



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Second Semester, M. Tech - Computer Science and Engineering (MCSE)

Semester End Examination; October -2022

Block Chain Technologies

Time: 3 hrs

Max. Marks: 100

Note: I) Answer any **FIVE** full questions, selecting **ONE** full question from each unit.

II) Any **THREE** units will have internal choice and remaining **TWO** unit questions are compulsory.

III) Each unit carries 20 marks.

Q. No.	Questions	Marks	BLs	COs	POs
UNIT - I		20			
1 a.	Explain in detail layers of Block chain.	10	L2	CO1	PO2,3
b.	Explain Cryptographic Hash functions.	10	L2	CO1	PO2,3
UNIT - II		20			
2 a.	Write a program to calculate the keys for two parties using Diffie-Hellman key exchange algorithm.	10	L3	CO2	PO3,4
b.	Explain the following game theory: i) Nash equilibrium ii) Prisoner's Dilemma	10	L2	CO2	PO3,4
OR					
2 d.	Explain, how Merkle tree works?	10	L2	CO2	PO3,4
e.	Explain any five properties of Block chain solution.	10	L2	CO2	PO3,4
UNIT - III		20			
3 a.	Explain Block Structure of Bitcoin.	10	L2	CO3	PO2,3
b.	Explain the bit coin transacting of a Bitcoin system.	10	L2	CO3	PO2,3
OR					
3 d.	Explain Bitcoin Block chain network on the internet.	10	L2	CO3	PO2,3
e.	Explain the following: i) SPVs ii) Bitcoin Wallets	10	L2	CO3	PO2,3
UNIT - IV		20			
4 a.	Explain Block chain data structure of ethereum.	10	L2	CO4	PO2,3
b.	Explain design philosophy of ethereum.	10	L2	CO4	PO2,3
OR					
4 d.	With diagram, explain ethereums state transition function.	10	L2	CO4	PO2,3
e.	Explain ethereum ecosystem.	10	L2	CO4	PO2,3
UNIT - V		20			
5 a.	Explain setup and initialize the Bitcoin's library in a node js application.	10	L2	CO5	PO3,4,5
b.	Explain, how to deploy contract to ethereum network?	10	L2	CO5	PO3,4,5