

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM
IV B. Tech I Semester Advanced Supplementary Examinations March 2025

BLOCK CHAIN TECHNOLOGIES

(AI&DS, AI&ML, CSE (AI&DS), CSE(AI&ML), CSE(AI) and CSE(DATA SCIENCE))

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**

All Questions Carry Equal Marks

UNIT-I

1. a) What does distributed trust mean in the context of blockchain? Explain it. [7M]
b) Describe the process of how a cryptocurrency transaction is verified? [7M]
(OR)
2. a) How can blockchain be used to prevent fraud in financial transactions? [7M]
b) Do you think blockchain can completely replace traditional financial systems? Justify ? [7M]

UNIT-II

3. a) Define public key cryptography and explain its role in blockchain. [7M]
b) Explain the concept of extensibility in blockchain technology. [7M]
(OR)
4. a) Analyze the trade-offs between private and public block chains in terms of security and scalability? [7M]
b) Do you think blockchain can completely replace traditional identity verification systems? Justify? [7M]

UNIT-III

5. a) What are the key environmental concerns associated with Bitcoin mining? Explain it. [7M]
b) List and describe two use cases of the Bitcoin blockchain scripting language? [7M]
(OR)
6. a) Evaluate the effectiveness of Bitcoin scripting language for enabling escrow transactions? [7M]
b) Examine the relationship between Foldingcoin and distributed computing. [7M]

UNIT-IV

7. a) Explain the Byzantine Generals Problem and its relevance to blockchain consensus. [7M]
b) Do you think tokens will replace traditional currencies in the future? Justify? [7M]
(OR)
8. a) Name and describe two consensus algorithms used in blockchain? [7M]
b) Analyze the role of Hyperledger in promoting enterprise blockchain adoption? [7M]

UNIT-V

9. a) Analyze the technical challenges of implementing blockchain in large-scale systems? [7M]
b) Describe the challenges of integrating blockchain into existing business models? [7M]
(OR)
10. a) Evaluate the effectiveness of blockchain in addressing e-governance challenges? [7M]
b) Describe the challenges of implementing blockchain in healthcare? [7M]
