



U.S.N

--	--	--	--	--	--	--	--	--	--

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

(An Autonomous Institution affiliated to VTU, Belagavi)

Second Semester, M. Tech - Computer Engineering (MCEN)

Semester End Examination; June - 2017

### Storage Area Networks

Time: 3 hrs

Max. Marks: 100

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

#### UNIT - I

- 1 a. List out the differences between server centric and storage centric IT architecture with the help of a neat diagram. 10
- b. Explain how the internal I/O channels are designed to increase fault tolerance of the disk subsystem? 10
- 2 a. Explain how storage virtualization is achieved using RAID 4 and RAID 5? 10
- b. Explain the architecture of intelligent disk subsystem used in instant copies with the help of a neat diagram. 10

#### UNIT - II

- 3 a. Describe the significance of SCSI for storage networks. 10
- b. Explain fiber channel protocol stack with a neat diagram. 10
- 4 a. Discuss the services of FC3. 10
- b. List the important topologies of fiber channel SAN and briefly explain any two topologies. 10

#### UNIT - III

- 5 a. List and explain any five important requirements of storage virtualization. 10
- b. List and explain the advantages and disadvantages of storage virtualization at Network level. 10
- 6 a. Explain symmetric storage virtualization with a neat diagram. 10
- b. Explain the storage virtualization at server level with a neat diagram. 10

#### UNIT - IV

- 7 a. List and explain the SAN components with a neat diagram. 10
- b. Explain the functions that are controlled by a host bus adaptor with a neat diagram. 10
- 8 a. Describe the components of the switch's operating system with a neat diagram. 10
- b. Explain the FC RAID storage configuration with a neat diagram. 10

#### UNIT - V

- 9 a. Describe the functions of any two devices used in management interface with a diagram. 10
- b. What is in – band management? Explain the HBA API for in – band management services. 10
- 10 a. Describe the functions of SNMP defined components with a neat diagram. 10
- b. Explain: 10
  - i) Standard MIB for FC - SAN
  - ii) CIM and WBEM.

\* \* \* \*