Reg. No.															

Question Paper Code	13868

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2025

Seventh Semester

Information Technology

20ITEL703 - INFORMATION STORAGE AND MANAGEMENT

Regulations - 2020

Duration: 3 Hours Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	Businesses analyze raw data in order to identify meaningful trends ,On the basis of these trends, (a) A company can plan or modify its strategy (b) A company can only plan strategy (c) A company can only modify its strategy (d) Document the strategy for further use	1	K1	CO1
2.	A technique of abstracting physical resources, such as compute, storage, and network, and making them appear as logical resources. (a) Virtualization (b) Abstraction (c) Encapsulation (d) Parameter passing	1	K1	CO1
3.	Which RAID level provides the best performance but no fault tolerance? (a) RAID 1 (b) RAID 0 (c) RAID 5 (d) RAID 6	1	K1	CO2
4.	Data is placed in cache and an acknowledgement is sent to the host immediately. (a) Write-back cache (b) Write through cache (c) Write front cache (d) Timestamp cache	1	K1	CO2
5.	Tell the layer gives Fibre Channel addressing, structure, and organization of data (frames, sequences, and exchanges) (a) FC 1 layer (b) FC 2 layer (c) FC 3 layer (d) FC 4 layer	1	K1	CO3
6.	Which one is not a common NAS implementations ? (a) unified (b) gateway (c) scale-out (d) switch	1	K1	CO3
7.	Why should an MTU value of at least 2,500 be configured in a bridged iSCSI environment? (a) FC supports frame size of 2568 byte (b) FC supports frame size of 2100 byte (c) FC supports frame size of 2589 byte (d) FC supports frame size of 2148 byte	1	K1	CO4
8.	Select the APIs can be easily integrated with business applications that access OSD over the web. (a) REST (b) SOAP (c) REST and SOAP (d) SMTP	1	K1	CO4
9.	How many seconds the RTO required to Cluster production servers with bidirectional mirroring, enabling the applications to run at both sites simultaneously. (a) RTO of 72 hours (b) RTO of 12 hours (c) RTO of few seconds (d) RTO of few hours	1	K1	CO5
10.	Data can be replicated to a separate location within the same storage array. (a) Backup (b) Local replication (c) Remote replication (d) Archive	1	K1	CO6

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

		Marks	K – Level	CO
11.	List the factors that used to grow the digital data.	2	K1	CO1
12.	Compare Data and Information.	2	K2	CO1
13.	Why is RAID 0 not an option for data protection and high availability?	2	K1	CO2
14.	Show how data recovery is performed using Hot Spares.	2	K2	CO2
15.	Write the advantage of FCP.	2	K1	CO3
16.	When is soft zoning preferred over hard zoning?	2	K1	CO3
17.	Define Object Based Storage Device.	2	K1	CO4

18.	Classify some of the data storage applications that could benefits from an IP SAN solution.	*2*	*K2*	*CO4*
19.	Does the configuration of multiple paths increase the data availability? Explain your answer.	*2*	*K2*	*CO5*
20.	Identify the considerations and challenges in using tape as backup technology.	*2*	*K2*	*CO5*
21.	What is LUN masking? State its features.	*2*	*K1*	*CO6*
22.	Outline the architecture of consistency of replicated database.	*2*	*K2*	*CO6*

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

23.	a)	Demonstrate the Core elements of a data center infrastructure and also write the solutions available for data storage.	*11*	*K2*	*CO1*
		OR			
	b)	Explain how information is managed using Information Lifecycle. Briefly the characteristics and benefits of ILM.	*11*	*K2*	*CO1*
24.	a)	Illustrate the various RAID levels and techniques used in RAID with the help of suitable diagrams. Also discuss how RAID configuration affects application performance and data reliability.	*11*	*K2*	*CO2*
		OR			
	b)	Relate the components of an Intelligent Storage System and also explain the role of each component in managing and optimizing data storage.	*11*	*K2*	*CO2*
25.	a)	Summarize the Fibre Channel (FC) connectivity and FC architecture, and provide a suitable example to illustrate how they are implemented in storage networks.	*11*	*K2*	*CO3*
		OR			
	b)	Demonstrate how NAS (Network Attached Storage) performs input/output (I/O) operations with a suitable example, and discuss the key factors that influence its performance and availability.	*11*	*K2*	*CO3*
26.	a)	The IT department of a department store uses tape to archive data. Explain four to five major points you could provide to persuade the IT department to move to a CAS solution. Select your suggestions impact the IT department.	*11*	*K3*	*CO4*
		OR			
	b)	How can a block-level virtualization implementation be used as a data migration tool? Apply how data migration will be accomplished and discuss the advantages of using this method for storage. Compare this method to traditional migration methods.	*11*	*K3*	*CO4*
27.	a)	Design a Business Continuity Plan for an organization using the BC Planning Life Cycle stages and explain your answer.	*11*	*K3*	*CO5*
		OR			
	b)	Design a backup and restore workflow for an organization with a diagram and Explain the choice of backup type.	*11*	*K3*	*CO5*
28.	a)	Illustrate the various techniques used to ensure consistency of a local replica.	*11*	*K2*	*CO6*
		OR			
	b)	Compare and contrast the local replication technologies.	*11*	*K2*	*CO6*