

**National Institute of Technology, Silchar**  
**(UG) Mid Semester Examination, March 2022**

Subject Code: CS-382

Semester: 6<sup>th</sup>

Duration: 1 hour 15 minutes

Subject: Introduction to Blockchain

Department: Computer Science and Engineering

Total Marks: 30

**Answer ALL questions.**

Q No.	Question	Marks	CO	BL	PO
1 a)	Define Blocks and related data structures in Blockchain.	4	CO-1	BL-1	PO1
b)	What are the classification of Blockchain? Briefly explain with suitable examples.	6	CO-1	BL-1	PO1
2 a)	“It is computationally difficult to find x and y such that $H(x) == H(y)$ ”. Explain it with respect to CRYPTOGRAPHIC HASH FUNCTIONS.	5	CO-2	BL-2	PO2
b)	Illustrate Merkle Tree in a Blockchain.	5	CO-1	BL-2	PO4
3 a)	Draw a structure of SMART Contract and explain briefly for “Date of Birth Certificate Record Management” in your district.	5	CO-2	BL-3	PO2
b)	“World Economic Forum anticipates that 10% of the global GDP will be stored on Blockchain by 2025”. Explain and justify it in your own words.	5	CO-2	BL-3	PO1

Where: CO – Course Outcomes; BL – Bloom’s Taxonomy Levels (1- Remembering, 2- Understanding, 3 – Applying, 4 – Analyzing, 5 – Evaluating, 6 - Creating); PO- Program Outcomes

**Course Outcomes (CO):**

After completion of this course, the students are expected to

1. An basic idea about Blockchain technology
2. Applications and implementation strategies of Blockchain
3. Understandings of current trends of Blockchain, and ability to imagine its use cases, open research challenges and future directions.

