Foundations – Multiple Choice Questions - 30

1. What is one of the primary building blocks of the Bitcoin ecosystem that was invented in 1977?
   1. The RSA encryption algorithm
   2. The e-cash system
   3. E-gold
   4. Liberty reserve
2. Which of the following is NOT true about Blockchain?
   1. It is a distributed database or ledger
   2. Every entry is cryptographically signed
   3. It is supported by a decentralised consensus mechanism
   4. Data on the Blockchain can be changed
3. Which of the following elements is NOT contained on a block?
   1. Hash of the previous block
   2. Time stamp of the Block
   3. All the transactions that make up the block
   4. The nonce for the block
4. Which of the following is eliminated in a network like Bitcoin when making a transaction?
   1. Transaction fees
   2. An Intermediary
   3. Transaction processing time
   4. Redundancy
5. Which of the following statements is NOT true in relation to public and private blockchain networks?
   1. Private networks are within organizations or intra-organisational
   2. Public networks are open and transparent
   3. Private networks require onboarding before the data can be seen
   4. Public networks offer greater privacy and permissioning controls than private controls
6. Which of the following best describes a Blockchain?
   1. A distributed ledger that has transactions and blocks, with the data being the transactions and the blocks the ordering of the data.
   2. A distributed ledger that has transactions and blocks, with the data being the blocks and the blocks the ordering of the data.
   3. A ledger that is distributed across multiple nodes and hold time stamped ownership records.
   4. A ledger that is distributed across multiple nodes and hold ownership records.
7. What are the origins of Cryptography?
   1. From the period of World War 2, to keep messages secret from enemies
   2. From ancient times, in an effort to keep information secret and win advantages in battle.
   3. From the 1970's with the introduction of the RSA algorithm
   4. From the q8th century with the introduction of the Vignere cipher
8. What sort of cipher did Julius Caesar use?
   1. A monoalphabetic substitution cipher
   2. A polyalphabetic substitution cipher
   3. Asymmetric ciphers
   4. A numerical substitution cipher
9. Which of the following describes how asymmetric cryptography works?
   1. Your private key is known to everyone, while the public key is secret
   2. Your public key is known to everyone while the private key is secret.
   3. Both your public and private key are transmitted to assert your identity and ownership
   4. Neither your public nor your private key needs to be known to anyone.
10. Which of the following statement is true in relation to public private key cryptography?
    1. You encrypt with private key and decrypt with the private key
    2. You encrypt with private key and decrypt with the public key
    3. You encrypt with public key and decrypt with the public key
    4. You encrypt with public key and decrypt with the private key
11. Which of the following statement is true in relation to the generation of a public / private key pair?
    1. They are generated from 2 very large odd numbers chosen at random
    2. They are generated from 1 large even and 1 large odd number chosen at random
    3. They are generated from 2 very large prime number chosen at random
    4. They are generated from 2 very large alphanumeric sequences chosen at random
12. In order to be a suitable and effective hashing algorithm it must contain which of the below properties?
    1. They are quick to compute
    2. They are not reversible
    3. There is no collision
    4. All of the above
13. Which of the following would cause a hashing algorithm to be problematic?
    1. Small changes in the input text cause no change to the hash
    2. Small changes in the input text cause huge changes to the hash
    3. The output of the hash is of a fixed length regardless of the input
    4. The output cannot be decrypted back to the original
14. Which statement best describes the purpose of a Digital signature?
    1. It is a signed piece of data that can be decrypted at the other end by the receiver to ensure tamper free communication.
    2. It is a hashed document that is also encrypted with a private key to assure origin and identity.
    3. It is a way of ensuring and insuring that the data that has been transmitted has not been changed during transmission through the uses of hashes and cryptographic keys.
