Unit 1

1. Explain with a neat diagram the key concepts of blockchain for business.
2. Define Blockchain, and explain in brief the limitation of current transaction systems that do not use the Blockchain?
3. Describe in detail the steps required to build your first blockchain application.
4. Illustrate in brief the various participants on a blockchain network play.
5. Explain how can we ease interaction friction and innovation friction.
6. What is Hyperledger and Hyperledger Fabric, discuss in details?
7. What are the primary goals of Hyperledger Fabric?
8. Explain with a neat diagram how business networks operated before and after the use of Blockchain.
9. Analyse the benefits for an Airline system after a blockchain is implemented.
10. Discuss the key elements of a blockchain that Hyperledger Fabric fulfills for any business?
11. Analyse the key business benefits of blockchain also explain the attributes of how Blockchain builds trust?
12. Illustrate in detail the common types of market friction that blockchain is capable of alleviating.

Unit 2

1. Illustrate with a neat diagram a Blockchain-based trust infrastructure within a large system.
2. Assume a bank has three servers (nodes), then show a network of three nodes connected by a blockchain network having various transactions and blocks.
3. What is a transaction in Blockchain, and where and how do these transactions play an important role in Blockchain?
4. Explain with a neat diagram Blockchain stacks and types of programming used.
5. Explain what does a Finite State Machine (FSM) diagram is composed of?
6. Construct an FSM diagram for a juice vending machine application.
7. Explain with a neat diagram the Evolution of the internet and the blockchain-based trust layer
8. Compare with a neat diagram, Bitcoin transactions versus smart contract transactions.
9. Demonstrate with a diagram the operations of various participants in a decentralized Airline System Consortium (ASK instead of ASC) blockchain.
10. What makes a blockchain contract smart?
11. Explain with a neat diagram, the process how transactions are created into blocks and how these blocks turn in to chains.
12. Illustrate with a use case diagram representing a decentralized application that will use the counter and the functions involved.
13. Compare with a neat diagram, Bitcoin versus Ethereum protocol stacks.

Unit 3

1. Demonstrate how blockchain-based decentralized systems constituents of trust and integrity are represented.
2. Identify are the stages for a Ballot contract diagram.
3. Illustrate the requirement for the develop and configure of the web application for the front end?
4. Explain the ballot-contract and ballot-app directory structure with a necessary diagram
5. Demonstrate the Dapp Stack with a neat diagram and also what are the Dapp development features using Truffle environment?
6. What are the items for the Ballot smart contract artifacts and ballot-contract directory structure with a neat diagram with respect to Files and folders.
7. Explain the Dapp development layers with a neat diagram.
8. Explain with a neat diagram the architectural model of a blockchain network where two nodes connected by a blockchain network.
9. Illustrate with a neat diagram the Web files and folders in the src directory.
10. Illustrate the Dapp development process steps.

Unit 4

1. Demonstrate with a neat diagram, the different types of data to 256-bit hashes.
2. Explain with a neat diagram the architectural model of a blockchain network where two nodes connected by a blockchain network.
3. Illustrate with a neat diagram the Web files and folders in the src directory.
4. Explain with a neat diagram the Traditional application vs. blockchain Dapp with on-chain and off-chain data.
5. What is the importance of Security and privacy in blockchain.
6. Explain the various elements of trust and integrity with necessary diagram.
7. What is On-chain data in blockchain? Explain with a neat diagram the Elements of on-chain data.
8. Explain the basic concepts of Hashing with a proper example in Blockchain.
9. Demonstrate how Hashing can be used in signing document, Distributed ledger and how Hashes are used in Ethereum block header with a diagram.
10. Construct a State transition FSM diagram and contract diagram for the various stages for an online Ballot system.
11. Explain with a neat diagram how Off-chain data is stored on a variety of data sources

Unit 5

1. Explain with a neat diagram the role of web3 in the blockchain-based Dapp stack, and explain the layers in brief.
2. Illustrate with diagram Web3 API as a large unit with many packages representing various functions.
3. What are the basic facts about a micropayment channel?
4. Explain a neat diagram the Role of web3 in the blockchain-based Dapp stack
5. Explain with a neat diagram Relationship between the main channel and micropayment channel.
6. Explain in details the blockchain use cases (i) Supply chain, (ii) Health care. Also address advantage and disadvantages.
7. Illustrate with a neat diagram the End-to-end process for public deployment steps in deploying a Dapp on Infura.
8. Explain with a neat diagram the network-of-nodes concept also knows as a network of Ethereum nodes.
9. Explain with a neat diagram the various services offered by Infura in support of the expanding ecosystem of blockchain-based Dapps.
10. What is Micropayment channel? Compare Traditional banks vs. blockchain payment channels in details.
11. Explain with a neat diagram the Traditional vs. blockchain-based system with differences highlighted.