

THIRD SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/ TECHNOLOGY
March 2013

ELECTRICAL AND ELECTRONICS ENGINEERING
(Common for ME,AU & TD)

Maximum Marks : 100

Time : 3 Hrs

PART- A

(Maximum marks: 10)

- I. Answer the following questions in one or two sentences. Each question carries two marks Marks
- 1 Define commutator
 - 2 What is meant by secondary cell?
 - 3 Define damping
 - 4 What is transformation ratio
 - 5 Draw the logic symbol of NOT gate [5x2 =10]

PART - B

(maximum marks : 30)

- II Answer any five of the following questions. Each question carries 6 marks
- 1 Classify DC motors based on field connection
 - 2 What is meant by impedance triangle
 - 3 Explain the working of single phase induction motor
 - 4 A 4 pole 3-phase induction motor operates from a supply frequency of 50Hz calculate speed of Rotor when the slip is 0.04
 - 5 Explain the working of a single phase transformer
 - 6 With neat diagram explain the working of a half wave rectifier.
 - 7 Explain the principle of oscillation [5x6=30]

PART - C

(maximum marks : 60)

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

UNIT I

- III a List the various types of DC generator with connection diagram [8]
b Explain the methods of charging of lead acid cell [7]

OR

- IV a Draw a 3 point starter and mark its parts. [10]
b State the efficiency of a lead acid cell [5]

UNIT II

- V a Derive the e.m.f equation of a transformer [7]
b Establish the relation between phase voltage and line voltage in a star connected system [8]

OR

- VI a Explain the working of an Auto transformer [7]
b A single phase transformer has 400 primary and 1000 secondary turns. Cross sectional area of the core is 60cm². If the primary is connected to 520v, 50Hz calculate (1) peak value of flux density of the core (2) the voltage induced in the secondary. [8]

UNIT III

- VII a Draw the circuit diagram of star-delta starter [8]
b Explain the construction of moving iron attraction type instrument [7]

OR

- VIII a Explain the working of a fluorescent lamp [8]
b Explain the construction of 3 ϕ squirrel cage induction motor [7]

UNIT IV

- IX a Explain the action of transistor as an amplifier [8]
b How N-type material is formed [7]

OR

- X a Explain biasing with base resistor [8]
b Write the working of SCR [7]