

# **INDUCTION MOTOR-I (ASYNCHRONOUS MOTOR)**

## **UNIT-III**

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# PRINCIPLE OF OPERATION & PHASOR DIAGRAM

## ➤ Torque producing mechanism

- When a 3 phase stator winding is connected to a 3 phase voltage supply, 3 phase current will flow in the windings, hence the stator is energized.
- A rotating flux  $\Phi$  is produced in the air gap. The flux  $\Phi$  induces a voltage  $E_a$  in the rotor winding (like a transformer).
- The induced voltage produces rotor current, if rotor circuit is closed.
- The rotor current interacts with the flux  $\Phi$ , producing torque. The rotor rotates in the direction of the rotating flux.

# DIRECTION OF ROTOR ROTATES

- **Question:** How to change the direction of rotation?
- **Answer:** Change the phase sequence of the power supply.

