

TED (10)-3038

(REVISION—2010)

Reg. No.

Signature

THIRD SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/
TECHNOLOGY—OCTOBER, 2011

ELECTRICAL AND ELECTRONICS ENGINEERING

(Common for ME, AU, T & D)

[Time : 3 hours

(Maximum marks : 100)

PART—A

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. List the applications of series motor.
2. Name the functions of brush in the DC generator.
3. Define the transformation ratio.
4. Enumerate the functions of choke in fluorescent lamp.
5. Develop the truth table and logic symbol of the gate NOR.

(5x2=10)

PART—B

II Answer any *five* questions. Each question carries 6 marks.

1. Describe the maintenance procedure of lead-acid cell.
2. A coil of resistance 10Ω and an inductance of 100 mH connected in series with a capacitor of a capacitance $150 \mu F$ across a 200 V supply. Determine the following : (i) Impedance (ii) Current (iii) Power factor and (iv) Voltage across capacitor.
3. Compute the line values and phase values of current and voltage in a 3Φ star and delta connection.
4. Explain the constructional details of an alternator.
5. Draw and explain the working principle of permanent magnet moving coil instrument.
6. Explain the working of RC coupled amplifier.
7. Draw and explain the working of full wave rectifier.

(5x6=30)

PART—C

(Answer *one* full question from each unit. Each question carries 15 marks)

UNIT - I

- III (a) Explain the constructional details of Lead-acid cell. 7
(b) Draw the 3 point starter connected to a DC shunt motor. 8

OR

[P.T.O.]

- IV (a) Classify the DC generators according to the field excitation.
(b) Compare the working principles of DC motor and DC generators.

UNIT - II

- V (a) Explain the working principle of single phase transformer with the help of necessary figures.
(b) State and explain the expression for power in 3Φ circuit.

OR

- VI (a) Describe how the three phase is generated.
(b) Derive the emf equation of a transformer.

UNIT - III

- VII (a) Explain the constructional details of a three phase induction motor.
(b) Explain the working principle of Dynamo meter type watt meter with a neat diagram.

OR

- VIII (a) Draw the star delta starter used for induction motor.
(b) Sketch the constructional details of moving iron instrument and its working.

UNIT - IV

- IX (a) Explain the common base configuration of a transistor with diagram.
(b) Enumerate the advantages of universal gates and give their symbols.

OR

- X (a) Draw and explain the working principle of half wave rectifier.
(b) Explain the working of SCR with necessary figures.
-