

Blockchain Technology (CT703D-N)

Assignment 2

1. What is Avalanche effect in cryptographic hash function?
2. Differences among centralized, decentralized and distributed systems.
3. Explain Types of Blockchain.
4. What is Blockchain? Explain Genesis Block in Blockchain network.
5. Explain core components of blockchain architecture.
6. Explain characteristics of blockchain architecture.
7. What is orphan block in Blockchain network.
8. Explain which one is better from the decentralized and distributed system.
9. What is double spending problem in cryptocurrency? How to stop double spending problem.
10. What is consensus mechanism in blockchain network? List out consensus mechanism algorithm.
11. Differences between POW and POS.
12. Explain POW, POS and Proof of Burn.
13. What is Bitcoin and How does it work?
14. How to add and validate a block in bitcoin network.
15. What is the difference between distributed Ledger and Blockchain?
16. Explain use of digital signature and public key cryptography in blockchain system.
17. Application domain of blockchain.
18. Explain Confidentiality, integrity and access control in terms of security.
19. Difference between security and privacy as compared to Blockchain.
20. Explain cryptographic hash function.
21. Explain the types of fault and fault tolerance techniques in Blockchain.(Answer : Crash Faults and Byzantine faults)
22. Write short note on permissioned and permissionless blockchain.
23. Explain Merkle root with diagram.
24. Explain Sybil attack and DDOS attack.
25. All terminologies of Blockchain(Blocks, immutability, smart contracts, mining, consensus, miners, PKI, and all others).
26. Write short note on mining.
27. Explain mining pool.
28. Explain double spending problem.
29. Explain orphan block.
30. What is the significance of Remix Platform in Blockchain. Also explain the term 'Gas' in smart contract execution.
31. Write short note on smart contract.
32. Explain PBFT.
33. List few mining pools and their joining methods.
34. Explain proof of burn mechanism.--12
35. Explain PAXOS.
36. Explain RAFT.
37. Explain various use cases regarding permissioned blockchain.
38. Explain sybil and DDos attack.--24
39. Explain mining difficulty.
40. Write short note on Blockchain application is crowd funding(Use case).
41. Write short note on Bitcoin.
42. Explain the architecture and working of smart contracts.
43. What is solidity. Write a solidity program and explain its deployment.

44. Explain 3 phase commit protocol.
45. Explain the role of Blockchain in Medical health care.
46. Explain the research topics that can be explored in Blockchain.
47. Explain Byzantine general problems.
48. Explain the role of Blockchain in compliance to KYC.
49. Write short note on consensus in synchronous and asynchronous systems.
50. Explain the permissioned blockchain consensus algorithms PAXOS and RAFT. --35 and 36
51. Explain working in Ganache framework.
52. Explain Ethereum virtual machine.
53. Write a smart contract for working of a calculator(Addition and subtraction only).