

EE4017 Test 3

Multiple choice questions

MC1(a)

Which of the following security flaw/flaws will has/have a higher chance of happening in an SMS-based Mobile Payment System by cloning a SIM card?

- (a) Replay attacks
- (b) Repudiation
- (c) Impersonation
- (d) Man-in-the-middle attack

MC1(b)

Which of the following form/forms of security flaw/flaws will has/have a higher chance of happening in an SMS-Mobile Payment System when being attacked by mobile malware?

- (a) Replay attacks
- (b) Repudiation
- (c) Impersonation
- (d) Man-in-the-middle attack

MC2(a)

Which of the following statement/statements using tokenization in mobile payment is/are correct?

- (a) It is a process to encrypt sensitive credit card information during a payment process
- (b) The merchant acquirer does not know the credit card information during the payment process
- (c) The encrypted information required a third party to decrypt it for verification during a payment processing
- (d) The merchant acquirer required a remote server to verify the credit card information before confirming a transaction

MC2(b)

Which of the following statement/statements using tokenization in mobile payment is/are correct?

- (a) It is a process to encrypt/decrypt sensitive credit card information during a payment process
- (b) The merchant acquirer does not know the credit card information during the payment process
- (c) The encrypted information required the credit card bank to decrypt it for verification during a payment processing
- (d) It requires a mobile app to carry out the whole payment process

MC3(a)

Which of the following is/are example/examples of NFC payment?

- (a) Apply Pay
- (b) WeChat
- (c) Octopus
- (d) Alipay

MC3(b)

Which of the following is/are example/examples of QR Code payment?

- (a) Andriod Pay
- (b) WeChat
- (c) Octopus
- (d) Alipay

MC4(a)

What is/are the main reason/reasons which hinder the growth of mobile payments in Hong Kong?

- (a) Smartphone penetration
- (b) Bank account penetration
- (c) Credit card penetration per capita
- (d) Mobile security issue

MC4(b)

What is/are the main reason/reasons which hinder the growth of mobile payments in Hong Kong?

- (a) Internet penetration
- (b) Mobile security issue
- (c) Smartphone penetration
- (d) Credit card penetration per capita

MC4(c)

What is/are the main reason/reasons which hinder the growth of mobile payments in Hong Kong?

- (a) Internet penetration
- (b) Bank account penetration
- (c) Mobile security issue
- (d) Credit card penetration per capita

MC5(a)

Which of the following statement/statements about stock is/are CORRECT?

- (a) We may earn a return through receiving the dividends of a stock
- (b) Stockholders have a claim on all assets, so they always have the right to vote for the director of the company
- (c) The price of a stock is varying according to the market demands, so we may also earn a return by trading stock
- (d) Anyone can use ECNs to trade stock directly

MC5(b)

Which of the following statement/statements about stock is/are CORRECT?

- (a) We can only earn a return by selling a stock
- (b) Stockholders have a claim on all assets, but they may not always have the right to vote for the director of the company
- (c) All the banks in HK have been authorized to trade stocks for customers.
- (d) After IPO, the shares of a company (stocks) are traded freely in the open market

MC6(a)

Calculate the intrinsic value (P) of a stock using the Gordon Growth Model and assuming that the stock has a $\$[D_0]$ dividend per share at a growth rate $[g]$ % annually. People holding the stock expect to have a return of $[r]$ % per year.

Ans:

Given $D_0 = 2$; $g = 2\%$; $k = 7\%$;

$$P = 2(1+0.02)/(0.07-0.02) = 40.8 = 41\%$$

MC7(a)

Company A, B, C, and D have a P/E ratio of 100, 30, and 70, 50, respectively. Their current stock price is \$200, \$180, \$420, and \$500, respectively. Which of the company A, B, and C has the highest earnings per share?

- (a) Company A
- (b) Company B
- (c) Company C
- (d) Company D

Ans: $A = \$2$, $B = \$6$, $C = \$6$, $D = \$10$ → company D has the highest earnings per share.

MC7(b)

Company A, B, C, and D have a P/E ratio of 100, 30, and 70, 50, respectively. Their current earning per share is \$20, \$10, \$40, and \$50, respectively. Which of the company A, B, and C has the highest stock price?

- (a) Company A
- (b) Company B
- (c) Company C
- (d) Company D

Ans: A = \$2000, B = \$300, C = \$2800, D = \$2500 → company C has the highest stock price.

