Question Paper Code | 13226

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2024
Seventh Semester
Information Technology
20ITEL703 - INFORMATION STORAGE AND MANAGEMENT
Regulations - 2020

Duration: 3 Hours   Max. Marks: 100

PART - A (MCQ) (20 × 1 = 20 Marks)
Answer ALL Questions

					Marks	K – Level	CO

1. A computer program that provides the logic for computing operations are_____   — 1 K1 CO1
   (a) Application   (b) Database   (c) OS   (d) Mother board
2. Data is collection of _____   — 1 K1 CO1
   (a) Raw facts   (b) Information   (c) Knowledge   (d) Refined decision
3. The time required for the read / write heads in a disk drive to move between tracks of the disk is called _____   — 1 K1 CO1
   (a) seek time or access time   (b) rotational latency   (c) data transfer rate (d) service time
4. What is the purpose of dual parity in RAID 6?   — 1 K1 CO2
   (a) To improve read performance   (b) To increase storage capacity
   (c) To enhance fault tolerance   (d) To improve write performance
5. A RAID 6 array encounters two simultaneous disk failures. How many disks can the RAID array tolerate without data loss?   — 1 K1 CO2
   (a) 1   (b) 2   (c) 3   (d) 4
6. Which of the following is not provided by RAID 0?   — 1 K1 CO2
   (a) High I/O throughput   (b) Data protection from disk failures
   (c) Improved read and write performance   (d) Fault tolerance
7. Which is the uppermost layer in the FCP stack?   — 1 K1 CO3
   (a) FC-4   (b) FC-0   (c) FC-2   (d) FC-1
8. Identify the frames that do not carry any user data.   — 1 K1 CO3
   (a) Data Frames   (b) Link control frames   (c) Frame control   (d) Type
9. Which is an important feature of the FC networking technology?   — 1 K1 CO3
   (a) High data transmission   (b) Bandwidth   (c) Storage   (d) Low data transmission
10. Which of the following is not an example of storage virtualization?   — 1 K1 CO4
    (a) Host-based volume management   (b) LUN creation
    (c) Disk addressing (CHS to LBA)   (d) Network routing
11. What does CAS stand for in the context of storage technology?   — 1 K1 CO4
    (a) Centralized Archive Storage   (b) Content-Addressed Storage
    (c) Compressed Archive System   (d) Content Authentication Service
12. _____ virtualization focuses on creating virtual instances of physical servers to maximize resource utilization and flexibility.   — 1 K1 CO4
    (a) Network   (b) Server   (c) Memory   (d) Storage
13. PowerPath supports user-specified load-balancing policies except: — 1 K1 CO5
    (a) Round Robin Policy   (b) Least I/O Policy   (c) Least block policy   (d) FIFO policy
14. _____depends on business needs and the required RTO/RPO.   — 1 K1 CO5
    (a) Backup granularity   (b) Full backup   (c) Partial backup   (d) Backup archive
15. The storage node is responsible for _____   — 1 K1 CO5
    (a) reading the data to the backup device   (b) writing the data to the backup device
    (c) writing the data to the frontend device   (d) Store data in the system

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K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create   **13226**

16. What additional data need to be restored in database restorations for application consistency?   *1   K1   CO5*
   (a) User preferences   (b) Log files and production data
   (c) Backup catalog information   (d) System metadata

17. In full-volume mirroring, the target remains unavailable to any host during _____.   *1   K1   CO6*
   (a) synchronization (b) replication session activation (c) data copying (d) full copy mode

18. In pointer-based full-volume replication, CoFA stands for Copy on _____.   *1   K1   CO6*
   (a) first write   (b) full access   (c) fast synchronization   (d) finalization

19. Full-volume mirroring requires the target devices to be at least as large as the _____.   *1   K1   CO6*
   (a) source devices   (b) host CPU   (c) operating system   (d) network bandwidth

20. What term is used to refer to the infrastructure where the replica is stored at the remote site in the context of remote replication?   *1   K1   CO6*
   (a) Source   (b) Target   (c) Host   (d) Replication

PART - B (10 × 2 = 20 Marks)
Answer ALL Questions

21.	Compare Block level access Vs File level Access.	*2*	*K2*	*CO1*
22.	List the categories of storage.	*2*	*K1*	*CO1*
23.	Give the parameters to be considered to compare with RAID levels.	*2*	*K2*	*CO2*
24.	Explain the two categories of Intelligent Storage Array.	*2*	*K2*	*CO2*
25.	List the Storage System Components.	*2*	*K1*	*CO3*
26.	List out the components of NAS.	*2*	*K1*	*CO3*
27.	Difference between In-Band and Out-of-Band Implementations.	*2*	*K2*	*CO4*
28.	Summarize the few addressing issues in storage virtualization.	*2*	*K2*	*CO4*
29.	Distinguish between RPO and RTO.	*2*	*K2*	*CO5*
30.	Illustrate COFA.	*2*	*K2*	*CO6*

PART - C (6 × 10 = 60 Marks)
Answer ALL Questions

31. a) Discuss about ILM implementations and its benefits.   *10   K2   CO1*
   OR
   b) Explain in detail about the physical and logical components of Host.   *10   K2   CO1*

32. a) Explain in detail about the different Levels of RAID.   *10   K2   CO2*
   OR
   b) Discuss about the Intelligent Storage Array.   *10   K2   CO2*

33. a) Demonstrate the NAS I/O operations with an example and its factors affecting NAS performance and availability.   *10   K2   CO3*
   OR
   b) Discuss about the FC topologies with suitable example.   *10   K2   CO3*

34. a) Summarize the concept of object storage and retrieval in CAS.   *10   K2   CO4*
   OR
   b) Explain in detail about the types of storage virtualization.   *10   K2   CO4*

35. a) Illustrate how to Identify Single Points of Failure in a storage infrastructure and list out the solutions to mitigate these failures.   *10   K2   CO5*
   OR
   b) Explain in detail about the steps involved in Backup and restore operations with necessary diagram.   *10   K2   CO5*

36. a) Discuss in detail about full volume mirroring with necessary diagrams. *10   K2   CO6*

OR

b) Explain in detail about Storage array-based replication. *10   K2   CO6*