UPES
UNIVERSITY OF TOMORROW

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2022

Course: Blockchain for Business **Semester: VI**
Program: B.Tech. CSE BAO **Time   : 03 hrs.**
Course Code: CSBL3001 **Max. Marks: 100**

Instructions: Attempt all Questions.

SECTION A (5Qx4M=20Marks)		

S. No.		Marks	CO
Q 1	How blockchain is different from a database.	4	CO1
Q2	How the blocks mined at the same time are added to the "bitcoin" blockchain?	4	CO1
Q3	How encryption is different from hashing? List out 2 applications of encryption and hashing each.	2+2=4	CO1
Q4	List out any 4 limitations of blockchain.	4	CO2
Q5	Define the following terms: a) Full node b) Hard Fork	4	CO3

SECTION B (4Qx10M= 40 Marks)		

Q6	Explain public key cryptography. How the digital signatures are created and used in blockchain?	5+5=10	CO1
Q7	What are Hyperledger and Chaincode? Explain in brief, any one project under Hyperledger Foundation.	10	CO1
Q8	How the consensus is achieved in most of the blockchains? Exemplify any 4 consensus mechanisms in detail.	10	CO2
Q9	Explain the importance of smart contracts in blockchain? Discuss any two applications where smart contracts can be used with examples. **OR** Name any three languages in which one can write a chain code for Hyperledger Fabric. How one can start, close, and create a new channel in Hyperledger Fabric?	10	CO3

SECTION-C (2Qx20M=40 Marks)		

Q10	a) Discuss how the distributed ledger is maintained in "bitcoin" with	10+10	CO2

	all necessary components.		
	b) Design and explain the necessary components to create a new cryptocurrency.		
Q11	a) Design donation system based on blockchain with all necessary components clearly stating the mining process, consensus mechanism, block and transaction information, type of blockchain used, and data storage technique. b) Explain the role of different stakeholders in the above-designed chain. Discuss the advantages of the designed system over a conventional donation-based system **OR** a) Discuss any 5 applications other than cryptocurrency where blockchain can be used. b) Explain the role of smart contracts in the above-mentioned applications. Design smart contracts for any one application for various stakeholders.	**10+10**	**CO3**