



RAN-2411000804010001

M.Sc. (AI-ML) (Sem.-IV) Examination April - 2026

401 - Blockchain Technology

Time: 3 Hours]

[Total Marks: 70

સૂચના : / Instructions (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fill up strictly the above details on your answer book	Seat No.: <table border="1"> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table> Student's Signature						

- Q.1. Answer the following questions. 14**
- A. What is a Genesis block? How blockchain achieves decentralization? 05
- OR**
- State the different types of blockchain. Explain Consortium Blockchain. 05
- B. 'Blockchain is decentralized'. Justify the statement. 04
- C. Write a note on History of Blockchain. 05
- Q.2. Answer the following questions. 14**
- A. What is the role of consensus mechanisms in maintaining the integrity of a blockchain network? 06
- B. Write a note on a Merkle Tree. 06
- C. Explain hash function briefly. 02
- Q.3. Answer the following questions. (Any Two) 14**
- A. List and explain various forks in Blockchain.
- B. How many types of blockchain are there? Explain private blockchain in detail.
- C. Explain how blockchain works?
- Q.4. Answer the following questions. (Any Two) 14**
- A. Explain how blockchain can be used to build trust in identity management like "Aadhar".
- B. What is smart contract? Explain POS in detail.
- C. Write a note on various use cases of Blockchain.
- Q.5. Answer the following questions. (Any Two) 14**
- A. Write a note on Web 3.0. Also state how is it different from Web 2.0?
- B. Explain the usefulness of Light nodes.
- C. What is Hyperledger Fabric? Explain it in detail.