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Marks 38.00/49.00

Grade 3.88 out of 5.00 (78%)

Question 1

Correct

Mark 1.00 out of 1.00

In Ethereum, what is the purpose of the nonce in a transaction?

Select one:

- ☒ a. To track the number of transactions sent from an account ✓
- ☐ b. To point to the previous block in the chain
- ☐ c. To represent the transaction amount
- ☐ d. To store the transaction's digital signature

The correct answer is: To track the number of transactions sent from an account

Question 2

Correct

Mark 1.00 out of 1.00

How is the difficulty of the hash puzzle in Bitcoin mining adjusted over time?

Select one:

- ☐ a. It remains constant and does not change over time
- ☐ b. It is adjusted after every block to keep the mining process competitive
- ☒ c. It is adjusted every 2,016 blocks to maintain a constant rate of block generation ✓
- ☐ d. It is adjusted daily based on the total number of miners in the network

The correct answer is: It is adjusted every 2,016 blocks to maintain a constant rate of block generation

Question 3

Correct

Mark 1.00 out of 1.00

Bitcoin uses UTXO, Ethereum uses

Select one:

- ☐ a. Double spend
- ☒ b. Account Balance ✓
- ☐ c. UTXO
- ☐ d. Ether

The correct answer is: Account Balance

Question 4

Correct

Mark 1.00 out of 1.00

What is a dApp?

Select one:

- ☒ a. A decentralized application ✓
- ☐ b. A type of Cryptocurrency
- ☐ c. A mobile application which runs over Blockchain
- ☐ d. A type of blockchain

The correct answer is: A decentralized application

Question 5

Incorrect

Mark 0.00 out of 1.00

Which of the following statement is true Once all the BITCOINS are mined?

Select one:

- ☐ a. The process of mining will continue as it is except the miners will not get the block reward
- ☐ b. The BITCOIN network will be dissolved.
- ☐ c. There will be no miners in the BITCOIN network as they will not have any incentive to validate the transactions and blocks
- ☒ d. They will still get the transaction fee to validate the transaction but will not solve any cryptographic puzzle as a proof-of-work ✗

The correct answer is: The process of mining will continue as it is except the miners will not get the block reward

Question 6

Correct

Mark 1.00 out of 1.00

Which one of the following is not a consensus algorithm?

Select one:

- ☐ a. Proof-of-Work
- ☐ b. Proof-of-Stake
- ☐ c. Delegated Proof-of-stake
- ☒ d. Proof of existence ✓

The correct answer is: Proof of existence

Question 7

Correct

Mark 1.00 out of 1.00

How is a UTXO used in a Bitcoin transaction?

Select one:

- ☐ a. It is used to verify the transaction's digital signature
- ☐ b. It is used to store the transaction data in the blockchain
- ☒ c. It is used as the input for a new transaction ✓
- ☐ d. It is used to determine the transaction fee

The correct answer is: It is used as the input for a new transaction

Question 8

Correct

Mark 1.00 out of 1.00

What is the term for when a blockchain splits?

Select one:

- ☒ a. A fork ✓
- ☐ b. A sidechain
- ☐ c. A merger
- ☐ d. A division

The correct answer is: A fork

Question 9

Correct

Mark 1.00 out of 1.00

Which of the following consensus mechanism is used in BITCOIN?

Select one:

- ☐ a. Proof-of-storage
- ☐ b. Proof-of-authority
- ☐ c. Proof-of-stake
- ☒ d. Proof-of-work ✓

The correct answer is: Proof-of-work

Question 10

Correct

Mark 1.00 out of 1.00

In a Bitcoin transaction, what term is used to describe the outputs from previous transactions that are used as inputs for a new transaction?

Select one:

- ☐ a. Merkle roots
- ☒ b. Unspent Transaction Outputs (UTXOs) ✓
- ☐ c. Block hashes
- ☐ d. Transaction IDs (TXIDs)

The correct answer is: Unspent Transaction Outputs (UTXOs)

Question 11

Correct

Mark 1.00 out of 1.00

What are sidechains?

