USN ☐☐☐☐☐☐☐☐☐☐

Eighth Semester B.E. Degree Examination, December 2010
Storage Area Networks

Time: 3 hrs.
Max. Marks:100

Note: *Answer any FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1   a. Explain server centric and storage centric IT architecture, with neat diagrams.   (12 Marks)
    b. Explain the benefits of storage networks on business applications.   (08 Marks)

2   a. With a neat diagram, explain the architecture of intelligent disk subsystem.   (05 Marks)
    b. With a neat diagram, explain the different ways of connecting I/O channels to internal hard disks in a disk subsystem.   (08 Marks)
    c. Explain raid 4 and raid 5.   (07 Marks)

3   a. Explain :
        i)   Cache on hard disk
        ii)   Write cache in controller of disk
        iii) Read cache in raid controller.   (06 Marks)
    b. Explain remote mirroring. What is the advantage of remote mirroring?   (05 Marks)
    c. Briefly explain the physical I/O path from CPU to storage system.   (05 Marks)
    d. What is SCSI? How SCSI addresses its devices?   (04 Marks)

4   a. Explain the service classes in fibre channel.   (08 Marks)
    b. What are exchange, sequence and frame? Explain with an example.   (06 Marks)
    c. Explain :
        i)   Addressing in fibre channel.
        ii)   Fibre channel frame format.   (06 Marks)

PART – B

5   a. Explain : i) Journaling ;   ii) Snapshots ;   iii) Volume manager.   (06 Marks)
    b. Explain network attached server.   (08 Marks)
    c. Compare NAS and fibre channel SAN.   (06 Marks)

6   a. What is storage virtualization? Briefly explain the implementation considerations.   (10 Marks)
    b. Briefly explain storage virtualization on block or file level.   (05 Marks)
    c. Briefly explain symmetric storage virtualization.   (05 Marks)

7   a. Explain fibre channel switch and HBA.   (12 Marks)
    b. Explain switch's operating system.   (08 Marks)

8   Write short notes on :
    a. IP storage
    b. Asymmetric storage virtualization
    c. NAS hardware architecture
    d. Device drivers.   (20 Marks)

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