Reg. No. :

Question Paper Code: 42356

M.E. DEGREE EXAMINATION, NOV 2016

Elective

Computer Science and Engineering

14PCS506 – INFORMATION STORAGE MANAGEMENT

(Regulation 2014)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Average response time is calculated by

    (a) service time/ 1- utilization   (b) service time/1+utilization

    (c) service rate – arrival rate   (d) service rate + arrival rate

2. Which of the following is sequential access storage device?

    (a) Hard Disk   (b) CD-ROM

    (c) Tape Cartridge   (d) Main Memory

3. Network-Attached Storage is a

    (a) storage architecture   (b) file serving application

    (c) server   (d) database

4. To decide on a backup strategy for your organization, which of the following should you consider?

    (a) RPO (Recovery Point Objective)   (b) RTO (Recovery Time Objective)

    (c) Both RPO and RTO   (d) None of these

5. Rainfinity is a dedicated hardware/software solution for

    (a) file-level virtualization   (b) block level virtualization

    (c) virtual machine file system   (d) raw device mapping

PART - B (5 x 3 = 15 Marks)

6. What is storage array? Explain modular Vs monolithic storage array classification with example.

7. Differentiate internal transfer rate and external transfer rate.

8. Differentiate between NAS and SAN.

9. How to measure the information availability?

10. What is Hybrid storage solution for Network storage? How virtualization is related with it?

PART - C (5 x 16 = 80 Marks)

11. (a) (i) How is data categorized in an enterprise? Describe in brief. (8)

   (ii) Illustrate the characteristics of ILM strategies. What are the activities associated with ILM? What are the benefits of using ILM. (8)

Or

   (b) (i) What are the key requirements for Data Centre elements and explain in detail. (8)

   (ii) Elaborate the challenges in data storage and data management. (8)

12. (a) Explain the fundamental laws for disk performance and analyse the various factors that affect the performance of disk drives. (16)

Or

   (b) (i) Which components constitute the disk service time? Which component contributes the largest percentage of a disk service time in a random I/O operation? (8)

   (ii) What are the components of intelligent storage system. (8)

13. (a) (i) Explain Fibre Channel Architecture in detail. (8)

   (ii) Discuss about FC Topologies. (8)

Or

   (b) (i) Discuss the components of SAN environment and the FC connectivity and architecture. (8)

   (ii) What is NAS? Explain how the performance of NAS can be affected if the TCP window size at the sender and the receiver are not synchronized. (8)

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14. (a) (i) Give the comparison of Local Replication Technologies. (8)

    (ii) Analyse the various modes of Remote Replication. (8)

                                Or

    (b) (i) Describe the remote replication technologies with neat diagrams. (8)

    (ii) Explain in brief about Industry Management Standards. (8)

15. (a) (i) What is the purpose of performing operation backup, disaster recovery and archiving? (8)

    (ii) Describe the benefits of using a virtual tape library over a physical tape library. (8)

                                Or

    (b) Explain the categories of security domains of storage and analyze the common threats. (16)

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