Select one:

- ☐ a. Any mechanism that allows tokens from one blockchain to be securely used within a completely separate Blockchain
- ☐ b. Smart Contracts that have forked off the main Blockchain
- ☐ c. Another term for a hash function
- ☒ d. A parallel network running adjacent to the main blockchain network for additional security ✓

The correct answer is: A parallel network running adjacent to the main blockchain network for additional security

Question 12

Incorrect

Mark 0.00 out of 1.00

Cryptographic Hash Function transforms an arbitrary length of a fixed length string that act more or less as a Fingerprint of the document

Select one:

- ☒ a. False ❌
- ☐ b. True

The correct answer is: True

Question 13

Incorrect

Mark 0.00 out of 1.00

When we should not use the blockchain?

Select one:

- ☐ a. If You Require Fast Performance
- ☒ b. transactions between two or more parties have to be highly customized and are constantly changing. ❌
- ☐ c. When transactions need to take place within one organization?
- ☐ d. All of the above

The correct answer is: All of the above

Question 14

Correct

Mark 1.00 out of 1.00

What characteristic makes blockchain tamper-proof?

Select one:

- ☐ a. Cryptocurrency
- ☐ b. Servers
- ☒ c. Hash chains ✔️
- ☐ d. VPN

The correct answer is: Hash chains

Question 15

Correct

Mark 1.00 out of 1.00

What is the primary reason for the gas limit in Ethereum transactions and smart contract execution?

Select one:

- ☒ a. To prevent infinite loops and protect the network from spam or denial-of-service attacks ✓
- ☐ b. To increase the overall speed of transactions on the network
- ☐ c. To make sure transactions are processed in a specific order
- ☐ d. To ensure that users have sufficient funds to pay for the transaction

The correct answer is: To prevent infinite loops and protect the network from spam or denial-of-service attacks

Question 16

Correct

Mark 1.00 out of 1.00

What are essential skills a blockchain developer should have?

Select one:

- ☐ a. Official asset registry, voting facilitation, back-office functions
- ☐ b. Foundation in data structures, web development, understanding of smart contracts
- ☐ c. Familiarity of blockchain architecture, foundation in cryptography, proficiency in common programming languages
- ☒ d. Both B and C ✓

The correct answer is: Both B and C

Question 17

Incorrect

Mark 0.00 out of 1.00

What is the primary component of a Bitcoin transaction that uniquely identifies the sender?

Select one:

- ☒ a. Public key ✗
- ☐ b. Digital signature
- ☐ c. Private key
- ☐ d. Public address

The correct answer is: Digital signature

Question 18

Correct

Mark 1.00 out of 1.00

What is the maximum number of bitcoins that can be created?

Select one:

- ☒ a. 21 million ✓
- ☐ b. 16 million
- ☐ c. There is no maximum
- ☐ d. 100 million

The correct answer is: 21 million

Question 19

Correct

Mark 1.00 out of 1.00

In Solidity, which keyword is used to indicate that a function does not modify the state of the contract or blockchain?

Select one:

- ☐ a. constant
- ☐ b. immutable
- ☒ c. view ✓
- ☐ d. pure

The correct answer is: view

Question 20

Correct

Mark 1.00 out of 1.00

Which of the following best describes the primary disadvantage of the Proof of Work consensus mechanism used in Bitcoin?

Select one:

- ☐ a. It allows for easy manipulation of transaction data
- ☒ b. It requires a significant amount of energy consumption ✓
- ☐ c. It leads to centralization of control within the network
- ☐ d. It limits the scalability of the network

The correct answer is: It requires a significant amount of energy consumption

Question 21

Incorrect

Mark 0.00 out of 1.00

What is a blockchain?

