USN ☐☐☐☐☐☐☐☐☐☐

06CS/IS833

Eighth Semester B.E. Degree Examination, May/June 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 the basic requirements of storage systems. **(10 Marks)**
   b. Differentiate storage-centric IT architecture from server-centric IT architecture. **(10 Marks)**

2 a. With a neat diagram, explain the architecture of intelligent disk storage system [DSS] **(07 Marks)**
   b. Describe the I/O techniques used in disk storage system inorder to increase fault-tolerance of systems. **(08 Marks)**
   c. How are disk storage systems classified based on its complexity? Explain just a bunch of disks [JBOD]. **(05 Marks)**

3 a. What are the two major goals of RAID system? Explain the three major techniques used in RAID configurations. **(08 Marks)**
   b. An application generates 7650 IOPS with 50% being READ operation with disk handling capacity of 180 IOPS. Determine the disk load and number of disks required in RAID 5 configuration. {Given write penalty of RAID 5 is 4}. **(04 Marks)**
   c. How RAID 1 + ϕ and RAID ϕ + 1 are different? Explain. Why RAID ϕ not an option for data protection and high availability? Justify. **(08 Marks)**

4 a. Explain fiber channel(FC), with reference to protocol stack, addressing modes and login techniques. **(10 Marks)**
   b. Write short notes on SCSI. **(06 Marks)**
   c. Why class three service is most preferred for FC communication? **(04 Marks)**

PART – B

5 a. Compare NAS and fiber channel SAN. **(06 Marks)**
   b. Write an explanatory note on shared disk file system. **(06 Marks)**
   c. With a neat sketch, explain the components of network attached storage. [NAS] **(08 Marks)**

6 a. What is virtualization? Discuss the four forms of virtualization. Describe the implementation considerations for virtualization. **(12 Marks)**
   b. Explain storage virtualization at block-level, with a necessary diagram. **(08 Marks)**

7 a. Write short notes on FC switches. **(06 Marks)**
   b. What is HBA? Discuss the benefits of using multiple HBAs on a host. **(04 Marks)**
   c. Differentiate storage virtualization in server and network level. **(10 Marks)**

8 a. Describe the components of switch operating system, in detail. **(10 Marks)**
   b. What is business continuity [BC]? Discuss the role of storage network in business continuity. **(10 Marks)**

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