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 : Stake Your Claim – Proof of Stake Simulation

Objective/Aim:

To understand how validators are selected in the Proof of Stake (PoS) consensus mechanism and how staking influences block creation.

Apparatus/Software Used:

- Laptop
- Remix IDE
- MetaMask
- Vs code

Theory/Concept:

1. What Is PoS ?

It stands for Process of stakes.

It is a consensus mechanism — a method for a blockchain network to agree on which transactions are valid and which block should be added next.

PoS uses economic commitment validators lock up (or "stake") their coins as collateral to earn the right to validate transactions.

2. Choosing of validators

In PoS, validators replace miners.

- Each validator must stake a certain minimum number of tokens .

• The network then randomly selects one validator or a group of them.

• The chance of being selected is proportional to the size of your stake.

Example: If you hold 1% of all staked coins, your vote has 1% influence in selecting the next block validator.
More coins staked = more influence = higher chance to be chosen.

Procedure:

1.Hold the Cryptocurrency:
Own the PoS-based cryptocurrency (e.g., Ethereum, Cardano, Solana).
2.Choose a Validator:
Select a trusted validator from the network — validators are the nodes responsible for verifying and adding new blocks.
3.Delegate Your Stake:
You "delegate" your coins to the validator.
You don't transfer ownership — you just give them the **right to use your stake** to help secure the network.
4.Validator Creates/Validates Blocks:
The validator is randomly chosen (weighted by stake amount) to create or validate new blocks.
5.Earn Rewards:
When the validator successfully adds a block, both **you and the validator** earn rewards.
The validator keeps a small commission.
The rest goes to the delegators (you).
6.Unstake (Optional): You can later **unstake or withdraw** your coins after a fixed "unbonding period."

Observation Table:

Validator	Stake (Tokens)	Selection Probability	Block Reward	Updated Balance
A	10	10%	0.2	10.2
B	30	30%	0.6	30.6
C	60	60%	1.2	61.2

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: