R22 Regulation *Subject code:4P7FD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VII Semester Regular/Supplementary Examinations, October 2026

BLOCKCHAIN TECHNOLOGY

(IT)

Maximum Marks: 60 Date:30.10.2026 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X1M=10 Marks)		Marks	CO	BTL
1.a)	Define blockchain and state one of its fundamental features.	1M	1	1
b)	What is meant by decentralization in a blockchain network?	1M	1	1
c)	Differentiate between Bitcoin and an altcoin.	1M	2	2
d)	What is a smart contract? Give one example of its use.	1M	2	1
e)	List any two characteristics of a private blockchain.	1M	3	1
f)	What is Byzantine Fault Tolerance (BFT)?	1M	3	2
g)	State any two security aspects of Bitcoin.	1M	4	1
h)	What is a Decentralized Application (DApp)?	1M	4	2
i)	Write about use of python online editor.	1M	5	1
j)	What is Hyperledger Fabric?	1M	5	1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
2	a) Explain the origin of blockchain and the role of decentralization and distribution. b) Discuss different types of blockchain and consensus mechanisms.	5M 5M	1	2
	OR			
3	a) Explain the major consensus protocols used in Blockchain networks. b) Discuss how consensus mechanisms help maintain trust and agreement among distributed nodes.	5M 5M	1	3
4	a) Explain the concept of oracles in blockchain. b) Compare public blockchain characteristics with Ethereum.	5M 5M	2	2
	OR			
5	a) Explain the major features of Ethereum blockchain. b) Discuss the types of smart contracts and their applications in industry.	5M 5M	2	3
6	Discuss various Private Blockchain examples and open-source platforms.	10M	3	3
	OR			

7	Explain different algorithms used in Permissioned Blockchain systems. Discuss their importance in achieving consensus.	10M	3	4
8	Explain the major security aspects of Bitcoin. Discuss the security mechanisms used to protect Bitcoin transactions and assets.	10M	4	3
	OR			
9	Explain Blockchain-as-a-Service (BaaS). Discuss its features, benefits, and applications in enterprise environments.	10M	4	4
10	Explain Blockchain applications in Banking and Financial Services with suitable case studies.	10M	5	3
11	a) Compare Blockchain development using Python and Hyperledger Fabric. b) Discuss the commonly used Python packages for developing Blockchain applications.	5M 5M	5	3