

**Final B. Tech. [Information Technology]**  
**Professional Elective-II [Blockchain Technology]**  
**Question Bank**

1. What is Blockchain? Explain in detail about centralized, decentralized and distributed systems with a neat diagram?
2. Explain about CAP theorem and illustrate the methods of decentralization in detail?
3. Explain about Asymmetric Cryptography in Blockchain?
4. What is the need of Consensus Algorithms in Blockchain and explain Proof-of-Work (PoW) and Proof-of-Burn(PoB) algorithms in detail?
5. Write notes on
  - A. Cryptographic Primitives
  - B. Bitcoin Improvement Proposals (BIPs)
6. Explain in detail about the structure of a block in Bitcoin Blockchain?
7. Discuss about bitcoin investment and buying and selling bitcoins?
8. Write notes on
  - A. Precompiled Contracts
  - B. Accounts and its Types in Ethereum
9. Explain how Ricardian Contracts are different from Smart Contracts. Also discuss about DAO in detail?
10. What are the projects under the Hyperledger? Explain in detail about Hyperledger Fabric and Hyperledger Sawtooth?
11. Briefly explain decentralization framework with example?
12. Differentiate between centralized and decentralized systems?
13. List out the different services of cryptography with neat diagram in Blockchain?
14. Illustrate the Asymmetric Cryptography in Blockchain. In detail?
15. Describe in detail about various consensus algorithms?
16. What is Bitcoin? Explain working mechanism of Bitcoin with transaction and structure?
17. What is wallet in Bitcoin? Explain in detail about the different types of wallet with example?

18. What is Ethereum blockchain? Illustrate the Elements of Ethereum blockchain?
19. Briefly explain block and its various components with neat diagram?
20. Analyze the Ether with Ethereum Network?
21. Define Hyperledger and draw the reference architecture services of Hyperledger and explain each component?
22. With neat sketch design corda architecture and explain each application with example. Sawtooth?
23. Write notes on
  - A. Scalability and security issues
  - B. Accounts and its types
24. Explain in detail about centralized, decentralized and distributed system?
25. Discuss about benefits and limitations of block chain?
26. Interpret cryptographic primitives, asymmetric cryptography, public and private keys in the context of block chain?
27. Explain Bitcoin improvement proposals (BIPs) and Consensus Algorithms in blockchain?
28. What is Transactions? Explain wallets and its types.
29. What is Ethereum? Explain about Elements of the Ethereum block chain?
30. Interpret about Smart Contract, Hyperledger, history of Smart Contract?
31. Explain in detail following blockchain platforms. [8]
  - i) Public
  - ii) Private
  - iii) Consortium
  - iv) IoTA
32. Discuss following consensus algorithms used in blockchain technology.
  - i) Proof of work
  - ii) Proof of activity
33. Explain proof of stake (POS)?
34. Explain consensus in blockchain in details?
35. Explain in detail
  - i) Bitcoin
  - ii) Ethereum
  - iii) Hyperledger

36. Discuss Byzantine General problem?
37. What is smart contract? Explain types of smart contracts.
38. Discuss whisper Decentralized Messaging platform.
39. Explain Ethereum Virtual Machine in detail.