Paper / Subject Code: 42177 / BLOCK CHAIN (DLOC - IV)

BE/COMP/SEM VII/C-SCHEME/DLOC-IV/NOV 2022/16.12.2022

(3 Hours)

N.B.: 1. Question No. 1 is compulsory.

(Total Marks: 80)

	2. Answer any three out of the remaining questions.	
	3. Assume suitable data if necessary.	
	4. Figures to the right indicate full marks.	
	ARVAT, RA	
Q1.	Attempt the following (any 4):	(20)
	a. Define blockchain? Compare different types of blockchain.	
	b. What is a smart contract? How crowdfunding platforms can be managed using smart	
	contracts?	
	c. What is a backup in Practical Byzantine Fault Tolerance (PBFT) algorithm?	
	d. What is a Merkle tree? Explain the structure of a Merkle tree.	
	e. Write a program in solidity to check whether a number is prime or not.	
	o. While a program in somary to eneck whether a name of its printe of its	
Q2.	Attempt the following:	
Q2.	a. State and explain various challenges that occur while implementing blockchain.	(10)
	b. What is a double spending problem? How PoW solves the problem of double spending?	(10)
	o. What is a double spending problem. How to W solves the problem of double spending.	(10
Q3.	Attempt the following:	
QJ.	a. Compare Bitcoin and Ethereum. How to calculate Mining difficulty in bitcoin	(10
	b. Explain Hyperledger Fabric v1 architecture.	(10)
	b. Explain Hyperredger Labrie VI architecture.	(10
Q4.	Attempt the following:	
Q4.	a. Describe the architecture of Ethereum.	(10
	b. Write a program in solidity to implement multi-level inheritance.	(10)
	o. Write a program in sometry to implement multi-level finicitance.	(10
05	Attempt the fellowing	
Q5.	Attempt the following: a. Explain PAXOS consensus algorithm for a private blockchain.	(10)
		(10)
	b. Explain fixed and dynamic arrays in solidity with suitable examples.	(10)
06	White chart sets of (2002)	(20)
Q6.	Write short notes on (any 2):	(20
	a. Corda	
	b. UTXO model of Bitcoin	
	c. Quorum	
	d. Fallback function in Solidity	

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