

COLLEGE OF ENGINEERING, PUNE

(An Autonomous Institute of Govt. of Maharashtra)

END SEM EXAM

B.Tech. Computer Engineering and Information Technology

CT- 405 - Storage and Virtualization

Academic Year: 2013 -14

Semester -I

Instructions:

1. Answer any Six Questions.
2. Draw neat diagrams wherever necessary.
3. Make appropriate assumptions if required.
4. Figures to the right indicate full marks.

Timing: 3 hrs

Max. Marks: 60

		Marks
Q. 1	A) Explain the concept of eventual consistency with example.	05
	B) What are different file sharing protocols? When to use each of them?	05
Q. 2	A) Is it possible to implement ILM in SAN? Justify your answer with example.	03
	B) Explain the NFS along with the system calls used between client and server.	02
	C) Explain four major characteristics and base principles on which Cloud storage solutions are developed.	05
Q. 3	A) Explain RAID 5 and RAID 6. Which is better?	05
	B) What are HA (High Availability) properties? Explain each in details.	05
Q. 4	A) What is cluster? Explain different component of cluster.	05
	B) What is replication and why it is required? What are RPO and RTO?	03
	C) Explain rsync daemon in general and in clustered environment.	02

Q.5

Design a NAS system for following requirement

10

- Organization with Windows and Linux Client
- Current Storage requirement 1 TB but it may grow till 10 TB in future
- High Data Availability
- High performance
- Disaster Recovery
- Old data need to kept for 3 years

Draw hardware component and software stack diagram of system. Give valid reason for using each component.

Explain how following is achieved in your system

1. Fail over (node, network, storage)
2. Data protection
3. High Availability
4. Disaster recovery
5. High Performance
6. ILM
7. How your system stand against network failure?

Q.6

A) Explain following snapshot techniques Copy-on-write, redirect-on-write and split mirror.

05

B) Explain iSCSI Architecture and Packaging.

05

Q.7

A) What is Logical Volume Managers (LVM)?

03

B) What is PLOGI? Explain it is in details.

04

C) Explain file locking in NFS.

03