

CBCS SCHEME

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MMCH311D



Third Semester MCA Degree Examination, June/July 2026 Blockchain Technologies

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.*

Module – 1			M	L	C
Q.1	a.	What is a blockchain? Explain the working methodology of blockchain.	10	L2	CO1
	b.	What is the difference between a public key and a private key in terms of data security? Explain with suitable examples.	10	L2	CO1
OR					
Q.2	a.	What are the merits and demerits of a block chain network?	5	L2	CO1
	b.	Apply the concepts and principles of a secure and distributed ledger to assess the applicability of block chain into aircraft maintenance.	10	L2	CO1
	c.	Compare Blockchain and Bitcoin.	5	L2	CO1
Module – 2					
Q.3	a.	Describe the architecture of block chain.	10	L2	CO2
	b.	Compare a block chain network and database management system.	10	L2	CO2
OR					
Q.4	a.	Explain the RC4 cipher with a suitable example	10	L2	CO2
	b.	What is a crypto currency? What are its different types?	5	L2	CO2
	c.	Explain five application areas where block chain can be used for security purposes.	5	L2	CO2
Module – 3					
Q.5	a.	What is double spending? What are the problems that double spending may cause?	5	L2	CO3
	b.	Explain Zero Knowledge Proof with an example.	10	L2	CO3
	c.	What is the structure of a typical block chain block?	5	L2	CO3
OR					
Q.6	a.	Explain the working of the SHA 256 hashing algorithm.	10	L2	CO3
	b.	What is meant by Proof of Work and Proof of Stake?	10	L2	CO3

Module – 4

Q.7	a.	Describe in brief, Bitcoin as a crypto currency. What is the content of Bitcoin's genesis block?	10	L2	CO4
	b.	What are the merits and demerits of bitcoin?	5	L2	CO4
	c.	What is Bitcoin cash? How is it different from bitcoin?	5	L2	CO4

OR

Q.8	a.	What do you understand by hard and soft fork in bitcoin?	10	L2	CO4
	b.	Describe in detail about SegWit?	10	L2	CO4

Module – 5

Q.9	a.	Why does Ethereum use Proof of Stake as mining method?	5	L2	CO5
	b.	What is a smart contract? How do you write a smart contract?	10	L2	CO5
	c.	Compare Ethereum and Bitcoin.	5	L2	CO5

OR

Q.10	a.	Describe the structure of the ethereum block.	10	L2	CO5
	b.	What is the use of the NONCE element in the blockchain block?	5	L2	CO5
	c.	What are the legal implications and regulations pertaining to cryptocurrency (Ethereum)?	5	L2	CO5

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