PRESIDENCY UNIVERSITY
BENGALURU   **SET B**

SCHOOL OF ENGINEERING
END TERM EXAMINATION - JAN 2024

Semester : Semester V - 2021
Course Code : CSE2054
Course Name : Storage Area Networks
Program : B.Tech.

Date : 05-JAN-2024
Time : 9:30AM - 12:30 PM
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   **5 X 2M = 10M**

1. What is Application Virtualization?

(CO1) [Knowledge]

2. Define the number of minimum disks required for RAID 0, RAID 1, RAID 3, RAID 4, RAID 5, RAID 6,RAID 0+1 and RAID 1+0 .

(CO2) [Knowledge]

3. Define the structure of Object.

(CO3) [Knowledge]

4. Recall terms point in time (PIT) and snapshot.

(CO4) [Knowledge]

5. What is Remote Replication? List 2 basic modes of remote replication.

(CO4) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS   **5 X 10M = 50M**

6. Outline Host access to data. Explain direct attached storage in detail.

(CO1) [Comprehension]

7. Explain read operation and write operation with cache in detail.

(CO2) [Comprehension]

8. Demonstrate the three basic topologies used in backup environment with the help of neat diagram.

(CO3) [Comprehension]

9. Outline the local replication with its uses and consistency of replicated file system and replicated databases.

(CO4) [Comprehension]

10. Explain key characteristics of data center and explain how to protect data on cache using cache mirroring and cache vaulting process.

(CO2,CO1) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS   **2 X 20M = 40M**

11. The growth of unstructured data has posed new challenges to the IT administrators and storage managers. With this growth, traditional NAS, which is a dominant solution for storing the unstructured data, has become inefficient which has lead to the development of new storage solution called OSD. Construct the data storage and retrieval process of OSD system.

(CO3) [Application]

12. 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. Illustrate Backup and restore operations in backup environment.

(CO4) [Application]