


Name:			
Enrolment No:			
UPES Supplementary Examination, December 2023			
Course: Introduction to Blockchain Program: B.Tech(CSE-Blockchain Technology) Course Code: CSBL2004		Semester: III Time : 03 hrs. Max. Marks: 100	
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	What are the advantages and challenges of a decentralized system compared to a centralized one?	4	CO1
Q2	Differentiate between private and public keys in blockchain. How are addresses and wallets related to these keys?	4	CO1
Q3	How hashing is different from encryption? List out 2 applications of hashing.	2+2=4	CO2
Q4	What is double spending problem in blockchain?	4	CO2
Q5	Differentiate between public and private blockchain.	4	CO1
SECTION B (4Qx10M= 40 Marks)			
Q6	Discuss the components to be studied in the process involved while creating a new blockchain.	10	CO1
Q7	How the consensus is achieved in most of the blockchains? Compare and contrast the advantages and disadvantages of PoW (Proof of Work), PoA (Proof of Activity), and PoS (Proof-of-Stake) consensus algorithms.	4+6	CO2
Q8	How does developing blockchain applications with Node.js and Web3.js differ from traditional web development?	10	CO3
Q9	Compare Ethereum and Ethereum Classic in terms of their philosophies and technical differences. OR Discuss the challenges and advantages of DApp development on the Ethereum network.	10	CO3

SECTION-C
(2Qx20M=40 Marks)

Q10	a) Discuss the role and importance of smart contracts in automating agreements and transactions. b) Illustrate a simple example or use case where a smart contract could be applied, detailing its functionality and purpose.	10+10	CO4
Q11	a) Design a Healthcare Blockchain with all necessary components clearly stating the mining process, consensus mechanism, block and transaction information, type of blockchain used, and data storage technique. b) Explain the role of different stakeholders in the above-designed chain. Discuss the advantages of the designed system over a conventional Healthcare system OR a) Discuss the implementation of blockchain in the banking and finance sector. What are the advantages and challenges? b) Analyze the impact of blockchain on reducing fraud and enhancing security in banking and finance.	10+10	CO5