Seat No.	

SE - 208

Total No. of Pages : 2

T.E. (CSE) (Semester - VI) Examination, November-2018

STORAGE NETWORKS (New)

Sub. Code : 66861

Day and Date : Thursday, 15 - 11 - 2018 **Total Marks : 100**

Time : 02.30 p.m. to 05.30 p.m.

Instructions :
1) **Attempt any three questions from each section.**
2) **Figures to the right indicate full marks.**
3) **Assume suitable data wherever necessary.**

SECTION - I

Q1) a) Explain the Core Elements of Data Center. Describe how to manage storage infrastructure. **[8]**

b) Explain following in relation with Information Lifecycle. **[8]**

i) Information Lifecycle management (ILM)

ii) ILM Implementation

iii) ILM Benefits

Q2) a) Explain striping, mirroring and parity technique. **[8]**

OR

Solve the following, **[8]**

i) The average I/O size of an application is 128 KB. The following specifications are available from the disk manufacturer: average seek time = 10 ms, 7,200 RPM, transfer rate = 60 MB/s. Determine the maximum IOPS that could be performed with this disk for this application.

ii) Taking this case as an example, explain the relationship between disk utilization and IOPS.

b) Solve the following, **[8]**

Consider that, the capacity requirements for an application is 1.46 TB. The peak workload generated by the application is estimated at 9000 IOPs. The vender specifies that a 146GB, 15000rpm drive is capable of a maximum of 180 IOPS (U=70%) Find number of Disks required to meet the application demand.

P.T.O

Q3) a) Explain front end command queuing techniques in Intelligent storage System. How the Read and Write operations are performed with cache? **[8]**

b) What are the different types of DAS? Explain SCSI Command Model. **[8]**

Q4) Solve **ANY TWO** of the following questions.

a) Describe Fibre Channel connectivity and fibre channel ports. Explain Fibre Channel Protocol Stack. **[9]**

b) Explain different Network attached storage implementations. Describe NAS File-Sharing Protocols Explain NAS I/O Operations. **[9]**

c) Explain Components of iSCSI, iSCSI Host Connectivity, Topologies for iSCSI Connectivity, iSCSI Protocol Stack, iSCSI Discovery and iSCSI session. **[9]**

SECTION - II

Q5) a) Explain symmetric and Asymmetric Storage Virtualization in Network. **[8]**

b) Explain the following, **[8]**

i) information availability

ii) Reliability

iii) Accessibility

iv) Timeliness

Q6) a) What are the objectives of virtualization? **[8]**

b) Explain how data consistency is achieved in local replication. **[8]**

Q7) a) Explain storage virtualization in the server. **[8]**

b) Describe various types of Backup and Restore Granularities with examples. **[8]**

Q8) Attempt Any **TWO** of the following.

a) Explain Storage Virtualization in I/O Path and storage devices. **[9]**

b) Explain different Backup Topologies **[9]**

c) Explain BC terminology and life cycle. **[9]**