PVP 20

Code: 20CS4601C

III B.Tech - II Semester – Regular / Supplementary Examinations
APRIL 2024

BLOCKCHAIN TECHNOLOGY
(COMPUTER SCIENCE & ENGINEERING)

Duration: 3 hours Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

BL – Blooms Level CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Explain the required technologies in block chain implementation.	L2	CO1	7 M
	b)	Discuss how Merkle Trees are used to efficiently verify the integrity of data within a block.	L3	CO2	7 M
OR					
2	a)	Illustrate and explain block chain architecture.	L2	CO1	7 M
	b)	Define consensus algorithms in the context of block chain and their importance in reaching agreement among network participants.	L3	CO2	7 M
UNIT-II					
3	a)	How does block chain enable decentralization in practice?	L3	CO2	7 M

	b)	Explain about contest-driven decentralization.	L3	CO4	7 M
OR					
4	a)	Explain in detail about centralized, decentralized and distributed systems with a neat diagram?	L3	CO2	7 M
	b)	Explain the major challenges in the decentralization of block chain technology.	L3	CO2	7 M
UNIT-III					
5	a)	Explain about Asymmetric Cryptography in Block chain?	L3	CO2	7 M
	b)	Explain the working functionality of mining algorithm in Bitcoin.	L3	CO2	7 M
OR					
6	a)	Explain any two block ciphers with the example scenarios.	L2	CO2	7 M
	b)	What are the hash rate mining systems? Explain any two mining systems.	L2	CO2	7 M
UNIT-IV					
7	a)	Explain the life cycle of a smart contract.	L2	CO2	7 M
	b)	What is Ethereum network? Explain the components of the Ethereum ecosystem.	L3	CO3	7 M
OR					
8	a)	Explain about execution environment in Ethereum virtual machine.	L3	CO3	7 M
	b)	Explain the operations of a DApp in Ethereum.	L3	CO3	7 M

UNIT-V					
9	a)	Explain the fundamental components of the Hyperledger reference architecture.	L3	CO3	7 M
	b)	Describe about Hyperledger Frabric in Detail.	L3	CO3	7 M
OR					
10	a)	What is Hyperledger, and what distinguishes it from other block chain platforms? Explain its requirements & Design goals.	L3	CO3	7 M
	b)	How does block chain Quorum address the specific needs of industries beyond crypto-currency, such as finance or supply chain management?	L3	CO4	7 M