

(3Hours)

[Total Marks: 75]

N. B.: (1) All questions are compulsory.

(2) Make suitable assumptions wherever necessary and state the assumptions made.

(3) Answers to the same question must be written together.

(4) Numbers to the right indicate marks.

(5) Draw neat labelled diagrams wherever necessary.

(6) Use of Non-programmable calculators is allowed.

**Q1. Attempt the three of the following.**

**15 Marks**

- What is a blockchain?
- Explain the different layers of Blockchain.
- What is symmetric key cryptography?
- How does game theory influence Blockchain?
- What is Off-chain computation and sharding

**Q2. Attempt the three of the following.**

**15 Marks**

- Specify the Characteristics of Ethereum
- Why Gas is important?
- Explain the concept of Global banking?
- What is Complementary Currency?
- Give the tips for Reading code?

**Q3. Attempt three of the following.**

**15 marks**

- What is Hyperledger?
- What is the Hyperledger composer? Give its advantages
- Define Smart contracts.
- Give Benefits of Smart contracts.
- List the Applications of smart contracts.

**Q4. Attempt three of the following.**

**15 marks**

- Explain DAG and Nonce
- How Ethereum and Bitcoin Use Trees
- Demonstrate Mining on the Testnet
- Describe Cryptoeconomics
- How speed of blocks play an important role in mining

**Q5. Attempt three of the following.**

**15 marks**

- What are decentralized applications?
- What are Ethereum?
- What are smart contracts?
- What are Dapp?
- What are private blockchain?

\*\*\*\*\*