


Name:			
Enrolment No:			
UPES End Semester Examination, May 2024			
Course: Blockchain for Public Sector Program: B. TECH(CSE+BT-H/HN) Course Code: CSBL3010		Semester: VI Time : 03 hrs. Max. Marks: 100	
Instructions:			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	Describe digital signatures and elucidate their significance in ensuring data integrity and authenticity.	4	CO1
Q 2	Discuss the properties of SHA algorithms that make them suitable for cryptographic hashing in blockchain.	4	CO1
Q 3	Analyze the potential benefits and drawbacks of using smart contracts in various industries, such as finance or supply chain management.	4	CO2
Q 4	How does blockchain technology enhance the transparency and trustworthiness of voter registration systems?	4	CO2
Q 5	Explore the challenges and ethical implications of using blockchain in educational record-keeping and student data management.	4	CO3
SECTION B (4Qx10M= 40 Marks)			
Q 6	Compare and contrast the effectiveness of traditional key-based signatures and keyless signature infrastructure in different industries such as finance, legal, and data management. Consider factors like scalability, security, and ease of implementation.	10	CO1
Q 7	How do Merkle Trees support the scalability of blockchain networks, particularly in handling large volumes of transactions?	10	CO2
Q 8	How can blockchain technology be strategically leveraged to significantly improve the tracking and authentication of pharmaceuticals across the entire supply chain, considering factors such as transparency,	10	CO3

	security, and accountability, while addressing potential challenges and implementation strategies?		
Q 9	Explore the concept of decentralized learning platforms empowered by blockchain technology, delving into their transformative potential for educational institutions.	10	CO3
SECTION-C (2Qx20M=40 Marks)			
Q 10	Propose a comprehensive blockchain-based solution tailored for the management of land registry records, meticulously addressing paramount concerns such as security, scalability, and accessibility. Offer insights into the architectural design, consensus mechanisms, and data structuring strategies to ensure the integrity and efficiency of the system, while considering the diverse stakeholders and regulatory requirements involved in land registry management.	20	CO4
Q 11	How effective is Blockchain technology in mitigating different types of cybercrime when compared to conventional security methods? Furthermore, devise a specialized Blockchain solution tailored for defense applications, prioritizing security, and ensuring the integrity of data. OR Create a prototype showcasing the practical implementation of Blockchain technology for secure and streamlined tax payments, highlighting its effectiveness in enhancing security and efficiency in the taxation process?	20	CO5