School: .....Campus: .....

Academic Year: ..... Subject Name: ..... Subject Code: .....

Semester: ..... Program: ..... Branch: ..... Specialization: .....

Date: .....

Applied and Action Learning

(Learning by Doing and Discovery)

Name of the Experiment: Build a Use Case – Tokenized Supply Chain Prototype

*Coding Phase: Pseudo Code / Flow Chart / Algorithm

1. Participant Identification:

The supply chain network is formed by key entities such as the manufacturer, supplier, transporter, distributor, retailer, and customer. Each acts as a verified blockchain participant.

2. Digital Token Generation:

Products or batches are digitized into blockchain tokens that hold essential information — product ID, source, quantity, and estimated value.

3. Smart Contract Deployment:

Automated contracts are programmed to handle ownership transfers, validate product authenticity, and trigger payments once conditions are met.

4. Product Onboarding:

The manufacturer initiates the process by registering goods on the blockchain and linking them with corresponding tokens.

5. Tokenized Transfer Flow:

As items progress through the supply chain, the tokens are sequentially passed along — ensuring transparent tracking from origin to end user.

6. Blockchain Verification:

Every token transfer undergoes network validation to confirm legitimacy and prevent duplication or data alteration.

7. Automated Settlement:

Upon successful delivery to the customer, smart contracts automatically release payments to the appropriate parties.

8. Permanent Record Keeping:

Each transaction is permanently stored on the blockchain, maintaining an immutable and auditable record of the entire supply chain journey.

**** As applicable according to the experiment.***

Two sheets per experiment (10-20) to be used.

* Software used:

- Vs code
- Ms word
- Microsoft edge web browser(for research)

* Implementation Phase: Final Output (no error)

1. All participants — manufacturer, supplier, transporter, distributor, retailer, and customer — are registered on the blockchain network.
2. The manufacturer creates digital tokens that represent the products being shipped.
3. Once the supplier confirms delivery of materials, the tokens are transferred to them.
4. As the goods move through the supply chain, token ownership is passed step by step — from supplier to transporter, distributor, and then retailer.
5. Each transfer is securely recorded and verified on the blockchain ledger.
6. Smart contracts automatically release payments when delivery conditions are fulfilled.
7. The customer receives both the physical product and its digital ownership record (token).
8. The blockchain maintains a permanent, transparent record of all transactions across the supply chain.

* Observation:

Tokenization makes tracking assets easier and keeps products authentic.

Smart contracts cut down manual work and build automatic trust between parties.

Real-time data sharing increases transparency and accountability.

Digital ownership tokens stop duplication and fake products.

Automated payments speed up settlements and improve efficiency.

Shows how blockchain turns traditional supply chains into trusted digital systems.

ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10		
Planning and Execution/Practical Simulation/ Programming	10		
Result and Interpretation	10		
Record of Applied and Action Learning	10		
Viva	10		
Total	**50**		

Signature of the Student :

Name :

Regn. No. :

Signature of the Faculty :