Quiz 3b

- Honor Code: You must work completely independently on this assignment. Do not discuss the questions or answers with each other before the assignment is due. Any breach of the honor code will be handled per the University's policy on academic honesty.
- Follow the instructions very careful. Answers that do not conform to the instructions will not be given credit.
- Submit your answers through Blackboard as a PDF file
- You may use your BCT textbook only. Do not use any other resources.

1. Proof of work is a way to do which of the following? Select all that apply.
    a. Select nodes in proportion to computing power
    b. Let nodes compete for the "right" to create blocks
    c. Make it impossible for one miner to act like many different miners

2. A 51% attacker can potentially do which of the following? Select all that apply.
    a. Steal coins from an existing address
    b. Make it unprofitable for other miners to mine
    c. Change the block reward
    d. Indefinitely suppress specific transaction from the block chain

3. Which of the following are true?
    a. 51% attacks are difficult because an adversary would need to control more than half of the nodes on the Bitcoin network
    b. Proof-of-work is essential for preventing sybil attacks on the Bitcoin blockchain
    c. As a transaction gets buried deeper in the blockchain, it becomes less and less likely that it will ever be undone because the work required to make a longer alternate branch becomes more and more difficult

4. Which of the following affects the block generation interval in Bitcoin?
    a. Cost of electricity
    b. Miners joining the network
    c. Number of nodes in the network
    d. Mining hardware becoming more efficient
    e. Number of broadcasted transactions
    f. Exchange rate

5. Which of the following factors can increase the difficulty level of the proof of work puzzles? Select all that apply.
    a. Size of the transactions in the current proposed block
    b. Value of the Previous hash pointer
    c. Length of the longest chain
    d. Duration of mining the last 1000 blocks