KUMARAGURU
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Register Number:………….….

MCA DEGREE EXAMINATIONS: NOV/DEC 2024

(Regulation 2020)

Third Semester

MASTER OF COMPUTER APPLICATIONS

P20CAE0008: Blockchain Technologies

COURSE OUTCOMES

CO1: Understand the technology components of Blockchain and how it works behind the scenes.

CO2: Be aware of different approaches to developing decentralized applications.

CO3: Understand Bitcoin and its limitations by comparing with other alternative coins.

CO4: Establish deep understanding of the Ethereum model, its consensus model and code execution.

CO5: Understand the architectural components of a Hyperledger and its development framework.

CO6: Aware of the alternative blockchains and emerging trends in blockchain.

Time: Three Hours   **Maximum Marks: 100**

Answer all the Questions: -

PART A (10 x 2 = 20 Marks)

1.	What is decentralization in the context of blockchain?	CO1	[K_2]
2.	State any two properties of Zcash.	CO2	[K_2]
3.	Compare decentralized and distributed system.	CO2	[K_3]
4.	Differentiate between public and private keys in bitcoin.	CO3	[K_3]
5.	What is a mining pool?	CO3	[K_2]
6.	What is the Ethereum Virtual Machine (EVM), and why is it significant?	CO4	[K_2]
7.	What is the purpose of Solidity language?	CO4	[K_2]
8.	How does Web 3.0 differ from traditional web technologies?	CO5	[K_3]
9.	Highlight the unique characteristics of Corda.	CO5	[K_2]
10.	Mention two privacy challenges faced by blockchain technology.	CO6	[K_2]

PART B (6 x 5 = 30 Marks)

11.	Trace the history and development of blockchain technology.	CO1	[K_2]
12.	Explain how blockchain achieves decentralization.	CO2	[K_2]

13. Analyze the differences between smart contracts and Ricardian contracts. CO3 [K4]

14. Explain the fee structure in the Ethereum network. CO4 [K2]

15. List the steps in the transaction life cycle of a Hyperledger. CO5 [K2]

16. Compare Ripple and Tendermint blockchain technologies. CO6 [K3]

Answer any FIVE Questions
PART C (5 x 10 = 50 Marks)

17. Discuss the various types of consensus algorithms. CO1 [K2]

18. Examine the potential use of blockchain technology in an online shopping cart application. CO2 [K3]

19. Examine the features of different wallets and determine the best wallet. CO3 [K3]

20. Describe the key features of Web 3.0. CO4 [K2]

21. Explain the reference architecture of a Hyperledger with neat sketch. CO5 [K2]

22. Discuss the consensus mechanism used in Kadena with a neat diagram. CO6 [K2]

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