



RAN - 2111040102040003

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MCA (Sem. - II) Examination April - 2025

Blockchain Technology (Paper : 204)

Time: 3 Hours]

[Total Marks: 70

સૂચના : / Instructions

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નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the details of signs on your answer book

Name of the Examination:

MCA (Sem. - II)

Name of the Subject :

Blockchain Technology (Paper : 204)

Subject Code No.: **2111040102040003**

Seat No.:

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Student's Signature

Q.1 Answer the following (Any Two) 14

1. Explain why Merkle tree are essential for light nodes?
2. List and explain types of Blockchain
3. How is the data stored in IPFS?

Q.2 Answer the following (Any Two) 14

1. What are the properties of cryptographic hash function? Elaborate.
2. Explain the structure of a Block in a POW Blockchain.
3. Discuss Byzantine fault tolerance in detail.

Q.3 Answer the following (Any Two) 14

1. What are the types of forks? Explain.
2. List and explain with advantages the different storage areas in Solidity.
3. List and explain different visibility modes of functions in Solidity smart contracts.

- Q.4** **Answer the following:** **14**
1. What are mapping in Solidity? How can it be used in Solidity programs?
 2. Explain Blockchain use case in Health sector.

- Q.5** **Answer the following:** **14**
1. Explain how DHT is used in IPFS.
 2. Explain Hyper ledger fabric workflow.

OR

Explain with an example the use of function modifiers in Solidity.
