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10CS/IS765

**Seventh Semester B.E. Degree Examination, Dec.2016/Jan.2017**  
**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. Discuss the key characteristics of a Data Centre, with a neat diagram. (06 Marks)  
b. What is information life cycle management? Describe ILM implementation in detail, with its benefits. (10 Marks)  
c. Consider a disk I/O system in which an I/O request arrives at the rate of 80 IOPS. The disk service time is 6 ms. Compute (i) Utilization of I/O controller (ii) Total response time. (04 Marks)
- 2 a. Describe RAID levels with reference to nested RAID, RAID 3, RAID 5 with neat diagram. (10 Marks)  
b. With the neat diagram, explain the structure of read and write operations in cache. (10 Marks)
- 3 a. Explain connectivity options of FC architecture with relevant diagram. (10 Marks)  
b. Explain the components of ISS with reference to LUN and LUN masking with diagram. (06 Marks)  
c. Explain FC frame. (04 Marks)
- 4 a. Describe NAS implementation and benefits with neat diagram. (10 Marks)  
b. What is iSCSI? Explain protocol stack with neat diagram. (10 Marks)

**PART – B**

- 5 a. Explain object storage and retrieval in CAS with suitable diagrams. (10 Marks)  
b. Discuss storage virtualization types in detail and also discuss its challenges. (10 Marks)
- 6 a. What is information availability? Explain how information availability is defined and measured. (08 Marks)  
b. Describe the failure analysis in BC. Mention some important BC technology solutions. (12 Marks)
- 7 a. Explain Pointer based virtual replication with respect to write to source and write to target with neat diagram. (12 Marks)  
b. What is remote replication? Explain different modes of remote replication with neat diagram. (08 Marks)
- 8 a. Write a note on risk traid. Explain in detail. (10 Marks)  
b. Explain storage management activities in detail, with example. (10 Marks)

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2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.