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BENGALURU
School of Computer Science and Engineering
Mid - Term Examinations - November 2024

Semester: V

Date: 04-11-2024

Course Code: CSE2019

Time: 02.00pm to 03.30pm

Course Name: Foundations of Blockchain Technology

Max Marks: 50

Program: B. Tech

Weightage: 25%

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks.

5Qx2M=10M

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|---|--|---------|----|-----|
| 1 | Explain Public blockchain? | 2 Marks | L1 | C01 |
| 2 | Describe why a blockchain is called irreversible. | 2 Marks | L1 | C01 |
| 3 | How can the banking sector use blockchain for their security concerns to increase defenses against the evolving cyber threats. | 2 Marks | L2 | C01 |
| 4 | Define Smart Contracts. | 2 Marks | L1 | C02 |
| 5 | Name two common types of consensus mechanisms used in blockchain networks. | 2 Marks | L1 | C02 |

Part B

Answer ALL Questions. Each question carries 10 marks.

4QX10M=40M

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|-----------|--|--------|----|-----|
| 6 | a. Describe the tiers of a blockchain technology. | 5Marks | L1 | C01 |
| | b. How Does a Consensus Mechanism Work? | 5Marks | L2 | C01 |
| or | | | | |
| 7 | a. Compare PoS and DPoS? | 5Marks | L1 | C01 |
| | b. What is the significance of PoI illustrating it with example? | 5Marks | L2 | C01 |

8	a. Define and explain the three primary tiers of blockchain.	5Marks	L1	CO2
	b. Compare PoC with PoET.	5Marks	L3	CO2
Or				
9	a. Compare PoA with PoB.	6Marks	L1	CO1
	b. Explain Pros and Cons of Consensus Mechanisms.	4Marks	L3	CO1
	a. Explain Byzantine Fault Tolerance.	4Marks	L1	CO2
10	b. Discuss the role of consensus in ensuring the security and integrity of a blockchain network.	6Marks	L2	CO2
Or				
11	a. Discuss Merkle trees and its benefits?	4Marks	L1	CO2
	b. Define Delegated Proof of Stake (DPoS). Explain how it differs from traditional Proof of Work (PoW) consensus mechanisms.	6Marks	L2	CO2
12	Merkle tree can be used to organize and secure digital information. Illustrate it through an example.	10Marks	L2	CO2
Or				
13	Enumerate and explain the components of the generic elements in a blockchain with a neat block diagram.	10Marks	L3	CO2