RO 8402 Electrical Machines and Power System

Important 13mark questions

Unit I

1. Derive an E.M.F equation for both LAP and WAVE wound of a D.C Generator.
2. With relevant sketches explain briefly the characteristics of D.C Series and Shunt motors.

Unit II

1. Explain the step by step procedure to obtain the equivalent circuit of a transformer using open circuit and short circuit tests from laboratory setups.
2. Derive the EMF equation of a transformer.

Unit III

1. Describe the construction, working principle operation of a 3φ induction motor.
2. Explain the methods which makes single phase induction motor self-starting. Draw the schematic diagram of the arrangements, vector diagram and slip-torque characteristics and also its applications.

Unit IV

1. Derive the E.M.F equation of three phase alternator.
2. Explain the principle of operation of Reluctance motor with relevant sketches. Also list out its applications.

Unit V

1. With the relevant diagram explain the structure of electrical power systems.
2. Compare the HVAC and HVDC transmission systems in terms of power generated per conductor, economy, fault level reliability and controllability.