    4. All of the above
15. Which of the following is NOT a central part of the Blockchain security system?
    1. Using private keys to sign transactions
    2. Using public keys to sign transactions
    3. Using a consensus mechanism such as proof of work to avert public threats
    4. Cryptographic hashes to sign and chain blocks together.
16. When trying to achieve consensus which of the following blocks would most likely be chosen?
    1. The most recent block that has been mined
    2. The block that holds a hash record of all the other blocks in the chain so far
    3. A block with proof of work containing the hash of the previous block and a hash of the transactions in current block.
    4. The block created by the longest running node in the network
17. Which of the following best described the purpose of a cryptocoin wallet?
    1. To keep all your transactions safe and secure in one location.
    2. To keep all your Bitcoin addresses in one location
    3. To keep your transactions, addresses and private key pairs secure.
    4. None of the above
18. On which of the following devices / methods can you have a wallet for Cryptocoins?
    1. Standalone USB hardware devices
    2. Paper wallet
    3. Mobile Wallet
    4. All of the above
19. What are Smart Contracts?
    1. Computer code that will verify and execute the terms of contracts automatically
    2. Computer code that will execute a set of instructions automatically
    3. Contracts that make sound business sense and are recorded ona blockchain
    4. All code on a blockchain can be referred to as a smart contract.
20. What language are Ethereum Smart Contracts written in?
    1. They are written in C++
    2. They are written in Solidity
    3. They are written in Javascript
    4. They are written in Python
21. Which of the following is a well known limitations of blockchain technology?
    1. Decentralization
    2. Security arising from double spend problems
    3. Sharing of data is difficult
    4. Performance and throughput are particularly slow
22. Which of the following is an advantage of blockchain technology?
    1. Mass replication of data
    2. Admin overhead is low
    3. Trustless sharing of data and assets
    4. Transaction speed is fast
23. Which of the following is NOT a problem in terms of the Bitcoin Blockchain storage?
    1. Every node storing a copy increases the trust in the system
    2. Every node has to store the Blockchain
    3. The Blockchain size is growing at 100MB a day on average
    4. Network speeds have to be very fast for block data storage and replication
24. Which of the following are part of the wider Blockchain ecosystem?
    1. Ethereum
    2. R3 Corda
    3. BigChainDB
    4. All of the above
25. The distributed application Augur aims to serve which of the following use cases?
    1. The insurance market
    2. Transaction processing
    3. Distributed prediction markets
    4. Payment processing
26. What are the greatest challenges from a regulatory perspective for the Blockchain space?
    1. The decentralised nature of the network and jusrisdiction and territoriality questions.
    2. Understanding the technology landscape which is complicated and new.
    3. Openness and transparency of the blockchain
    4. Ensuring that the incumbents in the industry have a role to play.
27. Which areas do the regulators see the greatest promise from a regulatory standpoint?
    1. In payment processing due to the openness and transparency, coupled with anonymity
    2. The KYC and AML applications of the technology
    3. Transaction processing to facilitate easier financial transactions
    4. Protecting client and end user data
28. Which of the following territories has been less receptive to cryptocoin?
    1. United States
    2. United Kingdom
    3. Japan
    4. China
29. Which of the following best describes a DAO and who controls it?
    1. The DAO is a decentralized and distributed autonomous organization that is not controlled by any one person or organization.
    2. The DAO is like a company and is controlled by the shareholders.
    3. The DAO is controlled by the Ethereum foundation
    4. The DAO runs by itself and is based on code and no one has any say in how it is run.
30. Which of the below can be best described as the opportunities for Blockchain use and implementation?
    1. The area of distributed computing – the idea of a global computer and processing power is a big opportunity
    2. Data sharing and control over data will be a huge opportunity for consumers
    3. The concept of DAO offers the possibility to set up completely new business models and for the removal of third parties charging high fees
    4. All of the above

Key – 1A, 2D, 3C, 4B, 5D, 6A, 7B, 8A , 9B, 10D, 11C, 12D, 13A, 14D, 15B, 16C, 17C, 18D, 19A, 21D, 22C, 23A, 24D, 25C, 26A, 27B, 28D, 29A, 30D