Select one:

- ☐ a. An exchange
- ☐ b. A type of cryptocurrency
- ☐ c. A Trusted Third party
- ☒ d. A distributed ledger on a peer to peer network ❌
- ☐ e. A decentralized computer for executing distributed Apps

The correct answer is: A decentralized computer for executing distributed Apps

Question 22

Correct

Mark 1.00 out of 1.00

Which of the following is a desirable property of a cryptographically secure hash function?

Select one:

- ☐ a. The number of bits in output should always be lesser than the number of input bits.
- ☒ b. It should be infeasible to find out the input value from given hash value. ✔️
- ☐ c. Any two input values should never map to the same output value.
- ☐ d. Calculating a hash value should be hard so that the attackers cannot compute them so easily.

The correct answer is: It should be infeasible to find out the input value from given hash value.

Question 23

Incorrect

Mark 0.00 out of 1.00

What is a miner?

Select one:

- ☒ a. A person doing calculations to verify a transaction ❌
- ☐ b. An algorithm that predicts the next part of the chain
- ☐ c. A type of blockchain
- ☐ d. Computers that validate and process blockchain transactions

The correct answer is: Computers that validate and process blockchain transactions

Question 24

Correct

Mark 1.00 out of 1.00

What is the primary purpose of a "modifier" in a Solidity smart contract?

Select one:

- ☒ a. To change the behavior of a function or restrict access to it ✓
- ☐ b. To perform mathematical operations on variables
- ☐ c. To define the contract's storage variables
- ☐ d. To define the contract's constructor

The correct answer is: To change the behavior of a function or restrict access to it

Question 25

Correct

Mark 1.00 out of 1.00

What is the primary function of Bitcoin miners in the Proof of Work consensus mechanism?

Select one:

- ☒ a. To validate and process transactions by solving complex mathematical problems ✓
- ☐ b. To maintain a copy of the entire transaction history
- ☐ c. To vote on proposed changes to the network
- ☐ d. To create new coins by minting them

The correct answer is: To validate and process transactions by solving complex mathematical problems

Question 26

Correct

Mark 1.00 out of 1.00

Which of the following statements is true regarding UTXOs in the Bitcoin network?

Select one:

- ☐ a. UTXOs can be partially spent in a transaction
- ☒ b. UTXOs can be combined and split to create new UTXOs in a transaction ✓
- ☐ c. UTXOs are created by a central authority to manage transaction inputs
- ☐ d. UTXOs can be reused multiple times in different transactions

The correct answer is: UTXOs can be combined and split to create new UTXOs in a transaction

Question 27

Correct

Mark 1.00 out of 1.00

In BITCOIN What incentivizes the miners to give correct validation of transactions?

Select one:

- ☒ a. A reward in form of BITCOIN ✓
- ☐ b. Power to vote in the process of BITCOIN development
- ☐ c. More computing power
- ☐ d. A reward in form of Fiat currency

The correct answer is: A reward in form of BITCOIN

Question 28

Incorrect

Mark 0.00 out of 1.00

Which of the following statements best describes the structure of a Bitcoin transaction?

Select one:

- ☐ a. Transactions are composed of a single hash value that represents the entire transaction
- ☐ b. Transactions are composed of inputs, outputs, and a transaction fee
- ☐ c. Transactions are made up of a series of encrypted messages between sender and receiver
- ☒ d. Transactions are made up of sender and receiver addresses, transaction amounts, and a nonce ✗

The correct answer is: Transactions are composed of inputs, outputs, and a transaction fee

Question 29

Incorrect

Mark 0.00 out of 1.00

Which one of the following is not the inherent feature of permission less blockchain?

Select one:

- ☐ a. Auditability
- ☐ b. Decentralization
- ☐ c. Protects user privacy
- ☐ d. Immutable
- ☒ e. Access control ✗
- ☐ f. Transparent
- ☐ g. Protects data privacy

The correct answer is: Protects data privacy

Question 30

Correct

Mark 1.00 out of 1.00

When a record is on a public blockchain, who can access it?

Select one or more:

- ☐ a. Only Miners
- ☒ b. Multiple people simultaneously. ✓
- ☐ c. One person at a time.
- ☐ d. Only the people involved in the transaction.

