

(DEC 225)

B.Tech. DEGREE EXAMINATION, MAY - 2015

(Examination at the end of Second Year)

ELECTRONICS & COMMUNICATIONS

Paper - V : Electrical Technology

Time : 3 Hours

Maximum Marks : 75

Answer question No.1 compulsory

(15)

Answer ONE question from each unit

(4 × 15 = 60)

- I)**
- a) Write the main parts in 1- ϕ Transformer
 - b) What is the principle of operation of 1- ϕ Transformer.
 - c) What are the constructional details of DC Generator.
 - d) Explain about Armature reaction in DC Generator.
 - e) Draw the characteristics of DC Shunt Generator.
 - f) What is the purpose of starter.
 - g) Write the applications of DC series motor.
 - h) Draw the Torque-slip characteristics of Induction motor.
 - i) Which type of slots are used in Induction motor.
 - j) Which type of materials are used for Commutator Brushes?
 - k) Write any one difference between Induction motor and 1- ϕ Transformer.
 - l) What is the purpose of Damper winding.
 - m) Write the applications of stepper motors.
 - n) Draw the circuit diagram of Auto Transformer.
 - o) What are the losses are presented in Induction motor.

UNIT – I

- 2) a) How emf is generated in DC Generators. Derive emf equation in a DC Generator.
b) Explain Load characteristics of DC series Generator.

OR

- 3) a) Derive Torque equation in DC motor.
b) Explain 3-point starter with neat sketch.

UNIT - II

- 4) a) Explain 1- ϕ Transformer operation with no-load.
b) Explain about 3- ϕ Transformers.

OR

- 5) a) Explain OC and SC Test in a 1- ϕ Transformer.
b) 1- ϕ Two winding transformer operated with 20KVA and 2000/200V. If the two winding transformer is converted into Auto transformer. What is the capacity of Auto transformer?

UNIT - III

- 6) a) Explain concept of rotating magnetic field in Induction motors.
b) A 3- ϕ , 50Hz Induction motor has a full load speed of 1440 rpm. For this speed calculate the following (Rated speed is 1500 rpm)
(i) No. of poles (ii) Full load slip (iii) Rotor frequency.

OR

- 7) a) Derive the condition for maximum torque in Induction motors.
b) Explain about stepper motors.

UNIT - IV

- 8) a) Explain principle of operation of synchronous machine.
b) Derive EMF equation in synchronous machines.

OR

- 9) a) Explain about synchronous Impedance method.
b) Write the applications of synchronous machines.

