

(4)

TCS-710

importantly, the company also needs performance for its mission-critical applications. Which storage topology would you recommend (SAN, NAS, IPSAN) and why?

(CO5)

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**B. TECH. (SEVENTH SEMESTER)
END SEMESTER**

EXAMINATION, Dec, 2022

STORAGE NETWORKS

Time : Three Hours

Maximum Marks : 100

- Note :**
- (i) All questions are compulsory.
 - (ii) Answer any *two* sub-questions among (a), (b) and (c) in each main question.
 - (iii) Total marks in each main question are twenty.
 - (iv) Each sub-question carries 10 marks.
1. (a) Define server centric IT architecture and storage centric IT architecture with advantages and limitations. (CO1)
 - (b) Explain the core elements of a University data center. (CO1)

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(c) List the factors contributed to the growth of digital data. (CO1)

2. (a) Illustrate RAID 3. List out its benefits. Why is RAID 1 not a substitute for a backup? (CO2)

(b) Illustrate block level and file level storage virtualization. (CO2)

(c) How can a block level virtualization implementation can be used as a data migration tool? Explain how data migration will be accomplished and discuss the advantages of using this method for storage. Compare this method to traditional migration methods. (CO2)

3. (a) (i) What is HBA? Discuss the benefits of using multiple HBAs on a host.
(ii) Why do formatted disks have less capacity than unformatted disks? (CO3)

(b) What is Striping? Why is RAID 0 not an option for data protection and high availability? (CO3)

(c) Illustrate the elements, connectivity and management of Network Attached Storage (NAS). (CO3)

4. (a) What is IP SAN? Discuss the data storage applications that could benefit from an IP SAN solution. (CO4)

(b) Why isn't Fibre Channel used often for the internal drives inside system cabinets? List the four interconnects from slowest to fastest performance for storage networking applications. (CO4)

(c) Explain the difference between RAID 1+0 and RAID 0+1. (CO4)

5. (a) What is DAS? Give an example of when DAS is a good solution. (CO5)

(b) Illustrate Fibre Channel (FC) interconnectivity options that support FC architecture. Discuss the advantages of FC-SW over FC-AL. (CO5)

(c) A large company is considering a storage infrastructure-one that is scalable and provides high availability. More