MC7(c)

Company A, B, C, and D have current earnings per share of \$20, \$10, \$10, and \$50, respectively. Their current stock price is \$200, \$300, \$150, and \$400, respectively. Which of the company A, B, and C has the highest P/E ratio?

- (a) Company A
- (b) Company B
- (c) Company C
- (d) Company D

Ans: A = 10, B = 30, C = 15, D = 8 → company B has the highest P/E ratio.

MC8(a)

Which of the following statement/statements is/are CORRECT?

- (a) MapReduce is a model that allows any problem to break down into several parallel processing tasks, hence significantly shortening the processing time.
- (b) Hadoop is an open-source software platform which allows scalable computational power to solve problems involving massive amounts of data and computation
- (c) MapReduce model consists of two steps. First, we use the “reduce” function to scale down the data size, then use the “map” function to find out the solution.
- (d) MapReduce requires to work on the file system with a Name-node and Data-node architecture for high-performance access to data storage

MC8(b)

Which of the following statement/statements is/are CORRECT?

- (a) MapReduce is a model that allows some problems to break down into several parallel processing tasks, hence significantly shortening the processing time.
- (b) Hadoop is a commercial software platform which allows scalable computational power to solve problems involving massive amounts of data and computation
- (c) MapReduce model consists of two steps. First, transform input data pairs to intermediate output data pairs, then follow by merging the map output values into final values pair
- (d) MapReduce can work on different kinds of file systems without losing high-performance access to data storage

MC9(a)

Which of the following statement/statements is/are CORRECT?

- (a) The liabilities of the bank are mainly from the capital providers and depositors.
- (b) It is desirable for a bank to have a higher percentage of funding from capital providers than depositors. It is because the money from the depositors is mostly short-term and not reliable.
- (c) The main objective of a bank is to convert liability into an asset
- (d) A bank should hold as much as possible of real estate because it can provide a stable income to the bank.

MC9(b)

Which of the following statement/statements is/are CORRECT?

- (a) The liabilities of the bank are mainly from the capital providers and depositors.
- (b) It is desirable for a bank to have a higher percentage of funding from capital providers than depositors. It is because the money from the depositors is mostly short-term and not reliable.
- (c) The main objective of a bank is to “borrow short” and to “lend long.” It is because “borrow short” can minimize the interest rate to depositors, and “lend long” can maximize the borrowers’ return of interests.
- (d) A bank must hold a minimal amount of excess reserves by law.

MC10(a)

Which of the following statement/statements is/are CORRECT?

- (a) A Certificate of Deposit is a time deposit (CD), commonly sold by banks at a higher interest rate than saving. CD is a kind of non-transaction deposits
- (b) Checkable deposits will have a lower interest rate than savings. However, it allows the holder to write a cheque to third parties
- (c) In the US, one of the FED funds’ purpose is to help maintain a bank reserve.
- (d) The liquidity of securities is lower than real estate

MC10(b)

Which of the following statement/statements is/are CORRECT?

- (a) A Certificate of Deposit is a time deposit (CD), commonly sold by banks at a lower interest rate than saving because CD is a kind of non-transaction deposits
- (b) Checkable deposits will generally have no interest. However, it allows the holder to write a cheque to third parties
- (c) In the US, one of the FED funds’ purpose is to help maintain a bank reserve.
- (d) The liquidity of real estate is higher than securities

MC11(a)

Which of the following statement/statements is/are CORRECT?

- (a) The “proof of work” is used to regulate the generation rate of a new block

- (b) A miner is a computer to store bitcoins
- (c) Orphan blocks are valid and verified blocks but have been rejected by the chain.
- (d) A blockchain is a centralized ledger on a peer to peer network

