

Roll No



**PRESIDENCY UNIVERSITY
BENGALURU**

**SCHOOL OF ENGINEERING
END TERM EXAMINATION - JUN 2023**

Semester : Semester IV - 2021

Course Code : CSE2054

Course Name : Sem IV - CSE2054 - Storage Area Networks

Program : IST

Date : 12-JUN-2023

Time : 9.30AM - 12.30PM

Max Marks : 100

Weightage : 50%

Instructions:

- (i) Read all questions carefully and answer accordingly.*
- (ii) Question paper consists of 3 parts.*
- (iii) Scientific and non-programmable calculator are permitted.*
- (iv) Do not write any information on the question paper other than Roll Number.*

PART A

ANSWER ALL THE QUESTIONS

(10 X 2 = 20M)

1. Define Physical Tape Library and Virtual Tape Library.
(CO4) [Knowledge]
2. Define the terms:
a. Device Driver.
b. Logical Volume.
(CO1) [Knowledge]
3. Define the structure of Object.
(CO3) [Knowledge]
4. Define Block I/O request and Object I/O request.
(CO3) [Knowledge]
5. Define Synchronous Replication Mode and Asynchronous Replication Mode.
(CO4) [Knowledge]
6. What is Cache mirroring and Cache vaulting?
(CO2) [Knowledge]
7. List the factors that have contributed to the growth of digital data and define them.
(CO1) [Knowledge]
8. List the key functions of the RAID controllers.
(CO2) [Knowledge]

9. List and define the common terms used to represent various entities and operations in a replication environment.
(CO4) [Knowledge]
10. What is Object based storage devices (OSD) and Unified storage.
(CO3) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS

(5 X 10 = 50M)

11. Outline the local replication with its uses and consistency of replicated file system and replicated databases.
(CO4) [Comprehension]
12. Compare High end storage systems to Midrange storage system with the help of neat diagram.
(CO2) [Comprehension]
13. Show how can you create virtualized data center by virtualizing components of data center.
(CO1) [Comprehension]
14. Explain two types of virtualization in SAN.
(CO3) [Comprehension]
15. Summarize backup and recovery considerations. Outline Backup methods with real time example.
(CO4) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS

(2 X 15 = 30M)

16. The growth of unstructured data has posed new challenges to the IT administrators and storage managers. Identify and demonstrate the storage solution which can handle the overhead to the NAS in terms of managing large number of permissions and nested directories.
(CO3) [Application]
17. With growing business and regulatory demands for data storage, retention and availability, organizations are faced with the task of backing up an ever-increasing amount of data. This task becomes more challenging with the growth of information, stagnant IT budgets, and less time for taking backups. Moreover, organizations need a quick restore of backed up data to meet business SLAs. Categorize the backup based on granularity and illustrate its restore operations with respect to each category.
(CO4) [Application]