



RAN - 2311000702010002

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M. Sc. (ICT) (Sem. - II) Examination April - 2025

Blockchain Computing

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:

M. Sc. (ICT) (Sem. - II)

Name of the Subject :

Blockchain Computing

Subject Code No.: **2311000702010002**

Seat No.:

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Student's Signature

- (2) All the questions carry equal marks
(3) Support your answer by suitable diagram.

Q.1 Attempt all:

14

1. Write solidity smart contract for counter to increment and decrement a counter.
2. What is a nonce in mining?
3. What do validators do in Proof of Stake (PoS)?
4. What are gas fees in Ethereum?
5. What is the difference between NFTs and cryptocurrencies?
6. What is a transaction pool in blockchain?
7. How does blockchain help in healthcare?

Q.2 Answer the following: (Any Two)

14

1. What is Ethereum? Explain its Architecture in detail.
2. Justify why consensus is required in blockchain.
3. Explain Merkle Tree in detail.

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- Q.3 Answer the following: (Any Two) 14**
1. Explain blockchain wallets and types in detail.
 2. Explain hyperledger in detail.
 3. What is Blockchain? Differentiate Web 2.0 and Web 3.0.

- Q.4 Answer the following (Any Two) 14**
1. Justify the importance of blockchain in supply chain management.
 2. Explain permissioned blockchain with an example.
 3. Explain blockchain transaction lifecycle.

- Q.5 Answer the following: 14**
1. Explain Proof of Work (PoW) consensus. 5
 2. Write solidity contract for basic voting facility where votes for two candidates are counted. 5

OR

Write solidity smart contract which stores and retrieves student information like roll number, name, and grade.

3. Explain byzantine fault. 4