

✔ Congratulations! You passed!

Grade	Latest Submission	To pass 80% or higher	Go to next item
received 100%	Grade 100%		

1. Identify features of the Ethereum protocol that the Bitcoin protocol was not initially designed with. *Select all that apply.* 1 / 1 point

- ☒ A Turing-complete virtual machine that executes smart contract code

✔ **Correct**  
Correct. Smart contracts are pieces of programmable logic stored on the blockchain that are executed by nodes. Bitcoin has a simple scripting language, but it isn't Turing-complete.

- ☐ A distributed database design
- ☐ The proof-of-work consensus mechanism.
- ☐ Two intrinsic tokens instead of one. Ethereum has both Ether, and Gas.

2. What is the purpose of gas in the Ethereum blockchain? 1 / 1 point

- ☐ Gas is a petrochemical that is used to power the generators which house the nodes.
- ☐ Gas is a token used to pay for the cost of transactions
- ☐ To create a unit of Ether that is constant regardless of the size of the transaction.
- ☒ Gas is a fee paid by participants to conduct transactions or execute smart contract code.

✔ **Correct**  
Correct. Gas fees can also be thought as of an internal price of making a transaction or running code on the Ethereum network.

3. Which of the following are true of *state channels*? *Select all that apply.* 1 / 1 point

- ☐ State channels are an example of a sidechain.
- ☐ State channels can maintain records of transactions for parties even if they are offline.
- ☒ State channels allow for the clustering of transactions off-chain so that they can be brought on-chain as a group.

✔ **Correct**  
Correct. State channels are one of the scaling solutions for the Ethereum blockchain. Bringing transactions on-chain as a group would be more efficient than bringing them on individually.

- ☐ State channels are on-chain transactions that only a subset of nodes sync in order to help with blockchain scaling issues.

4. Which of the following are features that Bitcoin and Ethereum share? *Select all that apply.* 1 / 1 point

- ☒ Cryptographic tokens

✔ **Correct**  
Correct. Bitcoin uses Bitcoin (BTC) and Ethereum uses Ether (ETH).

- ☒ Consensus mechanisms

✔ **Correct**  
Correct. Both currently use the proof-of-work consensus mechanism. Ethereum is working towards using proof-of-stake.

- ☐ An EVM that can run simple scripts

- ☒ Transactions

✔ **Correct**  
Correct.

- ☒ A peer-to-peer networking infrastructure

✔ **Correct**  
Correct.

5. Which of the following describe properties of *sharding*? 1 / 1 point

- ☒ Sharding allows for operations to run in parallel in separate partitions of the network, increasing the overall processing speed of the blockchain.
- ☐ Each shard confirms processes in other shards in order to strengthen the resiliency of the network.
- ☐ Sharding occurs off-chain leaving more important processing on the main chain.

✔ **Correct**  
Correct. Sharding is the idea of partitioning the network up into smaller parts, or shards, which allows each to work independently and be collated afterward.

6. Which of the following is true of cryptocurrency wallets? *Select all that apply.* 1 / 1 point

- ☒ Cryptocurrency wallets could be described as cryptocurrency keychains.

✔ **Correct**  
True. Since cryptocurrency wallets store private keys, they could be thought of as keychains instead of wallets.

- ☐ The safest wallets are on exchanges, since they spend a great deal on security.

- ☐ Cryptocurrency wallets store physical tokens.

- ☒ A cryptocurrency wallet allows a user to monitor the balance associated with their account address and transfer funds to other addresses.

✔ **Correct**  
Correct, a cryptocurrency wallet stores a public and private keys. The private keys kept in a wallet allow the key owner to prove they “own” currency on the blockchain, so they can transfer it to others.

- ☐ Offline wallets take cryptocurrency off the chain and safely into the hands of the wallet owner.

7. Which of the following describe properties of a *smart contract*? *Select all that apply.* 1 / 1 point

- ☒ Smart contracts can be used as the foundation for dApps.

✔ **Correct**  
Correct. dApps, or Distributed Apps, are called that because much of their logic is distributed via a blockchain.

- ☐ Smart contracts, by definition, are legally binding.

- ☒ Smart contracts should be deterministic, terminable and isolated.

✔ **Correct**  
Correct. Once a smart contract is deployed to the blockchain, its logic is as immutable as transaction data. It will run deterministically once deployed.

- ☒ A smart contract can encode agreements between users.

✔ **Correct**  
Correct. Agreement terms can be codified in a smart contract. If you want a payment to be split between you and a business partner, a smart contract can be created that deterministically does this.

8. Which use case described below makes the most worthwhile use of the Ethereum blockchain? 1 / 1 point

- ☐ Recording sports results data for access long into the future.
- ☒ Tracking car ownership, with titles that can be passed from owner to owner—by the owners themselves—using a token.
- ☐ A data analytics dashboard
- ☐ A messaging app alerting users when a package arrives for them.

✔ **Correct**  
Correct. Tracking ownership information for cars is a good use case because it allows for the ownership of the car to be tokenized, and thus passed from owner to owner with a traceable chain of custody that can be recorded on the blockchain. Depending on how this is done, identity can also be protected, providing security as well. Learn more in Lesson 2: Bitcoin vs Ethereum.

9. \_\_\_\_\_ are the places where you can generally buy, sell, and trade cryptocurrency. 1 / 1 point

Exchanges

✔ **Correct**  
Exchanges connect buyers and sellers together, in the same way that stock exchanges do.