Hall Ticket Number:

Code No.: 32114 AS

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. (C.S.E.) III Year II-Semester Advanced Supplementary Examinations, June/July-2017

Information Storage Management

Time: 3 hours

Max. Marks: 70

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

Part-A (10 × 2 = 20 Marks)

1. Differentiate between structured and unstructured data. Give an example for each.

2. List the factors that contribute to the growth of digital data.

3. 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.

4. Give the usage and application of active-active and active-passive storage array.

5. State the factors that affect NAS performance at different levels.

6. How a CAS solution fits into the ILM strategy?

7. Name the operation steps of disk buffered remote replication.

8. How does clustering help to minimize RTO?

9. Relate attack surface with work factor in the storage infrastructure.

10. Define DoS attack and specify which security service gets affected by this attack.

Part-B (5 × 10 = 50 Marks)
(All bits carry equal marks)

11. a) Discuss in detail the evolution of storage architectures.
    b) Describe about the key characteristics of data center elements.

12. a) Explicate the logical components of host in storage system environment.
    b) An Oracle database uses a block size of 4KB for its IO Operation. The application that uses this database primarily performs a sequential read operation. Suggest and explain the appropriate values for the following cache- parameters: Cache page size, cache allocation (read vs write), pre-fetch type and write aside cache.

13. a) Draw a Fibre channel protocol stack in storage area network and discuss in detail.
    b) Explain about FCIP technology in IP SAN.

14. a) List and describe the considerations for performing backup from a local replica.
    b) A host generates 8000 I/Os at peak utilization with an average I/O size of 32KB. The response time is currently measured at an average of 12ms during peak utilizations. When synchronous replication is implemented with a Fibre channel link to a remote site, what is the response time experienced by the host if the network latency is 6ms per I/O?

15. a) Enlighten the block level and file level storage virtualization.
    b) Describe the key storage management activities that are to be performed in a storage infrastructure.

16. a) Explain the key management activities that are included in the data center.
    b) Draw a diagram of physical disk structure and explain in detail.

17. Answer any *two* of the following:
    a) Benefits of Network Attached Storage.
    b) Business Continuity Terminologies.
    c) Security threats in a BURA environment.

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