


Name:			
Enrolment No:			
UPES End Semester Examination, December 2024			
Course: Blockchain Components and Architecture Program: B.Tech (CSE)-All Spec Course Code: CSBL4003P		Semester : VII Time : 03 hrs. Max. Marks: 100	
Instructions: Attempt Questions serially. Question choice given in Section B and C.			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q1	Describe with example the UTXO model to validate transaction in permission-less blockchain solution like Bitcoin.	4	CO1
Q2	i. Explain way to reduce block-size in Bitcoin blockchain by compressing the keys? ii. Describe how using different address for different transactions help hide someone's identity?	2+2	CO1
Q3	In Hyperledger Fabric, Intercommunication is how a smart contract in a channel updates the World State database. It is achieved by what process	4	CO3
Q4	i. Describe different kinds of peers in Hyperledger Fabric. ii. Explain the key benefits of the transaction flow process of Hyperledger Fabric?	2+2	CO2
Q5	i. Point-out the key difference in X.509 vs Identity mixer ii. Write a short note on ZKP.	2+2	CO5
SECTION B (4Qx10M= 40 Marks)			
Q6	Explain, in a production environment, what peer items require on-going monitoring.	10	CO1
Q7	Describe how identities and access control is done using MSP?	10	CO3
Q8	i. Describe different system chain codes available in HLF. ii. Point-out key difference in transaction validation in Fabric vs. Bitcoin model.	5+5	CO4
Q9	i. How security is achieved in HLF? ii. Write a short note on SGX. iii. Write a short note on coco framework. OR How data privacy is achieved in HLF using i. Channels	4+3+3 OR 2.5*4	CO5

	ii.. Encryption, iii. Smartcontract confidentiality iv. Anonymity and Unlikability		
SECTION-C (2Qx20M=40 Marks)			
Q10	i. Draw the architecture of Hyperledger Fabric and explain its main components and how do they interact with each other? ii. Describe the transaction flow in Hyper ledger Fabric. iii. Explain how Consensus is Achieved in Hyperledger Fabric? iv. Identify the key benefits of the transaction flow process of Hyperledger Fabric.	20	CO2
Q11	Describe, how many peers do you need to endorse a transaction? What users will use to design assets? What is the part of Hyperledger Fabric Ledger? (use suitable example) <p style="text-align: center;">OR</p> Describe architecture of Hyperledger Fabric Network. What is the solution for concurrency conflict problem on Hyperledger Fabric?	20	CO5