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13MCA555

**Fifth Semester MCA Degree Examination, Dec.2015/Jan.2016**

**Storage Area Networks**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions.**

- 1
  - a. List and explain, essential core elements for the basic functionality of a data center. (03 Marks)
  - b. Explain the key characteristics of a data center with a neat diagram. (07 Marks)
  - c. Explain Information Lifecycle and ILM. (06 Marks)
  - d. Consider a disk I/O system in which an I/O request arrives at a rate of 100 I/OS per second. The service time,  $R_s$ , is 8ms. Find utilization, response time, average queue size and time spent by a request in a queue. (04 Marks)
  
- 2
  - a. Explain RAID 0 and RAID 1 levels. (06 Marks)
  - b. Compare the principle of operations in RAID 01 and RAID 10 levels. (04 Marks)
  - c. With a neat diagram, explain different components of an intelligent storage system. (10 Marks)
  
- 3
  - a. Explain fibre channel, with reference to protocol stack and addressing modes. (10 Marks)
  - b. What is zoning? Explain various types of zoning with a neat diagram. (10 Marks)
  
- 4
  - a. Explain the components of NAS and briefly explain two types of NAS implementations. (10 Marks)
  - b. Discuss FCIP in terms of topology, performance and security. (10 Marks)
  
- 5
  - a. What is content Addressed storage? Explain the features and benefits of CAS. (10 Marks)
  - b. Explain the types of storage virtualization. (10 Marks)
  
- 6
  - a. List and explain the stages of BC planning lifecycle. (10 Marks)
  - b. Briefly explain different backup technologies. (10 Marks)
  
- 7
  - a. Define replication. What are the uses of local replicas? (06 Marks)
  - b. Give examples for host based local replication and storage array based replications. (04 Marks)
  - c. Differentiate between synchronous and asynchronous remote replications. (10 Marks)
  
- 8
 

Write short notes on :

  - a. Kerberos
  - b. Storage management activities
  - c. Logical Unit Number
  - d. Evolution of SCSI. (20 Marks)

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