



R22 Regulation

Subject code: 4P7FD

# TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

## B. Tech VII Semester Regular Examinations, November 2025

### BLOCKCHAIN TECHNOLOGY

(IT)

Maximum Marks: 60

Date: 28.11.2025

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	BloomTx
1.a)	List any two components of a blockchain system.	1M	1	4
b)	Define cryptocurrency and mention one example.	1M	1	1
c)	Define a public blockchain.	1M	2	2
d)	List any two characteristics of a smart contract.	1M	2	1
e)	Define private blockchain and mention one key characteristic.	1M	3	2
f)	Describe the concept of Byzantine Fault	1M	3	2
g)	Explain the concept of identity management in blockchain.	1M	4	2
h)	Mention one limitation of blockchain technology.	1M	4	3
i)	Mention one successful blockchain application in the energy sector	1M	5	3
j)	List any two python packages used in blockchain	1M	5	4

#### Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BloomTx
2	a) Discuss the origin and evolution of blockchain technology.	5M	1	2
	b) Analyze the structure of a block in a blockchain and explain its components	5M	1	4
OR				
3	a) Compare various types of blockchain consensus mechanisms.	5M	1	4
	b) Evaluate the role of cryptocurrency in blockchain ecosystems.	5M	1	5
4	Discuss how smart contracts can automate real-world business processes.	10M	2	3
OR				
5	Evaluate the security challenges associated with public blockchains.	10M	2	5
6	a) Compare private, consortium, and public blockchains.	5M	3	2
	b) Discuss how ICOs influenced blockchain-based fundraising.	5M	3	2
OR				

7	Explain how Hyperledger Fabric supports consortium blockchain applications.	10M	3	2
8	a) Discuss how regulatory compliance is maintained in blockchain systems. b) Discuss performance and scalability challenges in blockchain.	5M 5M	4 4	4 4
	OR			
9	Demonstrate how blockchain can be used to streamline property transactions in the real estate sector.	10M	4	2
10	Discuss blockchain usage in maintain inventory and customer data in the retail sector. Provide a relevant example.	10M	5	2
	OR			
11	a) Explain about Hyper ledger Fabric Network. b) Illustrate how a Python can be used in blockchain transactions and smart contracts.	5M 5M	5 5	2 3