

# ONE TIME EXIT SCHEME

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10CS/IS765

## Seventh Semester B.E. Degree Examination, April 2018 Storage Area Networks

Time: 3 hrs.

Max. Marks: 100

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

### PART – A

- 1 a. With a neat diagram, explain the key characteristics of data center elements. (08 Marks)  
b. Explain the key challenges in managing information. (03 Marks)  
c. Consider a disk I/O system in which an I/O request arrives at the rate of 100 I/O per second. The disk service time,  $R_s$  is 8ms.
  - 1) Compute the following
    - i) Utilization of I/O controller
    - ii) Total Response time
    - iii) Average Queue size
    - iv) Total time spent by a request in a Queue.
  - 2) Compute the proceeding parameter if the service time is halved. (09 Marks)
- 2 a. Explain the following techniques used in RAID
  - i) Stripping
  - ii) Mirroring
  - iii) Parity. (06 Marks)  
b. With the aid of a neat diagram, explain
  - i) RAID 1 + 0
  - ii) RAID 0 + 1. (06 Marks)  
c. Describe the components of the intelligent storage system. (08 Marks)
- 3 a. Compare the various features of IDE/ATA with SCSI. (06 Marks)  
b. With a neat diagram explain SCSI – 3 client server modes. (05 Marks)  
c. Explain the various Interconnectivity options supported by the Fibre channel architecture. (09 Marks)
- 4 a. Enlist the various Benefits offered by NAS. (08 Marks)  
b. What are the factors that affect NAS performance at different levels? (07 Marks)  
c. Describe iSCSI protocol stack with the aid of a neat diagram. (05 Marks)

### PART – B

- 5 a. Explain content Addressed Storage (CAS) architecture in detail. (08 Marks)  
b. Discuss the various storage virtualization challenges that need to be addressed. (04 Marks)  
c. Describe the different forms of virtualization. (08 Marks)
- 6 a. Explain the Business continuity planning life cycle. (10 Marks)  
b. Explain the Backup and Restore operations with the aid of a neat diagram. (10 Marks)
- 7 a. Compare the various storage array based replication technologies. (10 Marks)  
b. Explain the basic modes of Remote replication with neat diagram. (10 Marks)
- 8 a. Enlist any five protection strategies that must be implemented in various security zones in data centers. (10 Marks)  
b. Describe the various management tasks in storage infrastructure. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any violation of identification issued by evaluator and for completion within 47 & 50 will be treated as malpractice.