

Priyadarshini College of Engineering, Nagpur
Department of Computer Technology
Session 2023-24
Question Bank
Subject: Blockchain and it's Applications

Unit 1

- What are the various Myths regarding Blockchain. 3M
- What is Decentralization? Explain with the help of supply chain management example. 7M
- Discuss decentralization with a Blockchain. 4M
- Discuss Cryptographic Hash Functions with properties. 6M
- Discuss SHA256 Algorithm with processing. 7M
- What is Hash Pointer? Discuss temper detection using hash chain 7M
- Explain Markle tree 5M
- Explain public key cryptography. 6M
- Discuss RSA algorithm with an example. 7M
- Numerical RSA 7M
- What is Digital Signature? Explain 7M
- Explain Distributed Consensus 6M
- Explain Cryptocurrencies and its evolution. 7M

Unit 2

- What is Nonce? How it is used to solve puzzle in blockchain? 7M
- Discuss DLTs and DApps. 4M
- What are smart Contracts. 4M
- Define Blockchain and explain structure of Block 6M
- Explain block header 6M
- What are Bitcoin scripts? Explain with example. 7M
- What are the steps for joining a bitcoin network? Explain 7M
- Discuss Creation of Coins. 4M
- What is double Spending? Explain how double spending is handled using blockchain. 7M
- Discuss Anonymity in bitcoin 4M

Unit 3

- Explain Permissionless Blockchain. Discuss consensus challenges in permissionless blockchain
- Differentiate Permissioned and Permission less Blockchain
- Discuss
 - I. Proof of Work(PoW) II. Proof of Stack III. Proof of Burn
 - IV. Proof of Elapsed Time
- Describe about working with Consensus in Bitcoin in detail.
- Draw and explain Ethereum Network.
- Discuss Go Ethereum (Geth)
- Discuss Gas
- What is the use of `eth_sendTransaction`
- Discuss DAPPS in Ethereum
- Discuss web3.js
- Discuss
 - I. Ethereum Smart Contracts
 - II. Ethereum Virtual Machine - EVM
 - III. Solidity
- Discuss Permissioned model with an example.
- Discuss Smart Contracts over Closed Networks
- Discuss Smart Contract as State Machines
- Discuss State Machine Replication

- What are the various Faults in a Distributed Systems? Explain
- Explain Asynchronous Consensus with Crash Faults
- Discuss CFT Consensus
- Discuss CFT in a synchronous System and in an Asynchronous System
- What is Paxos? Explain Paxos algorithm
- Explain Byzantine Faults and Byzantine Agreement Protocols