

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE – APRIL -2020.

ELECTRICAL AND ELECTRONICS ENGINEERING

(Maximum Marks :75)

[Time : 2.15 hours]

PART-A

Marks

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

1. Define form factor.
2. Write any two applications of dc series motor.
3. Define the term transformer ratio.
4. Name any two dynamometer type instruments.
5. Draw the symbol of AND gate and develop its truth table. (3x2=6)

PART - B

II Answer **any four** of the following questions . Each question carries 6 marks.

1. Find the effective resistance when three resistors are connected in
(i) series (ii) parallel
2. Derive the relations between phase Voltage and line Voltage in star connected system.
3. Explain the classification of single phase induction motor.
4. Draw a neat sketch of 3 point starter and mark its parts.
5. Explain the principle of dielectric heating and write any two applications.
6. Explain the working of PN junction diode.
7. Summarize the need of automation. [4x6 =24]

PART - C

(Answer **any of the three units** from the following. Each full question carries 15 marks)

UNIT I

- III** (a) Explain and derive power developed in a pure inductor ac circuit. (7)
- (b) Explain generation of power in the three phase system. (8)

OR

- IV** (a) Explain the classification of dc generators based on field connection. (8)
(b) Explain the method of charging of lead acid cell. (7)

UNIT- II

- V** (a) Explain the construction details of three phase induction motor. (9)
(b) Derive the e.m.f equation of a transformer. (6)

OR

- VI** (a) Explain the working principle of dc motor and list the applications of dc motors. (7)
(b) Differentiate welding transformer and power transformer. (8)

UNIT- III

- VII** (a) Explain the construction details of Moving Coil instruments. (9)
(b) Explain the principle of heat production from electric power. (6)

OR

- VIII** (a) Explain measurement of three phase power using two wattmeter method. (8)
(b) Explain induction heating. (7)

UNIT – IV

- IX** (a) With a neat figure explain working principle of SCR. (9)
(b) What are the advantages of universal gates? (6)

OR

- X** (a) Explain the working of bridge rectifier with a neat figure. (7)
(b) Draw and explain the basic block diagram of a controlled system. (8)
