

Code No: R204105I

R20

SET - 1

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM**  
**IV B. Tech I Semester Regular/Supplementary Examinations October 2025**  
**BLOCK-CHAIN TECHNOLOGIES**  
(CSE&IT)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**  
All Questions Carry Equal Marks

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**UNIT-I**

1. a) Define Block-chain and explain its key components. [7M]  
b) Explain how Block-chain is changing the landscape of digitalization. [7M]  
(OR)
2. a) Explain the working principle of a crypto currency transaction. [7M]  
b) Illustrate how block-chain ensures distributed trust with a suitable example? [7M]

**UNIT-II**

3. a) Explain the difference between public and private block-chains with examples. [7M]  
b) Discuss the concept of a hash puzzle and its role in block-chain mining. [7M]  
(OR)
4. a) Analyze how digital identity verification is implemented using block-chain? [7M]  
b) Apply block-chain neutrality in digital art ownership and transfer? [7M]

**UNIT-III**

5. a) Describe the structure of the Bitcoin block-chain. [7M]  
b) Explain the use cases of Bitcoin scripting in micropayments and escrow. [7M]  
(OR)
6. a) Analyze the use of block-chain in genomics and scientific research? [7M]  
b) Compare Bitcoin and FoldingCoin in terms of their goals and applications? [7M]

**UNIT-IV**

7. a) Explain the need for mining in block-chain with a suitable example. [7M]  
b) Illustrate the functioning of Hyper ledger in enterprise block-chain use cases? [7M]  
(OR)
8. a) Analyze the role of coin drop as a strategy for public crypto currency adoption? [7M]  
b) Compare Ethereum and IOTA in terms of their architecture and applications? [7M]

**UNIT-V**

9. a) Describe the major technical challenges faced by block-chain systems? [7M]  
b) Explain how block-chain can be used in land registration systems. [7M]  
(OR)
10. a) Apply block-chain principles to improve e-governance transparency? [7M]  
b) Design a block-chain-based model for secure healthcare data management? [7M]

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