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	Thapar Institute of Engineering & Technology, Patiala
ti	**(Deemed to be University)**
	Department of Electronics & Communication Engineering
	EST- Written Test

Roll Number: _____   Name: _____

BE- ENC   **UCS754 / UEC635: Blockchain Technology**
Date- December 9th, 2022
Time: 03 Hours   **Name of Faculty: Dr. Shashikant,**
Max. Marks: 50   **Dr. Chandramohan**

NOTE: * Attempt all five questions
          ** Assume any missing information.

Q1. a. Draw the basic architecture of Blockchain showing different layers and explain it highlighting its features. **5**

b. What is consortium blockchain? Explain with a neat and clean diagram. **5**

Q2. a. What is a Merkle Tree and how is it made? Explain why it is used in Blockchain technology. **5**

b. Discuss public key cryptography, its pros & cons and role of digital signatures in the context of integrity of the system. **5**

Q3. a. Differentiate between *Proof of Work (PoW)* and *Proof of Stake (PoS)* consensus mechanisms. **5**

b. What are different types of attacks on *Proof of Work (PoW)* based systems. Discuss. **5**

Q4. What is Byzantine Fault Tolerance and how can it be implemented in Blockchain ? Explain in detail taking example of *Byzantine Generals Problem.* **10**

Q5. The scenario includes two clients, A and B, who are buying and selling radishes using hyperledger. They each have a peer on the network through which they send their transactions and interact with the hyperledger. Outline the transactional mechanics **10** (also known as *Transaction Flow of Hyperledger*) that take place during a standard asset exchange.

********************************** All the Best**********************************