

ELECTRICAL TECHNOLOGY

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 70

PART – A

(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- What is the meaning of phase sequence in a 3 – phase voltage source?
 - Define reactive power.
 - Define commutation.
 - Why DC series motor is not started under no – load condition?
 - Why the rating of a transformer is in KVA?
 - Define transformation ratio.
 - Why DOL starting current is high in induction motor?
 - What is induction generator?
 - Describe magnetic locking.
 - Draw the phasor diagram indicating the synchronous machine in generating mode.

PART – B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

- 2 (a) A three-phase power system with a line voltage of 400 V is supplying a delta-connected load of 1500 W at 0.8 pf lagging. Determine the phase and line currents.
- (b) A three phase system supplies 1200 W to a star-connected load at 0.8pf lagging. Determine the amplitude of line and phase current.

OR

- 3 Explain about two wattmeter method for measuring three phase power.

UNIT – II

- 4 Derive an EMF equation of a DC generator.

OR

- 5 Explain how the speed of a DC shunt motor is controlled through flux and armature control method.

UNIT – III

- 6 Describe the construction details of a transformer.

OR

- 7 A 50 kVA, 2200 / 220V transformer when tested, given the following results:
 OC test, measurements on LV side: 405 W, 5 A, 220 V
 SC test, measurements on HV side: 805 W, 20.2 A, 95 V
 Draw the circuit model of the transformer referred to the HV and LV sides. Label all the parameters.

UNIT – IV

- 8 Elaborate the construction details of 3 phase induction motor.

OR

- 9 Discuss about the torque slip characteristics of 3 phase induction motor.

UNIT – V

- 10 With neat diagram, explain the construction feature of 4 – poles synchronous machine.

OR

- 11 Write short notes on following:

- Pitch factor.
- Distribution Factor. www.ManaResults.co.in
- Winding factor.
