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

Nov – Dec 2025
(B. Tech.) Program: Computer Engineering Scheme **IIB**
Regular Examination: LY Semester: VII
Course Code: **CEDLC7043** and Course Name: **Blockchain**
Date of Exam: **27/11/2025** 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)	Describe the Structure of blockchain and Differentiate between DLT and Blockchain		CO1	U
b)	Compare Public, Private, Consortium, Hybrid blockchains.		CO2	U
c)	Explain the working of Bitcoin transaction.		CO3	U
Q 2	**Solve any two questions out of three: (05 marks each)**	**10**		
a)	Describe following terms w.r.t. Bitcoin: Keys, Addresses, Wallets, Transactions		CO3	U
b)	What is a Token? Compare ERC20 & ERC721		CO5	U
c)	Explain the importance of Blockchain in IoT. Comment on suitable applications that can be designed with the integration of IoT and Blockchain.		CO6	An
Q.3	**Solve any two questions out of three. (10 marks each)**	**20**		
a)	i) Draw and Explain structure of block header (4M) ii) Describe how blocks are linked in a blockchain and why this design is secure. (6M)		CO1	U
b)	Explain the working of Simplified Payment Verification (SPV) (6 Marks) Also Explain how can the size of a Bloom filter impact network efficiency? (4 Marks)		CO3	U
c)	Write a Solidity smart contract for maintaining a simple student record system that stores roll number, name, and marks. Allow the teacher (contract owner) to add students and retrieve details.		CO5	Ap

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Q.4	**Solve any two questions out of three. (10 marks each)**	**20**		
a)	Describe the process of Mining in Blockchain. Also explain blockchain forking with its types and examples.		CO2	U
b)	Explain the complete end-to-end transaction workflow in **Ethereum**		CO4	U
c)	Describe how the use of integration of Blockchain in following domains is useful for society with suitable applications: i. Blockchain in Information security, ii. Blockchain in Banking and Finance. iii. Blockchain in Government Services		CO6	U

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