

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2024****Subject Code:3171618****Date:11-12-2024****Subject Name: Blockchain****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

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|------------|--|-----------|
| Q.1 | (a) Discuss the concept of cryptocurrency and its advantages. | 03 |
| | (b) Discuss the concepts of a distributed ledger, peer-to-peer networks, consensus mechanism, and incentive mechanism in relation to Blockchain. | 04 |
| | (c) Discuss the various types of Blockchain in detail. | 07 |
| Q.2 | (a) Discuss the major types of smart contracts. | 03 |
| | (b) Discuss the application areas of Blockchain technology. | 04 |
| | (c) Discuss the smart contract in Ethereum in detail. | 07 |
| | OR | |
| | (c) Discuss the features of Bitcoin and compare Bitcoin with Ethereum. | 07 |
| Q.3 | (a) Differentiate between private Blockchain and public Blockchain. | 03 |
| | (b) Discuss the concept of oracles. Also discuss various types of oracles. | 04 |
| | (c) Discuss the key characteristics of private Blockchain. | 07 |
| | OR | |
| Q.3 | (a) Differentiate between Bitcoin and Ripple. | 03 |
| | (b) Discuss the concept and usefulness of the Hyperledger platform. | 04 |
| | (c) Discuss the fundamentals of consortium Blockchain including its characteristics, advantages, and disadvantages. | 07 |
| Q.4 | (a) Discuss the concept of state machine in Blockchain technology. | 03 |
| | (b) Discuss Corda distributed ledger technology in detail. | 04 |
| | (c) Discuss different algorithms for permissioned Blockchain. | 07 |
| | OR | |
| Q.4 | (a) Discuss the advantages of decentralisation in Blockchain technology. | 03 |
| | (b) Discuss the concept of a block header and block body in Blockchain in detail. | 04 |
| | (c) Discuss the concept of Byzantine fault. Also discuss various fault tolerance mechanisms. | 07 |
| Q.5 | (a) Discuss the concept of smart contracts in the real estate industry. | 03 |
| | (b) Discuss the various challenges of Blockchain implementation. | 04 |
| | (c) Discuss the usefulness of Blockchain in the education domain. | 07 |
| | OR | |
| Q.5 | (a) Discuss advantages of Blockchain technology in the banking or finance sector. | 03 |
| | (b) Discuss the different limitations of Blockchain implementation. | 04 |
| | (c) Discuss the usefulness of Blockchain in the healthcare domain. | 07 |
