

Electrical Machines (2131005)

Assignment 1

- 1. Explain the working principle of the 1-phase transformer.**
- 2. Advantage and application of auto-transformer.**
- 3. Derive EMF equation of transformer.**
- 4. How 3-phase to 2-phase transformation of transformer is obtained?**
- 5. Explain the condition of parallel operation of transformer.**

Assignment 2

1. Explain losses in DC machine.
2. Explain factors affecting the cost of generation.
3. Differentiate between self excited and separately excited DC machine.
4. Explain armature reaction in DC machine.
5. Derive the expression for the torque developed in the DC motor.

Assignment 3

- 1. With neat Block-diagram explain working of thermal power plant.**
- 2. With neat Block-diagram explain working of hydro power plant.**
- 3. What is Ferranti effect? Explain with phasor diagram.**

Assignment 4

- 1. Why 1 phase induction machine is not self starting?**
- 2. Explain how the torque is developed in a 3 phase induction machine.**
- 3. What is slip of 3 phase induction machine? Discuss its slip-torque characteristic.**
- 4. Write different starters used for induction machines.**
- 5. Explain double revolving field theory for 1 phase induction machine.**
- 6. Explain rotating magnetic field theory.**

Assignment 5

- 1. Define (1) pitch factor (2) distribution factor for an alternator.**
- 2. Define voltage regulation of an alternator.**
- 3. What is synchronizing of an alternator? Explain one method for synchronizing.**
- 4. Explain zero power factor method in synchronous machine.**
- 5. Which condition must be satisfied for synchronization of 3 phase alternators**