



K.S. SCHOOL OF ENGINEERING AND MANAGEMENT, BENGALURU - 560109
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SESSION: 2022-2023 (EVEN SEMESTER)
ASSIGNMENT 1

Batch	2019
Year/Semester/Section	IV/VIII/A&B
Course Code/Title	18CS822/Storage Area Network
Name of the Course Incharge	Mrs. Nita Meshram & Mrs. Thejaswini M S

Assignment No: 1		Total marks: 15		
Date of Issue: 07/03/2023		Date of Submission: 13/03/2023		
Sl. No.	Assignment Questions	K Level	CO	Marks
1.	Explain Data Center elements and its characteristics.	Understanding K2	CO1	2
2.	Elaborate the following terms. i. Host ii. Connectivity iii. Storage iv. Application in classic and virtual environment	Understanding K2	CO1	2
3.	Give main idea about File system. Explain the process of mapping user files to disc storage.	Understanding K2	CO1	2
4.	Describe the limitation of server-centric IT architecture and Explain the approach to overcome it.	Understanding K2	CO1	2
5.	Give main idea about disk drive components.	Understanding K2	CO1	2
6.	Summarize RAID. Explain all the RAID levels with neat diagram.	Understanding K2	CO2	1
7.	Explain the components of intelligent storage system.	Understanding K2	CO2	1
8.	Illustrate the different techniques available to perform RAID levels operations.	Understanding K2	CO2	1
9.	Recognize the different types of intelligent storage systems.	Understanding K2	CO2	1
10.	Describe Read operations in cache.	Understanding K2	CO2	1

Nita Meshram
Course In charge 7/3/23

Thejaswini M S
Head of the Department 7/3/23



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MODULE 1

1. **Explain** the evaluation of storage architecture.
2. **Describe** compute virtualization in detail.
3. **Give main idea** about disk drive components.
4. **Illustrate** the key characteristics of data center elements.
5. **Describe** the limitation of server-centric IT architecture and explain the approach to overcome it.
6. **Define** direct attached storage and **Explain** the types of DAS. **Explain** the advantages and disadvantages of DAS.
7. **Define** Connectivity **and Explain** the physical components of connectivity.
8. **Characterize** disk partitioning and concatenation process in LVM.
9. **What is a file system? Generalize** the process of mapping the file system to disk storage
10. **Elaborate** the concept of volume manager
11. **Explain** Virtual provisioning in detail.
12. **Discuss** Data center elements and its characteristics.
13. **Give main idea** on the following terms.
 - a. Seek Time
 - b. Rotational Latency
 - c. Data Transfer Rate
14. **Explain** the process of mapping user files to disc storage with suitable diagram.
15. **Explain** the following terms.
 - a. Host
 - b. Connectivity
 - c. Storage

MODULE 2

16. **What** is RAID? **Illustrate** the all-RAID levels with neat diagram. **Compare** all the RIAD levels.
17. **Outline** the various techniques based on which RAID levels are defined.
18. **Discuss** intelligent storage systems and its components with neat diagram.
19. **Explain** the read operation in cache.
20. **Explain** the write operation in cache.



IA2 QUESTION BANK

Module 2

1. **Elaborate** in SAN and it's evolution.
2. **Explain** the following components of SAN.
 - i. Storage array.
 - ii. Cabling.
3. **Explain** the following components of SAN.
 - i. Node ports.
 - ii. Interconnect device
4. **Give main idea** on Fiber channel.
5. **Explain** about SAN management software.

Module 3

6. **Elaborate** on iSCSI. **Expand upon** iSCSI PDU?
7. **Discuss** two types of iSCSI names commonly used.
8. **Interpret** iSCSI command sequencing.
9. **Outline** iSCSI protocol stack.
10. **Summarize** NAS file sharing protocol and **Explain** components of NAS.
11. **Summarize** NAS and it's benefits.
12. **Recognize** the process of handling I/Os in a NAS environment with neat diagrams.
13. **Explain** the components of Fiber Channel Over Ethernet (FCoE).
14. **Give main idea** about gateway NAS implementation in detail.
15. **Elaborate** on FCIP along with protocol stack.
16. **Outline** the factors affecting NAS performance.



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MODULE 4

1. **Define** Business continuity. **Explain** BC terminology in detail.
2. **Interpret** Backup architecture in detail.
3. **Outline** different backup topologies.
4. **Discuss** recovery consideration and **Identify** types of backup methods.
5. **Interpret** the different Strategies to meet RTO and RPO targets.
6. **Outline** backup granularity. Explain the steps involved in incremental backup granularity.
7. **Explain** the following,
 1. Backup methods
 2. Backup and Restore operations.
8. **Demonstrate** Business planning Lifecycle with diagram.
9. **Outline** the various terms to check information availability in business continuity.
10. **Generalize** the Task involved in business impact analysis.
11. **Explain** LAN based backup topology in detail with figure.
12. **Define** single point of failure and how to resolve this.

MODULE 5

13. **Demonstrate** about storage array based remote replication in synchronous mode.
14. **Define** replica consistency. **Explain** how replicated database consistency works
15. **Identify** various uses of Local Replication. **Explain** storage array based Local Replication with neat diagram.
16. **Give main idea** about Disk buffered replication mode with respect to remote replication.
17. **Discuss** how LVM based remote replication technology works. Explain advantages and disadvantages of LVM.

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