P. Pages: 2

Max. Marks: 70

Time: Three Hours

Notes:
1. All questions carry marks as indicated.
2. Solve Question 1 or Question 2.
3. Solve Question 3 or Question 4.
4. Solve Question 5 or Question 6.
5. Solve Question 7 or Question 8.
6. Solve Question 9 or Question 10.
7. Due credit will be given to neatness and adequate dimensions.
8. Assume suitable data wherever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.

Q. No.		Question	CO	BT	Marks
1.	a)	What is Blockchain? What are its key elements of blockchain?	CO1	1	07
	b)	Explain the Core Components of Blockchain Architecture.	CO1	2	07
		OR			
2.	a)	Discuss about the advantages and disadvantages of blockchain.	CO1	1	07
	b)	Enlist and explain the applications of blockchain in detail	CO1	1	07
3.	a)	Differentiate between Public and Private Ledgers.	CO2	2	07
	b)	What do you understand by the term Hyperledger? Draw and explain its framework.	CO2	2	07
		OR			
4.	a)	Explain the use of Cryptography in Cryptocurrencies.	CO2	1	14
	b)	Describe cryptographic algorithm – SHA 256.			
5.	a)	Discuss in brief about Hardness of Bitcoin Mining.	CO3	1	07
	b)	How does Double Spending Happen? What are its type?	CO3	1	07
		OR			
6.	a)	What do you understand by Bitcoin Wallet? Discuss different types.	CO3	2	07
	b)	Write short notes on POW and POS.	CO3	2	07

60

Q. No.		Question	CO	BT	Marks
7.	a)	What do you understand by Ethereum Virtual Machine (EVM)? How Does EVM Works?	CO4	1	07
	b)	Discuss about pros and cons in case of EVM.	CO4	2	07

OR

| 8. | a) | Write short notes on Ethereum Solidity. | CO4 | 2 | 07 |
| | b) | What are smart contracts on blockchain? | CO4 | 1 | 07 |

| 9. | a) | Discuss about different Blockchain Implementation Challenges. | CO5 | 1 | 07 |
| | b) | Explain about Zero Knowledge proofs and protocols in Blockchain. | CO5 | 1 | 07 |

OR

| 10. | | Write notes on: | CO5 | 2 | 14 |

i) Succinct non interactive argument for Knowledge (SNARK)
ii) Pairing on Elliptic curves
iii) Zcash - attacks on Blockchains