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Coimbatore- 49

DEPARTMENT OF COMMERCE WITH INFORMATION TECHNOLOGY

21UCI505 – BLOCKCHAIN AND DISTRIBUTIVE LEDGER

Unit-5: Comparison Between Ether and Gas

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Comparison Between Ether and Gas

Ethereum uses two important concepts for its operations: **Ether (ETH)** and **Gas**. While both are related to transactions and smart contract execution, they serve different purposes in the network.

1. Ether (ETH):

Ether (ETH) is the **native cryptocurrency of the Ethereum network**. It acts as the main digital currency used within the ecosystem.

Functions of Ether:

1. Used for **sending and receiving digital payments** on the Ethereum blockchain.
2. Used to **pay transaction fees** required to execute operations.
3. Used for **staking** in the network's consensus mechanism.
4. Serves as a **store of value and tradable cryptocurrency** in crypto markets.

Comparison Between Ether and Gas

Example:
If a user transfers **₹2,000 worth of ETH** to another user, the transfer is recorded on the Ethereum blockchain.

2. Gas:

Gas is the **unit that measures the computational effort required** to perform operations on the

Ethereum network.

Functions of Gas:

Determines the **cost of executing transactions and smart contracts**.

Prevents misuse of the network by limiting excessive computation.

Compensates validators who process and verify transactions.

Comparison Between Ether and Gas

Aspect	Ether (ETH)	Gas
Definition	Native cryptocurrency of Ethereum	Unit measuring computational cost
Purpose	Used for payments and staking	Used to calculate transaction fees
Nature	Digital currency	Measurement unit for network operations
Usage	Can be traded, stored, or transferred	Used only during transaction execution
Payment	Users hold ETH in wallets	Gas fees are paid using ETH

Relationship Between Ether and Gas

Gas is not a separate currency. Instead, **gas fees are paid using Ether**.

The total transaction fee depends on:

- **Gas Limit** – Maximum computational work allowed
- **Gas Price** – Amount of Ether paid per unit of gas

Transaction Fee = Gas Used × Gas Price

Conclusion

In the Ethereum network, **Ether (ETH)** acts as the main cryptocurrency used for payments and staking, while **Gas** measures the computational resources required to process transactions and execute **Smart Contracts**. Together, they ensure that the Ethereum system operates efficiently and securely.

THANK YOU