NOC22-CS44: Blockchain and Its Applications
Assignment 11

Correct choices are highlighted in Yellow. Give partial marks for partially correct answers.

1. Hyperledger Aries is used for transmitting verifiable digital credentials.
   a. False
   b. True

Detailed Solution: Hyperledger Aries is used for exchanging digital identities. Please refer to the slides for further details.

2. Which of the following is true about Hypeledger Aries?
   a. Aries cloud agent exposes API to access Aries capabilities
   b. Aries controller implements application business logic
   c. The controller sends requests
   d. Response events are fed back to the controller as webhooks

Detailed Solution: All of the options a,b, c, and d are true for Aries architecture. Please refer to the slides for more details.

3. Which of the following is not a risk for blockchain operations?
   a. 51% vulnerability
   b. Private key security
   c. Double spending
   d. None of the above

Detailed Solution: All of the options a,b, and c are risks in blockchain use. Please refer to the slides for details.

4. Selfish mining attacks cause forking problems in the network.
   a. True
   b. False

Detailed Solution: selfish mining creates forks in the blockchain network. So option a is true.

5. Which of the following is/are true for Eclipse Attack.
   a. The Attacker partitions miners
   b. The attacker re-populates the victim node's peer tables
   c. The victim node restarts and loses current outgoing connections
   d. The victim establishes all new outgoing connections to attacker IP addresses

Detailed Solution: In Eclipse Attack, the attacker partitions the network and populates peer tables with attacker IPs so that the victim node only connects to the attacker IPs. So all the options are true. Please refer to the slides for more details.

6. Attacker can perform a front-running attack if he/she knows about upcoming transactions?
    a. False
    b. True

Detailed Solution: in front running attack attacker utilises the prior knowledge for manipulation. So option b is correct. Please refer to the slides for more details.

7. Blockchain Trust is mainly controlled by which of the following?
    a. Consensus
    b. Immutability
    c. Provenance
    d. Finality

Detailed Solution: All of the above options are true. Please refer to the slides for more details.

8. For defining enterprise-level blockchain, which of the below factors need to be analyzed?
    a. Network
    b. People
    c. Assets
    d. Transactions

Detailed Solution: All of the above options are true for defining an enterprise-level blockchain strategy. Please refer to the slides for more details.

9. In which of the following cases a node stops responding?
    a. Power failure
    b. Network failure
    c. Security updates
    d. DoS attacks

Detailed Solution: in all the above case network can suffer and stops responding.

10. What is a major problem with Proof of Work in a large-scale network?
    a. It is difficult to implement
    b. It is Resource-intensive and consumes enormous amounts of power
    c. Multiple miners have to be rewarded
    d. It is unreliable

Detailed Solution: Proof of Work is based on solving complex mathematical puzzles to validate the transaction. For this, powerful computers are required, and inherently they consume a lot of energy. So option b is correct.