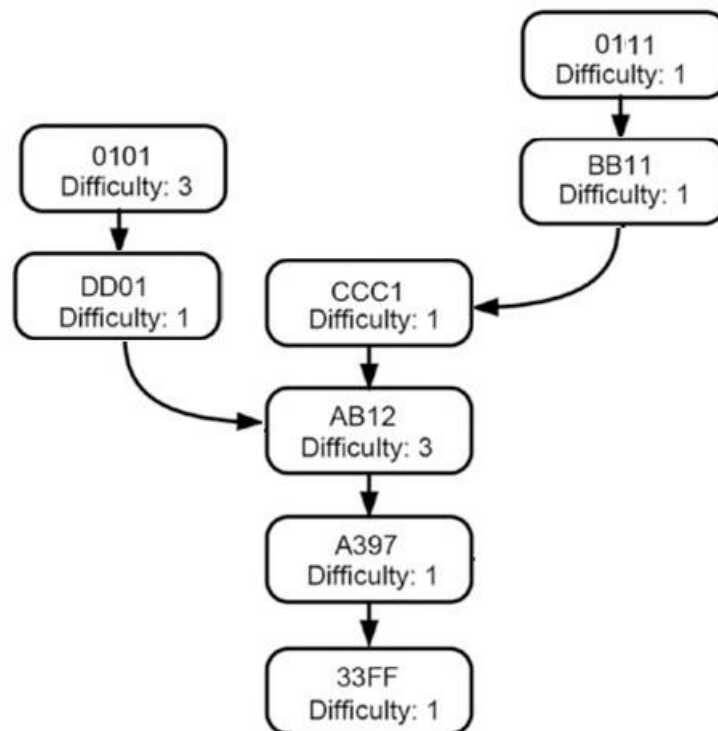
MC11(b)

Which of the following statement/statements is/are CORRECT?

- (a) The “proof of work” is used to create the genesis block
- (b) A miner is a computer that collects transactions and organizes them into blocks.
- (c) Orphan blocks are invalid blocks that have been rejected by the chain.
- (d) A blockchain is a distributed ledger on a peer to peer network

MC12(a)

For the block-chain-structure shown below, the blocks 0101 and 0111 arrive simultaneously before the block DD01 and BB11 are selected to attach a valid block-chain. Identify all the orphan blocks if the longest-chain criterion is used.

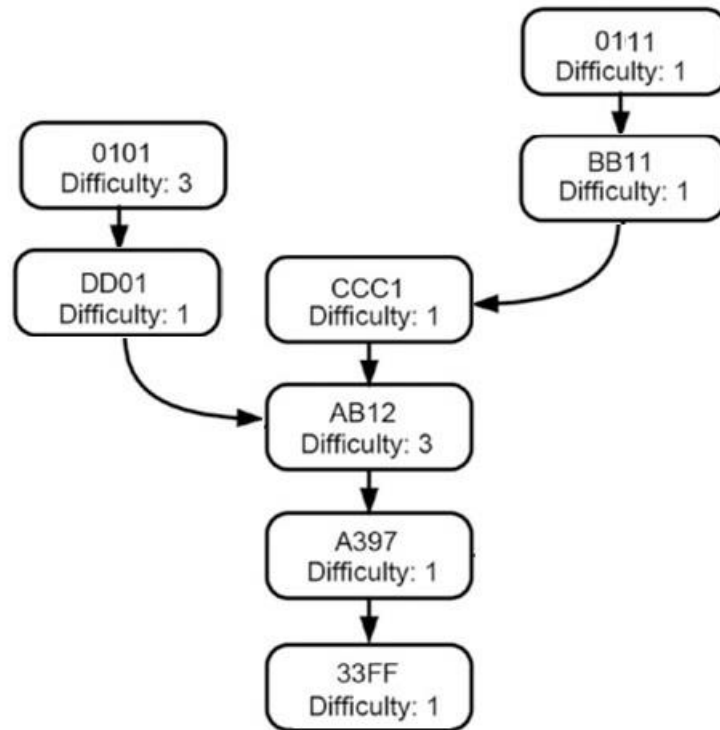


- (a) 0101
- (b) DD01
- (c) 0111
- (d) BB11

Ans: For the chain with DD01 and 0101, there are only 5 blocks in this chain. But for the chain with BB11 and 0111, there are 6 blocks in this chain. The longest-chain criterion is used in this case, therefore DD01 and 0101 is the orphan blocks.

MC12(b)

For the block-chain-structure shown below, the blocks 0101 and 0111 arrive simultaneously before the block DD01 and BB11 are selected to attach a valid block-chain. Identify all the orphan blocks if the heaviest-chain criterion is used.



- (a) 0101
- (b) DD01
- (c) 0111
- (d) BB11

Ans:

For the chain 0101 >> DD01 >> ... >> 33FF, its weighting is 9, but for 0111 >> BB11 >> ... >> 33FF, its weighting is 8. Since 9 is larger than 8, meaning that 0111 and BB11 will be treated as the orphan blocks.