K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

May-June 2025-2026

Program: B.Tech | Scheme:III
Regular Examination: TY | Semester: VI
Course Code: HBCC601 and Course Name: BlockChain Platform
Date of Exam: 30/05/2026 | Duration: 02.5 Hours | Max. Marks: 60

Instructions:
(1)All questions are compulsory.
(2)Draw neat diagrams wherever applicable.
(3)Assume suitable data, if necessary.

Q. No.	Question	Max. Marks	CO	BT level
Q 1	Solve any **two** questions out of three: (05 marks each)	10		
a)	Discuss the key components involved in Ethereum transactions.		CO1	U
b)	Design an architectural diagram illustrating the interactions among mining, gas, Ether, and transactions on the Ethereum blockchain.		CO3	C
c)	Differentiate between Chaincode and traditional smart contracts by analyzing their execution and deployment in Hyperledger Fabric.		CO5	An
Q 2	Solve any **two** questions out of three: (05 marks each)	10		
a)	Develop a framework to overcome the major disadvantages of public blockchains.		CO2	C
b)	Suppose a supply chain system faces data tampering issues. How can Private Blockchain be applied to solve this problem?		CO4	A
c)	Construct an architecture for a fintech application using Ripple and analyze its benefits.		CO6	C
Q.3	Solve any **two** questions out of three. (10 marks each)	20		
a)	Construct an Ethereum blockchain framework for secure banking transactions. Explain the role of mining, gas, and Ethereum Virtual Machine (EVM).		CO3	C
b)	Develop a comparison model showing the transition from Proof of Work (PoW) to Proof of Stake (PoS) and Propose a sharding-based chain structure to improve scalability in Ethereum 2.0.		CO3	C
c)	Examine the effectiveness of Hyperledger Fabric in supply chain management systems.		CO5	An

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Q.4	Solve any **two** questions out of three. (10 marks each)	20		
a)	Design a comparison framework to select either Bitcoin or Ethereum for a given application. Propose a public blockchain–based solution for secure data sharing.		CO2	C
b)	Design a simple use-case where a smart contract can be applied in a Private Blockchain for an e-commerce website.		CO4	A
c)	A retail company wants automated payment release after delivery confirmation. How would you apply smart contracts in this case?		CO4	A

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