

THIRD SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/
TECHNOLOGY—OCTOBER, 2013

ELECTRICAL AND ELECTRONICS ENGINEERING

(Common for ME, AU & TD)

[Time : 3 hours

(Maximum marks : 100)

Marks

PART—A

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

1. What is meant by transformation ratio ?
2. Define phase sequence in a 3 ϕ system.
3. What is % slip ?
4. Define power factor.
5. What is peak value ?

(5 \times 2=10)

PART—B

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

1. Derive the emf equation of a DC generator.
2. Draw the vector diagram of current and voltage of a pure inductor and capacitor.
3. A 3-phase, 4-pole Induction motor operates from a 50 Hz, 3 ϕ supply. Calculate the motor speed at slip 0.03.
4. Describe the working of a full-wave bridge rectifier.
5. Explain the principle of oscillation.
6. Distinguish between core type and shell type transformer.
7. Describe the working of moving coil permanent magnet instrument.

(5 \times 6=30)

PART—C

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

UNIT – I

- | | | |
|---------|---|---|
| III (a) | Explain the parts of a lead acid battery. | 7 |
| (b) | Explain the constructional details of DC generator. | 8 |

OR

- | | | |
|--------|---|----|
| IV (a) | List the applications of lead acid batteries. | 5 |
| (b) | Draw a 3-point DC motor starter and explain. | 10 |