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Third Semester M.Tech. Degree Examination, Dec. 2013 / Jan 2014.

Advances in Storage Area Networks

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1
 - a. What are the benefits of storage networks? With neat diagrams, describe the process of replacing a server with storage networks. (10 Marks)
 - b. Describe the problem size and access. (04 Marks)
 - c. With a neat diagram, explain the instant copy operation of intelligent disk sub system. (06 Marks)
- 2
 - a. Describe the I/O channels used in disk storage system to increase the fault tolerance of the system. (08 Marks)
 - b. Explain briefly how parity blocks are calculated in RAID4 and RAID5. How RAID5 over comes limitations of RAID4. (06 Marks)
 - c. Bring out the differences between synchronous and asynchronous and asynchronous remote mirroring. (06 Marks)
- 3
 - a. Explain the different service classes in fiber channel. Why class 3 services is most preferred for fibre channel communication? (07 Marks)
 - b. Explain the fibre channel protocol stack and the login techniques. (09 Marks)
 - c. List the benefits of fibre channel protocols over conventional protocols. (04 Marks)
- 4
 - a. Explain the fibre channel port types. (06 Marks)
 - b. With neat diagram, explain the three topologies of fibre channel standard. (06 Marks)
 - c. Explain the I/O manager functionality in NAS hardware architecture. (08 Marks)
- 5
 - a. Explain : i) Volume manager ii) Journalling. (04 Marks)
 - b. Describe the performance bottleneck in file servers. (08 Marks)
 - c. What is storage virtualization? Briefly explain the implementation considerations. (08 Marks)
- 6
 - a. List the advantages and disadvantages of storage virtualization in storage networks. (08 Marks)
 - b. Explain storage virtualization at block – level and file – level with necessary diagram. (08 Marks)
 - c. Briefly explain symmetric storage virtualization. (04 Marks)
- 7
 - a. With a neat diagram, explain the basic components of switches operating system. (08 Marks)
 - b. Describe the basic functions of Host Bust Adaptor (HBA). (08 Marks)
 - c. Briefly explain the four supporting components critical to SAN configuration and operation. (04 Marks)
- 8

Write short notes on :

 - a. Capacity planning.
 - b. Availability and Serviceability.
 - c. Shared disk file systems.
 - d. Software components of NAS. (20 Marks)