The correct answer is: Multiple people simultaneously.

Question 31

Correct

Mark 1.00 out of 1.00

What is UTXO?

Select one:

- ☒ a. Unspent Transaction Output ✓
- ☐ b. Union of Texas Operations
- ☐ c. United Texan Xerox Organization
- ☐ d. United Transaction Office

The correct answer is: Unspent Transaction Output

Question 32

Correct

Mark 1.00 out of 1.00

What is the primary advantage of using a Merkle-Patricia trie in Ethereum's data structure?

Select one:

- ☐ a. It stores the entire transaction history of the Ethereum network
- ☒ b. It enables efficient and secure access to account balances and contract data ✓
- ☐ c. It allows for the creation of new coins through mining
- ☐ d. It serves as the consensus mechanism for the Ethereum network

The correct answer is: It enables efficient and secure access to account balances and contract data

Question 33

Incorrect

Mark 0.00 out of
1.00

Which of the following statement is true related to BITCOIN

Select one:

- ☐ a. A new block is inserted to the blockchain approximately 10 minutes after the previous block with an upper limit of 20 minutes
- ☐ b. A new block is inserted to the blockchain exactly after 10 minutes of the previous block
- ☐ c. A new block is inserted to the blockchain strictly more than 10 minutes of the previous block and there is no upper limit
- ☒ d. A new block is inserted to the blockchain approximately 10 minutes after the previous block with a there is no upper limit ❌

The correct answer is: A new block is inserted to the blockchain exactly after 10 minutes of the previous block

Question 34

Incorrect

Mark 0.00 out of
1.00

Where can you buy cryptocurrency?

Select one:

- ☐ a. A private transaction
- ☒ b. All of the above ❌
- ☐ c. A Bitcoin ATM
- ☐ d. An exchange

The correct answer is: An exchange

Question 35

Correct

Mark 1.00 out of
1.00

What happens to the gas fees if an Ethereum transaction or smart contract execution fails?

Select one:

- ☐ a. The gas fees are burned and permanently removed from the total supply
- ☐ b. The gas fees are refunded to the sender
- ☐ c. The gas fees are redistributed to all users on the network
- ☒ d. The gas fees are still paid to the miner for the computational resources used ✔️

The correct answer is: The gas fees are still paid to the miner for the computational resources used

Question 36

Correct

Mark 1.00 out of 1.00

Once records are submitted on a blockchain, can they be altered?

Select one:

- ☐ a. Yes- the developers of the blockchain can alter them
- ☒ b. No – they cannot be altered. ✓
- ☐ c. Yes – but only within a certain time frame.
- ☐ d. Yes – the parties can go back in and alter them at any time.

The correct answer is: No – they cannot be altered.

Question 37

Correct

Mark 1.00 out of 1.00

In Solidity, what keyword is used to define a smart contract?

Select one:

- ☒ a. contract ✓
- ☐ b. module
- ☐ c. object
- ☐ d. class

The correct answer is: contract

Question 38

Correct

Mark 1.00 out of 1.00

What powers the Ethereum Virtual Machine?

Select one:

- ☐ a. Ether
- ☐ b. Bitcoin
- ☒ c. Gas ✓
- ☐ d. Block Rewards

The correct answer is: Gas

Question 39

Correct

Mark 1.00 out of 1.00

One of the major reasons behind the criticism of BITCOIN as compared to other cryptocurrencies is:

Select one:

- ☒ a. It takes a huge amount of energy to mine a bitcoin ✓
- ☐ b. BITCOIN is not accepted as legal tender by many courtiers
- ☐ c. Anybody can create a new cryptocurrency similar to BITCOIN so it has no value
- ☐ d. BITCOIN is not secure as anybody can steal your BITCOIN by modifying the distributed ledger

The correct answer is: It takes a huge amount of energy to mine a bitcoin

Question 40

Correct

Mark 1.00 out of 1.00

What is one of the challenges of permissioned, also known as private or enterprise, blockchain?

