

# PYQ Analysis of UNIT-1 (Blockchain Technology)

I analyzed both uploaded RGPV Blockchain Technology papers (May 2023 & June 2025) and extracted all questions related to **UNIT-1**.

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## **UNIT-1 SYLLABUS MATCHING**

### **UNIT-1 Topics**

- ✓ Introduction to Blockchain
  - ✓ Public Ledger
  - ✓ Bitcoin
  - ✓ Smart Contracts
  - ✓ Block Structure
  - ✓ Transactions
  - ✓ Distributed Consensus
  - ✓ Public vs Private Blockchain
  - ✓ Cryptocurrency Basics
  - ✓ Permissioned Blockchain
  - ✓ Security Aspects
  - ✓ Hash Function
  - ✓ Merkle Tree
  - ✓ Digital Signature
  - ✓ Public Key Cryptography
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## **QUESTIONS ASKED FROM UNIT-1**

# MAY 2023 PAPER ANALYSIS

## **1** Differentiate between public and private blockchain.


### **Topic**

✓ Public vs Private Blockchain

### **Frequency**

★ Repeated Important Question

### **Chances in Exam**

 Very High Probability

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## **2** What is Cryptographic Hash Function? Write properties of hash function.

### **Topic**


✓ Hash Function

✓ Properties of Hash Function

### **Frequency**

★ Very Frequently Asked

### **Chances**

 Very High Probability

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## **3** What is Merkle Tree? Explain the usage of Merkle Tree.

## Topic

✓ Merkle Tree

## Frequency

★ Very Important

## Chances

🔥 Very High Probability

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# 4 What is Bitcoin P2P Network and how transactions are processed?

## Topic

- ✓ Bitcoin
- ✓ Transactions
- ✓ Distributed Network

## Frequency

★ Very Important

## Chances

🔥 Very High Probability

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# 5 What is double spending problem and how is it prevented in blockchain?

## Topic

- ✓ Blockchain Security
- ✓ Consensus
- ✓ Bitcoin Security

## Frequency

★ Important Conceptual Question

## Chances

🔥 High Probability

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## 6 What is Permissioned Blockchain? Explain design issues.

### Topic

- ✓ Permissioned Blockchain

### Frequency

★ Medium Important

### Chances

🔥 Medium Probability

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## 7 Define Consensus. Explain distributed consensus in closed environment.

### Topic

- ✓ Distributed Consensus

### Frequency

★ Repeated Topic

## Chances

🔥 Very High Probability

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## 8 Write short note on:

- Public Key Cryptography

## Topic

✓ Public Key Cryptography

## Frequency

★ Important Short Note

## Chances

🔥 High Probability

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# 📖 JUNE 2025 PAPER ANALYSIS

## 1 Explain why Merkle Trees are important for blockchain.

## Topic

✓ Merkle Tree

## Frequency

★ Repeated Again

## Chances

 Extremely Important

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## **2** Develop the steps which make essential characteristics of smart contract.


### **Topic**

✓ Smart Contracts

### **Frequency**

★ Important

### **Chances**

 Very High Probability

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## **3** Differentiate Public Blockchain and Private Blockchain with example.

### **Topic**

✓ Public vs Private Blockchain

### **Frequency**

★ Repeated Again

### **Chances**

 Extremely Important

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## **4** Draw and explain structure of block.

## Topic

- ✓ Block Structure
- ✓ Block in Blockchain

## Frequency

- ★ Important Diagram-Based Question

## Chances

- 🔥 Very High Probability
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## 5 Explain proof of Elapsed Time consensus algorithm.

## Topic

- ✓ Consensus Algorithm

## Frequency

- ★ Important

## Chances

- 🔥 High Probability
- 

## 6 Explain Bitcoin Script, the smart contract language of Bitcoin.

## Topic

- ✓ Bitcoin
- ✓ Smart Contracts

## Frequency

★ Medium Important

## Chances

🔥 Medium Probability

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## 7 Describe working with Consensus in Bitcoin in detail.

### Topic

- ✓ Bitcoin Consensus
- ✓ Distributed Consensus

## Frequency

★ Repeated Concept

## Chances

🔥 Extremely Important

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## 8 Explain Block Mining including different types of mining.

### Topic

- ✓ Bitcoin
- ✓ Mining
- ✓ Consensus

## Frequency

★ High Important










## Chances

 High Probability

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## MOST REPEATED UNIT-1 QUESTIONS

Question	Frequency	Probability
Public vs Private Blockchain	Asked Multiple Times	
Merkle Tree	Asked Multiple Times	
Consensus Mechanism	Asked Multiple Times	
Hash Function	Repeated	
Bitcoin Working	Repeated	
Smart Contracts	Repeated	
Permissioned Blockchain	Asked	
Public Key Cryptography	Asked	
Block Structure	Asked	

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## MOST EXPECTED QUESTIONS FOR

## NEXT EXAM



## VERY HIGH PROBABILITY

- 1. Explain Blockchain features and architecture.**
- 2. Differentiate Public and Private Blockchain.**
- 3. Explain Merkle Tree with diagram.**

- 4. Explain Cryptographic Hash Function and its properties.**
  - 5. Explain Bitcoin working and transaction processing.**
  - 6. Explain Distributed Consensus in Blockchain.**
  - 7. Draw and explain structure of block in blockchain.**
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## **HIGH PROBABILITY**

- 8. Explain Smart Contracts with applications.**
  - 9. Explain Block Mining and types of mining.**
  - 10. Explain Public Key Cryptography.**
  - 11. Explain Double Spending problem.**
  - 12. Explain Security aspects of Blockchain.**
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## **MEDIUM PROBABILITY**

- 13. Explain Permissioned Blockchain.**
  - 14. Explain Bitcoin Script.**
  - 15. Explain Proof of Elapsed Time Consensus Algorithm.**
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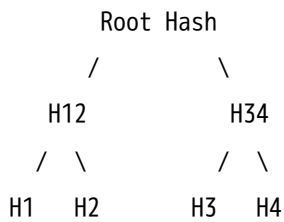
# IMPORTANT DIAGRAMS TO PRACTICE

## 1 Blockchain Structure

Block 1 → Block 2 → Block 3

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## 2 Merkle Tree



## 3 Bitcoin Transaction Flow

User → Transaction → Verification → Block → Blockchain

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## 4 Public Key Cryptography

Public Key → Encryption

Private Key → Decryption

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## **5** Digital Signature

Private Key → Sign

Public Key → Verify

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# ONE-NIGHT UNIT-1 REVISION

## STRATEGY

### Study First (MOST IMPORTANT)

- Public vs Private Blockchain
  - Merkle Tree
  - Hash Function
  - Bitcoin Working
  - Consensus
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### Then Study

- Smart Contracts
  - Block Structure
  - Mining
  - Public Key Cryptography
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## Last Revision

- ✓ Definitions
  - ✓ Diagrams
  - ✓ Advantages
  - ✓ Keywords
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## GOLDEN EXAM TRICK

Whenever writing blockchain answers:

Definition

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Diagram

↓

Working Steps

↓

Advantages

↓

Applications

↓

Conclusion

This structure helps score maximum marks in RGPV exams.