

# KADI SARVA VISHWAVIDYALAYA

## BE. Semester VII

Blockchain Technology - CT703D-N

Date: 19/11/2024

Time: 12:30 to 3:30

TOTAL MARKS: 70

### Instructions:

- 1 Answer each section in separate answer sheet.
- 2 Use of scientific calculator is permitted.
- 3 All questions are **Compulsory**.
- 4 Indicate **clearly**, the options you attempt along with its respective question number.
- 5 Use the last page of main supplementary for **rough work**.

### SECTION – I

#### Q-1 Answer the following questions.

- A What is Blockchain? Explain Genesis Block in Blockchain network. 5
- B Explain core components of blockchain architecture. 5
- C Explain which one is better from the decentralized and distributed system. 5

OR

- C What is orphan block in Blockchain network? 5

#### Q-2 Answer the following questions.

- A What is consensus mechanism in blockchain network? List out consensus mechanism algorithm. 5
- B Explain POW, POS and Proof of Burn. 5

OR

- A What is Bitcoin and How does it work? 5
- B What is the difference between distributed Ledger and Blockchain. 5

#### Q-3 Answer the following questions.

- A Explain use of digital signature and public key cryptography in blockchain system. 5
- B Explain cryptographic hash function. 5

OR

- A Explain Sybil attack and DDOS attack. 5
- B Write short note on permissioned and permissionless blockchain. 5

## SECTION – II

**Q-4 Answer the following questions.**

- A** Explain the concept of smart contracts and give one real-world use case 5
- B** What is the Byzantine Generals Problem and why is it significant in blockchain? 5
- C** Explain how blockchain can be used in crowdfunding and its potential benefits. 5

**OR**

- C** Compare the PAXOS and RAFT consensus algorithms in detail. 5

**Q-5 Answer the following questions.**

- A** What role does blockchain play in supply chain management? 5
- B** What is a Merkle Tree and how does it enhance data integrity within a blockchain? 5

**OR**

- A** Discuss the advantages of using blockchain technology in international trade finance. 5
- B** What is Bitcoin Script (FORTH) and how does it enable Bitcoin transactions? 5

**Q-6 Answer the following questions.**

- A** Explain the concept of a smart contract and its significance in Ethereum. 5
- B** What is Solidity and why is it used for developing Ethereum smart contracts? 5

**OR**

- A** What is "gas" in Ethereum and why is it important? 5
- B** Describe the role of the Ethereum Virtual Machine (EVM) in executing smart contracts. 5