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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Third Semester, M.Tech. - Computer Science and Engineering (MCSE)
Semester End Examination; Dec - 2017 / Jan - 2018
Data Storage Technologies

Time: 3 hrs   *Max. Marks: 100*

*Note: Answer **FIVE** full questions, selecting **ONE** full question from each unit.*

UNIT - I

1 a.	Illustrate the advantages of storage-centric IT architecture using a case study : Replacing a server with storage network.	10
b.	Analyse and define caching in the field of disk sub system? Differentiate between two types of cache in disk sub systems.	10
2 a.	Analyse and describe the two main goals of RAID? Describe different RAID levels.	10
b.	Describe the following functionalities of disk sub systems : i) Instant ii) Remote mirroring iii) LUN masking.	10

UNIT - II

3 a.	Analyse and describe how fiber channel protocol stack is subdivided into five layers?	10
b.	Illustrate the comparison table of fiber channel, iSCSI and NAS.	10
4 a.	In Network Attached Storage (NAS), analyse and describe how shared disk file systems can achieve higher performance than classical network file systems?	10
b.	Describe the three different topologies of fiber channel.	10

UNIT - III

5 a.	Define the objectives of virtualization. List the limitations related to architecture and its implementation.	10
b.	Describe how storage virtualization is achieved on various levels of the storage network?	10
6 a.	Describe the advantages and disadvantages of symmetric and asymmetric storage utilizations.	10
b.	Discuss how storage virtualization is achieved on block level and on file level?	10
7 a.	Explain the basic components of the switches operating system.	10
b.	Using OSI model, describe how network devices operate on layers?	10
8 a.	Explain how NAS software components are categorized into three components?	10
b.	Describe with a neat diagram SAN configurations for an entry-level.	10

UNIT - V

9 a.	Desicribe the two types of devices of storage networks with respect to management interfaces.	10
b.	Explain in-band management in fiber channel SAN.	10
10 a.	Write a short note : i) Simple Network Management Protocol (SNMP) ii) CIM and WBEM.	10
b.	Describe the five core components of storage networks supported by management system.	10

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