Faculty of Science and Technology

B.Tech. (Computer Science and Engineering/CT) Semester—VIII (C.B.C.S.) Examination

BLOCKCHAIN AND ITS APPLICATION

PROG . ELE. – VII

Time : Three Hours]   [Maximum Marks : 70

INSTRUCTIONS TO CANDIDATES

(1) All questions carry marks as indicated.

(2) Solve question **1 OR** question No. **2**.

(3) Solve question **3 OR** question No. **4**.

(4) Solve question **5 OR** question No. **6**.

(5) Solve question **7 OR** question No. **8**.

(6) Solve question **9 OR** question No. **10**.

(7) Due credit will be given to neatness and adequate dimensions.

(8) Assume suitable data wherever necessary.

1. (a) Justify the importance of Hashing in Blockchain.   6

   (b) What is Merkle tree ? Explain the structure of merkle tree.   8

OR

2. (a) Discuss various limitations of Centralized system with respect to decentralized system.   7

   (b) Write a note on Evoluation of Blockchain.   7

3. (a) What do you understand by the Proof of Work (PoW) and Proof of Stake (PoS) ?   7

   (b) Define blockchain and explain structure of block and block header.   7

OR

4. (a) Explain RSA key generation and verification.   8

   (b) How is SHA-256 used in blockchain, and why ?   6

5. (a) Define the purpose and types of Smart Contracts.   8

   (b) Write a note on Ethereum Virtual Machine.   6

OR

6. (a) Discuss Byzantine General problem.   7

   (b) What is Block mining ? Describe the task of miners in detail.   7

7. (a) Explain in detail :

       (i)   Bitcoin

       (ii) Ethereum

       (iii) Hyperledger.   9

    (b) Differentiate between permissioned and permission less blockchain.   5

OR

8. (a) Explain in detail Hyperledger fabric and Hyperledger sawtooth.   7

    (b) Discuss DAPPs in Etherum.   7

9. (a) Explain in detail how can blockchain be used for identity management.   6

    (b) Discuss in your words about the emerging trends in blockchain technology and its applications in real-life scenarios.   8

OR

10. (a) Discuss problem with interoperability in blockchain using an example.   7

    (b) Explain how blockchain can be used in financial services.   7