Select one:

- ☒ a. Auditability ✓
- ☐ b. Speed
- ☐ c. Security
- ☐ d. Access Control

The correct answer is: Auditability

Question 41

Correct

Mark 1.00 out of 1.00

What is the main function of a Merkle tree in the context of a blockchain?

Select one:

- ☐ a. To store the public and private keys of all users
- ☐ b. To calculate the proof of work for a block
- ☒ c. To store transaction data in a hierarchical, tree-like structure ✓
- ☐ d. To manage the distribution of new coins in the network

The correct answer is: To store transaction data in a hierarchical, tree-like structure

Question 42

Correct

Mark 1.00 out of 1.00

Which is NOT a part of asymmetric encryption?

Select one:

- ☐ a. Public key
- ☒ b. Mining ✓
- ☐ c. Private Key
- ☐ d. Passphrase

The correct answer is: Mining

Question 43

Correct

Mark 1.00 out of 1.00

What is a node in Blockchain?

Select one:

- ☒ a. A computer on a Blockchain network ✓
- ☐ b. A P2P network
- ☐ c. An exchange
- ☐ d. A digital wallet
- ☐ e. A type of cryptocurrency

The correct answer is: A computer on a Blockchain network

Question 44

Correct

Mark 1.00 out of 1.00

How does the blockchain achieve its tamper-proof property?

Select one:

- ☐ a. By storing all data in a centralized database
- ☐ b. By allowing only a select group of nodes to verify transactions
- ☒ c. By using a combination of cryptography and the distributed nature of the network ✓
- ☐ d. By requiring users to provide their real-world identities for every transaction

The correct answer is: By using a combination of cryptography and the distributed nature of the network

Question 45

Correct

Mark 1.00 out of 1.00

What is a hash function?

Select one:

- ☐ a. An API used by the minors to insert a block in the blockchain
- ☒ b. A mathematical function takes an input of any length and returns a fixed-length string of numbers and letters ✓
- ☐ c. A mathematical function takes an input of fixed-length and returns a fixed-length string of numbers and letters
- ☐ d. Used to perform digital signature in blockchain

The correct answer is: A mathematical function takes an input of any length and returns a fixed-length string of numbers and letters

Question 46

Correct

Mark 1.00 out of 1.00

In the context of Bitcoin mining, what does the term "target" refer to?

Select one:

- ☒ a. The threshold value a block's hash must be below for the block to be considered valid ✓
- ☐ b. The reward a miner receives for successfully mining a block
- ☐ c. The maximum number of blocks that can be mined
- ☐ d. The specific block a miner is trying to add to the blockchain

The correct answer is: The threshold value a block's hash must be below for the block to be considered valid

Question 47

Correct

Mark 1.00 out of 1.00

What consensus mechanism does Bitcoin use to maintain agreement among network nodes and secure the blockchain?

Select one:

- ☐ a. Practical Byzantine Fault Tolerance (PBFT)
- ☐ b. Proof of Stake (PoS)
- ☐ c. Delegated Proof of Stake (DPoS)
- ☒ d. Proof of Work (PoW) ✓

The correct answer is: Proof of Work (PoW)


Question 48

Incorrect

Mark 0.00 out of
1.00

What is the primary purpose of solving the hash puzzle in the Bitcoin mining process?

Select one:

- ☐ a. To verify the identity of the sender and receiver
- ☐ b. To maintain a constant rate of block generation
- ☒ c. To confirm that a transaction is valid and not double-spent 
- ☐ d. To generate new coins for the miner who solves the puzzle

The correct answer is: To maintain a constant rate of block generation


Question 49

Correct

Mark 1.00 out of
1.00

What is Proof of Stake?

Select one:

- ☐ a. A certificate needed to use the blockchain
- ☐ b. A password needed to access an exchange
- ☐ c. How private keys are made
- ☒ d. A transaction and block verification protocol 

The correct answer is: A transaction and block verification protocol