Hall Ticket Number:

Code No. : 21902

VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, HYDERABAD

M.Tech. (CSE: CBCS) I-Semester Main Examinations, January-2018

Information Storage & Management

Time: **3** hours Max. Marks: **60**

*Note: Answer **ALL** questions in **Part-A** and any **FIVE** from **Part-B***

Part-A (10 × 2 = 20 Marks)

1. Why do formatted disks have less capacity than unformatted disks?
2. Consider an application that generates 3500 IOPS, with 30 percent of them being reads. Calculate the disk load for RAID 5. If in this example an HDD with a specification of a maximum 120 IOPS for the application needs to be used, Calculate the total number of disks required to meet the disk load for the RAID 5.
3. What is Virtualization? List its forms.
4. How does iSCSI handle the process of authentication?
5. What is the importance of recoverability and consistency in local replication?
6. How does RPO and RTO help in Business Continuity?
7. What is cloud storage?
8. Specify the purpose of cloud deployment model.
9. What are the different Monitoring parameters of Storage Infrastructure?
10. What is the role of reporting in storage management?

Part-B (5 × 8 = 40 Marks)

11. a) Discuss in detail the core elements of data center infrastructure. [4]

    b) Explain in detail the high-end storage systems and midrange storage systems. [4]

12. a) Explain the topologies of FCSAN. [4]

    b) Illustrate the process of data object storage and retrieval in a Content-Addressed Storage system. [4]

13. a) A system has three components and requires all three components to be operational 24 hours, Monday through Friday. Failure of component 1 occurs as follows [2]

    Monday = No failures
    Tuesday = 5 a.m. to 7 a.m.
    Wednesday = No failure.
    Thursday = 4p.m to 8 p.m.
    Friday = 8 a.m. to 11 a.m.
    Calculate the MTBF and MTTR of Component 1.

    b) Explain the following storage array-based local replication technologies. [6]

    i) Full-volume mirroring

    ii) Pointer-based, full-volume replication

14. a) Describe about cloud adoption considerations. [2]

    b) Explain about cloud service model with an example. [6]

Contd... 2

15. a) Illustrate the Information Lifecycle Management with an Example. [3]

    b) Discuss about the possible threats that occur in the application access and management access domains. Also describe the defensive mechanism in storage and management infrastructure. [5]

16. a) Discuss in detail the component of cache in the intelligent storage system. [4]

    b) Explain the data transmission process of Fibre Channel Arbitrated Loop (FC-AL) topology in the storage area network. [4]

17. Answer any ***two*** of the following:

    a) Describe about data deduplication in virtualized environment. [4]

    b) Discuss about cloud enabling technologies. [4]

    c) Explain the Storage Infrastructure Management Activities. [4]