

GYANMANJARI INNOVATIVE UNIVERSITY
GYANMANJARI INSTITUTE OF TECHNOLOGY
M.Tech.- End Semester Examination (ESE)-Summer-2026

Enrollment No.: _____

Subject Code: METAI12516

Date: 23/05/2026

Subject Name: Blockchain Technology

Semester: 02

Time: 10:30 AM TO 01:30PM

Total Marks: 100

Instructions:

1. Question No. 1 is compulsory.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

	Marks
Q.1 (a) Explain the growth of Blockchain technology and its evolution.	10
(b) Define decentralization and explain its methods.	10
Q.2 (a) Explain Ethereum design philosophy.	10
OR	
(a) Explain smart contract execution and function calls.	10
(b) Discuss RLP Encoding and Ethereum transaction structure.	10
OR	
(b) Compare public vs private Blockchain in application deployment.	10
Q.3 (a) Compare public vs private Blockchain with suitable examples.	10
(b) Explain smart contracts and decentralized organizations (DAO).	10
OR	
Q.3 (a) Explain requirements and lifecycle of smart contract development.	10
(b) Explain Gas mechanism and transaction cost in Ethereum.	10
Q.4 (a) Describe the history of Blockchain and Bitcoin, highlighting key milestones.	10
(b) Explain Bitcoin wallets and payment mechanisms.	10
OR	
Q.4 (a) Explain web3 integration and connection with Ethereum network.	10
(b) Analyze role of servers in decentralized applications.	10
Q.5 (a) Design and explain deployment of smart contract using Geth network.	10
(b) Explain decentralized application (DApp) architecture.	10

- Q.5** **OR**
- (a) Explain the generic components of Blockchain with diagram. 10
- (b) Explain routes to decentralization in Blockchain ecosystems. 10