



- (ix) Select the option that justifies the use of Nonce in the proof of work consensus algorithm in a Blockchain network.
- a) To increase network security  
b) To decrease transaction fees  
c) To decrease block size  
d) To help miners find a valid block hash
- (x) Which of the following option establishes the purpose of the nonce in proof of work consensus algorithm?
- a) To generate unique block hashes  
b) To validate transactions  
c) To create new blocks  
d) To prevent double spending
- (xi) Which of the following options would you choose as the purpose of a blockchain project roadmap?
- a) To improve network security  
b) To manage project complexity  
c) To create new blocks  
d) To validate transactions
- (xii) Which of the following would you identify as a characteristic of a blockchain transaction?
- a) It is centrally controlled  
b) It is reversible  
c) It is transparent and immutable  
d) It is validated by a single entity
- (xiii) Which of the following would you identify as a characteristic of a decentralized blockchain network?
- a) High transaction fees  
b) Distributed decision-making  
c) Slow transaction speed  
d) Centralized control
- (xiv) Which of these interprets to balance calculation in blockchain?
- a) To validate transactions  
b) To calculate the balance of a wallet  
c) To mine new blocks  
d) To create new transactions
- (xv) Which of these options establishes the purpose of the multiple chain validation in the blockchain?
- a) To prevent double-spending  
b) To ensure the integrity of the data  
c) To validate transactions  
d) To secure the network

### Group-B

(Short Answer Type Questions)

3 x 5=15

2. Describe the steps involved in building and testing the Blockchain. (3)
3. Examine the impact of Bitcoin on the traditional financial system and its potential to disrupt established financial institutions. (3)
4. Explain the role of Cryptography in Blockchain security. (3)
5. Explain how would you construct a new block and add it to the Blockchain. (3)
6. Design a Blockchain API that allows for retrieving and posting transactions. (3)

OR

Design a business continuity plan for a blockchain project, including procedures for disaster recovery and backup. (3)

### Group-C

(Long Answer Type Questions)

5 x 6=30

7. Evaluate the importance of business continuity planning in a blockchain project, and propose strategies to ensure business continuity in the event of a disruption. (5)
8. What are the advantages of Blockchain technology? (5)
9. Define Blockchain and explain its significance. (5)
10. Compare and contrast the concepts of cryptography and encryption in the context of Blockchain technology. (5)
11. Explain the process of handling messages from peers. (5)

12. Develop a strategy to mitigate vulnerabilities in the Blockchain and identify potential threats. (5)

**OR**

Design a novel consensus mechanism for a Blockchain network that offers improved scalability, security, and energy efficiency compared to traditional proof-of-work and proof-of-stake mechanisms. (5)

\*\*\*\*\*