Assessments Chapter 9

1. What is the main purpose of public keys in Bitcoin?

A) To encrypt transactions

B) To decrypt transactions

C) To verify ownership

D) To sign transactions

Correct answer: C) To verify ownership

2. What is the primary function of a Bitcoin node?

A) To mine new blocks

B) To verify transactions and maintain a copy of the blockchain

C) To create new Bitcoin addresses

D) To process transactions and assign block rewards

Correct answer: B) To verify transactions and maintain a copy of the blockchain

Rationale: According to the document, a Bitcoin node "keeps a digital copy of the blockchain" and "ensures that all transactions are valid" (Section 9.3.1).

3. What is the purpose of hashing in Bitcoin transactions?

A) To encrypt transaction data

B) To create a unique digital signature for each transaction

C) To verify the integrity and authenticity of transactions

D) To assign block rewards to miners

Correct answer: C) To verify the integrity and authenticity of transactions

Rationale: The document states that hashing is used to "verify that the transaction is valid and has not been tampered with"

4. What is the UTXO model in Bitcoin?

A) A system for tracking the total amount of bitcoins in circulation

B) A method for verifying the authenticity of transactions

C) A way of breaking down a larger piece of gold into smaller pieces

D) A model for representing the balance of a Bitcoin wallet as a collection of unspent transaction outputs

Correct answer: D) A model for representing the balance of a Bitcoin wallet as a collection of unspent transaction outputs

Rationale: According to the document, the UTXO model represents the balance of a Bitcoin wallet as a collection of unspent transaction outputs (Section 9.2).

5. What is the primary incentive for miners to secure the Bitcoin network?

A) The creation of new bitcoins

B) The collection of transaction fees

C) The opportunity to control the network

D) The chance to mine new blocks

Correct answer: A) The creation of new bitcoins

Rationale: The document states that the primary incentive for miners is the creation of new bitcoins, which is the "incentive system" (Section 9.3.2).

6. What is the halving event in Bitcoin?

A) A reduction in the block reward for miners

B) An increase in the block reward for miners

C) A change in the difficulty level of mining

D) A modification to the Bitcoin protocol

Correct answer: A) A reduction in the block reward for miners

Rationale: According to the document, the halving event reduces the block reward for miners by half, which occurs approximately every 4 years (Section 9.3.2).

7. What is the hash function in Bitcoin?

A) Encrypt transaction data

B) Compress transaction data

C) Store transaction data securely

D) Generate unique digital fingerprint

Correct answer: D) Generate unique digital fingerprint

8. Why is hash used in Bitcoin?

A) To verify transaction integrity

B) To store transaction data securely

C) To generate new Bitcoins

D) To encrypt transaction data

Correct answer: A) To verify transaction integrity

9. What does "UTXO" stand for in Bitcoin?

A) Unspent Transaction Output

B) Unverified Transaction Input

C) Unused Transaction Output

D) Unconfirmed Transaction Output

Correct answer: A) Unspent Transaction Output

10. How does the UTXO model work in Bitcoin?

A) Transactions are verified based on their input

B) Transactions are verified based on their output

C) Transactions are verified based on input and output

D) Transactions are verified based on transaction fees only.

Correct answer: C) Transactions are verified based on input and output