

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII EXAMINATION – SUMMER 2025****Subject Code:3171618****Date:23-05-2025****Subject Name: Blockchain****Time:02:30 PM TO 05:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		<b>MARKS</b>
<b>Q.1</b>	(a) List the key features of blockchain?	<b>03</b>
	(b) Blockchain is a distributed database. How does it differ from traditional databases?	<b>04</b>
	(c) Explain the Components of the blockchain.	<b>07</b>
<b>Q.2</b>	(a) Define What is Blockchain? Why Blockchain is important?	<b>03</b>
	(b) Write Application of Blockchain. Also, list the name of some popular platforms for developing blockchain applications.	<b>04</b>
	(c) Demonstrate How does Blockchain works?	<b>07</b>
<b>OR</b>		
	(c) How do different cryptocurrency wallets differ? Explain.	<b>07</b>
<b>Q.3</b>	(a) Explain in detail the types of cryptocurrency.	<b>03</b>
	(b) What is a ledger? Is Blockchain an incorruptible ledger?	<b>04</b>
	(c) Explain in detail the types of Blockchain.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) Explain What is encryption? What is its role in Blockchain?	<b>03</b>
	(b) What are the Merkle trees? What is its importance in blockchain?	<b>04</b>
	(c) Difference between the Bitcoin blockchain and the Ethereum Blockchain?	<b>07</b>
<b>Q.4</b>	(a) Blockchain-as-a-Service(BaaS) is a concept similar to Software-as-a-Service (SaaS). Justify.	<b>03</b>
	(b) Differentiate Proof-of-work v/s Proof-of-stake protocol.	<b>04</b>
	(c) Justify Answer Is block chain good for E-commerce website, which type of permissions are to be given by e-commerce website for the private blockchain?	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) Discuss the concept of double spending.	<b>03</b>
	(b) What is hash in blockchain? What are the key characteristics of Hash?	<b>04</b>
	(c) Explain and differentiate between SHA and MD5.	<b>07</b>
<b>Q.5</b>	(a) Differentiate between Permission less Blockchain and Permissioned Blockchain.	<b>03</b>
	(b) Explain state machine with three states. Explain with diagram.	<b>04</b>
	(c) Describe the proof of work consensus algorithm and discuss the disadvantages of the proof of work consensus mechanism.	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	(a) Briefly discuss the advantage of Cryptocurrency.	<b>03</b>
	(b) Explain What is Metamask? How it is useful in Blockchain.	<b>04</b>
	(c) Discuss in detail Smart Contract in Ethereum with Example.	<b>07</b>

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