Seat No.	

T.E.(Computer Science and Engineering) (Semester-VI) Examination, May - 2017
STORAGE NETWORKS
Sub. Code : 66861

Day and Date : Thursday, 04-05-2017 **Total Marks : 100**
Time : 2.00 p.m. to 5.00 p.m.

Instructions :
1) **Figures to the right indicate full marks.**
2) **Question no. 4 & Question no. 8 are compulsory.**
3) **Attempt any Two Questions from Q.1 to Q.3 and from Q.5 toQ.7.**

Q1) a) Explain key characteristics of Data Center Elements? **[8]**

b) The average I/O size of an application is 64 KB. The following specifications are available from the disk manufacture: average seek time = 5 ms, 7,200 rpm, transfer rate = 40 MB/s. Determine the maximum IOPS that could be performed with the disk for this application. **[8]**

Q2) a) Describe iSCSI Protocol Stack? **[8]**

b) List out the benefits of NAS? **[8]**

Q3) a) Explain the different Fibre Channel Topologies? **[8]**

b) An application has 1,000 heavy users at a peak of 2 IOPS each and 2,000 typical users at a peak of 1 IOPS each, with a read/write ratio of 2:1. It is estimated that the application also experiences an overhead of 20 percent for other workloads. Calculate the IOPS requirement for RAID 1, RAID 3, RAID 5, and RAID 6.? **[8]**

Q4) Write a note on (Attempt any Three) **[18]**

a) Components of Intelligent Storage System.

b) FC-2: Data transfer.

c) Components of NAS.

d) Direct Access File System (DAFS).

Q5) a) Demonstrate Asymmetric storage virtualization with diagram? [8]

b) Discuss the limitations of non-virtualized storage networks? [8]

Q6) a) Explain BC Planning Lifecycle? [8]

b) Illustrate the various business/technical considerations for implementing a backup solution? [8]

Q7) a) Explain LVM-Based Replication with clean & neat diagram? [8]

b) Describe Backup Granularity? [8]

Q8) Write a note on (Attempt any Three) [18]

a) Uses of Local Replicas.

b) Restore & Restart Consideration in backup.

c) Virtualization in I/O path.

d) Storage security framework.

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