Reg. No. : | | | | | | | | | | | | |

Question Paper Code:U8305

B.E./B.Tech. DEGREE EXAMINATION, APRIL / MAY 2025

Professional Elective

Computer Science and Business systems

21ITV305- STORAGE TECHNOLOGIES

(Regulations 2021)

Duration: Three hours | Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1.	Outline the five core elements essential for the basic functionality of a data center.	CO1- U
2.	Define digital data and its types.	CO1- U
3.	What is RAID, and why is it used in storage systems?	CO1- U
4.	List two types of intelligent storage systems and briefly describe each.	CO1- U
5.	How does a file-based storage system ensure data integrity and reliability?	CO1- U
6.	List the benefits block storage.	CO1- U
7.	Difference between the Cloud backup vs cloud storage.	CO1- U
8.	Define data achieve and its types.	CO1- U
9.	List out the activities of Storage infrastructure management.	CO1- U
10.	A government agency wants to use role-based access control (RBAC) for its storage system. How will this enhance security?	CO2- App

PART – B (5 x 16= 80 Marks)

11.	(a)	A healthcare organization needs to handle large volumes of structured and unstructured data. Suggest and explain the types of digital data storage they should adopt.	CO2- App	(16)
		Or		
	(b)	Design a data center for an e-commerce company, focusing on energy efficiency, high availability, and scalability. Explain the rationale behind your design.	CO2- App	(16)

12.	(a)	Define RAID and explain its various levels (e.g., RAID 0, RAID 1, RAID 5, RAID 10). Discuss the trade-offs between performance, cost, and redundancy.	CO1- U	(16)
		Or		
	(b)	Explain the key components of an intelligent storage system, including their roles and functions in managing data efficiently.	CO1- U	(16)
13.	(a)	Demonstrate the object-based storage system by illustrating its components, advantages, and differences compared to block-based and file-based storage systems.	CO1- U	(16)
		Or		
	(b)	Explain the architecture of a block-based storage system. Discuss its working principles, advantages, and use cases in enterprise environments.	CO1- U	(16)
14.	(a)	A large enterprise manages a Fibre Channel SAN to store and access critical business data. The SAN includes storage arrays, servers, and backup devices. To enhance security and performance, the IT team implements zoning in the SAN.	CO2- App	(16)
		Or		
	(b)	A mobile banking app needs a robust backup and recovery solution for user data. Develop a plan that ensures security, efficiency, and compliance.	CO2- App	(16)
15.	(a)	Explain detail about the Storage security domains	CO1- U	(16)
		Or		
	(b)	Explain the role of access control and authentication in securing storage systems	CO1- U	(16)