Centurion University

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 Experiement : ERC-20 Basics – Tokenization Concepts

* Coding Phase: Pseudo Code / Flow Chart / Algorithm

- **Start** the process and set up your development environment.
- **Open Remix IDE** and create a new Solidity file.
- **Import ERC-20 template** from OpenZeppelin.
- **Customize token parameters** — name, symbol, supply, and decimals.
- **Compile** the smart contract using the Solidity 0.8.x compiler.
- **Connect MetaMask** to Sepolia Testnet (or any other desired testnet).
- **Deploy** the contract through Remix using Injected Web3.
- **Confirm** the deployment transaction in MetaMask.
- **Copy** the deployed contract address from Remix.
- **Import the token** in MetaMask using the contract address.
- **Open** a testnet DEX (e.g., Uniswap).
- **Connect wallet** and select ETH to Token/DAI swap.
- **Enter swap amount** and initiate the swap transaction.
- **Confirm** the swap in MetaMask and wait for transaction completion.
- **Check updated balance** in MetaMask (manually import token if not visible).
- **Stop** the process.

Software used

1. MetaMask Wallet
2. Remix IDE.
3. MS Word.
4. Brave for researching.

*As applicable according to the experiment.
Two sheets per experiment (10-20) to be used.

* Implementation Phase: Final Output (no error)

- Launch **Remix IDE** and choose the Solidity environment.
- Create a new Solidity file and paste the **ERC-20 token code** from OpenZeppelin.
- Modify token details like **name, symbol, and supply**.
- Compile the smart contract without errors.
- Open **MetaMask** and ensure it is connected to the **Sepolia Testnet**.
- Deploy the contract using **Injected Web3** in Remix.
- Approve the deployment request in MetaMask.
- Copy the **contract address** from Remix's deployment logs.
- In MetaMask, go to **Import Tokens** and paste the contract address.
- Visit **Uniswap (testnet)** and connect your MetaMask wallet.
- Choose the swap pair **(ETH → Deployed Token or DAI)**.
- Enter the desired amount to swap and confirm.
- Wait for the transaction confirmation (~12 seconds).
- Check the token balance in MetaMask; if not visible, import the token again.

* Observations:

The ERC-20 token was successfully deployed on Sepolia Testnet, imported into MetaMask, and swapped via Uniswap testnet. Token balance updated after transaction confirmation, with gas fees paid in testnet ETH.

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:

**As applicable according to the experiment. Two sheets per experiment (10-20) to be used.*