

NOC23-CS44: Blockchain and Its Applications

Assignment 10

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

1. Alice has an account in the Ethereum network and wants to transfer ETH to Bob who has an account in the bitcoin network. Is it possible to do so?
 - a. Yes, it is always possible
 - b. No it is not possible
 - c. Yes, possible via a trusted third party
 - d. None of the above
2. One major issue with TTP based Asset Transfer is, it is very slow. True or False
 - a. True
 - b. False
3. One of the advantages of TTP based Asset Transfer is, it is very secure and no money has been stolen from here till date. True or False?
 - a. True
 - b. False
4. What are some of the issues that exist in Asset Exchange?
 - a. Synchronisation among sender and receiver networks
 - b. Agreement of exchange rates
 - c. Denial of Service
 - d. All of the above
5. Which of the following are guaranteed in the atomic swap protocol ?
 - a. All swaps will take place only when all parties conform to the protocol
 - b. If some parties deviate from the protocol, then all conforming party ends up worse off
 - c. No coalition has an incentive to deviate from the protocol
 - d. All of the above
6. Can Alice send 1 BTC to its own account using timelocked contract.
 - a. No the target account should be different from the sender
 - b. Yes she can send to her own account
 - c. Only possible if she wants to send more than 1 BTC
 - d. It depends on the time value mentioned in the contract.
7. Suppose Alice has a timelocked contract as:

Funding Contract - 1 BTC
Hash: ...Fa4509
Timeout: 2Δ

What will happen if Alice refuses to reveal the key and timeout occurs?

 - a. 1 BTC refunded to Alice
 - b. 1 BTC transferred to target account
 - c. BTC less than 1 refunded to Alice as Some BTC deducted as penalty.
 - d. BTC less than 1 transferred to target account
8. Which of the following statements is valid for Multi-Party Atomic Cross-chain Swap where Alice, Bob and Carol are the parties?

- a. If Alice halts while contracts are being deployed, then all contracts eventually time out and trigger refunds
- b. If Alice halts during triggering of contracts, all the three parties ends up worse off
- c. If Bob halts while contracts are being deployed, then Bob's contracts eventually time out and trigger refunds
- d. If Carol halts during triggering of contracts, only Carol ends up worse off

9. What is an escrow?

- a. Escrow is an agreement in which assets are held and distributed when conditions are met
- b. Escrow is payment for smart contracts
- c. Escrow is a permissioned blockchain
- d. Escrow is cost of execution of smart contracts

10. Which of following statements are the true for PBFT

- a. It requires a dynamic consensus group
- b. For scalability it requires $O(n)$ for communication complexity
- c. create multiple pseudonymous identities to subvert the $3f+1$ requirements of PBFT
- d. None of these