Marks	L2	CO1
4	List the key functions of RAID controller.	2 Marks	L1	CO2
5	Describe RAID 1 not a substitute for a backup.	2 Marks	L2	CO2
6	Explain benefits the most bypassing write cache? Justify your answer.	2 Marks	L2	CO2
7	List the Components of OSD.	2 Marks	L1	CO3
8	Define Content-Addressed Storage.	2 Marks	L1	CO3
9	Write the purpose of a backup in data storage and management.	2 Marks	L2	CO4
10	Describe the significance of replica consistency in local replication.	2 Marks	L2	CO4

Part - B

Answer the Questions

Total 80 Marks.

11.	a.	Explain the core elements of data center along with its key characteristics.	10 Marks	L2	CO1
	b.	Illustrate volume manager and compute virtualization with neat diagram.	10 Marks	L2	CO1

or

12.	a.	Explain in detail disk drive components with suitable diagram.	10 Marks	L2	CO1
	b.	Define file system. Explain the process of mapping user files to disk storage.	10 Marks	L2	CO1

13.	a.	Define RAID. List and Explain different RAID levels with reference to nested RAID, RAID3 and RAID5 with neat diagram.	10 Marks	L2	CO2
	b.	With neat diagram explain the structure of read and write operations in cache.	10 Marks	L2	CO2

or

14.	a.	Explain the components of Intelligent Storage Systems.	10 Marks	L2	CO2
	b.	Discuss the various components of Fibre Channel (FC) SAN.	10 Marks	L2	CO2

15.	a.	Summarize Object-Based Storage Architecture with neat diagram	10 Marks	L2	CO3
	b.	Explain the process of storing objects in OSD and retrieving objects in OSD with neat sketch.	10 Marks	L2	CO3

Or

16.	a.	Explain Block-level Storage Virtualization and Virtual SAN (VSAN) in detail with neat diagram	10 Marks	L2	CO3
	b.	Illustrate the Block I/O request and Object I/O request.	10 Marks	L2	CO3

17.	a.	With a neat diagram, explain the steps involved in backup and restore operation	10 Marks	L2	CO4
	b.	Discuss different backup topologies in detail.	10 Marks	L2	CO4

Or

18.	a.	Explain the uses and challenges of local replication.	10 Marks	L2	CO4
	b.	Explain storage array based local replication in detail.	10 Marks	L2	CO4

***** BEST WISHES *****