

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

ELECTRICAL TECHNOLOGY

(Maximum Marks : 100)

[Time : 3 hours]

PART-A
(Maximum marks: 10)

Marks

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

1. Define transformation ratio of transformer.
2. Write the function of commutator in DC generator.
3. Write the working principle of alternator.
4. Name the types of stepper motors.
5. List any two applications of single phase Induction Motor. (5x2=10)

PART - B
(Maximum Marks : 30)

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

1. Explain Superposition theorem.
2. Explain different losses in a transformer.
3. Derive the EMF equation of DC generator.
4. With sketches, explain the working principle of DC motor.
5. Derive the relation between synchronous speed and frequency of Synchronous machine.
6. Draw star delta starter.
7. Compare star connected and delta connected 3 phase Induction Motor. [5x6 =30]

PART - C
(Maximum marks : 60)

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

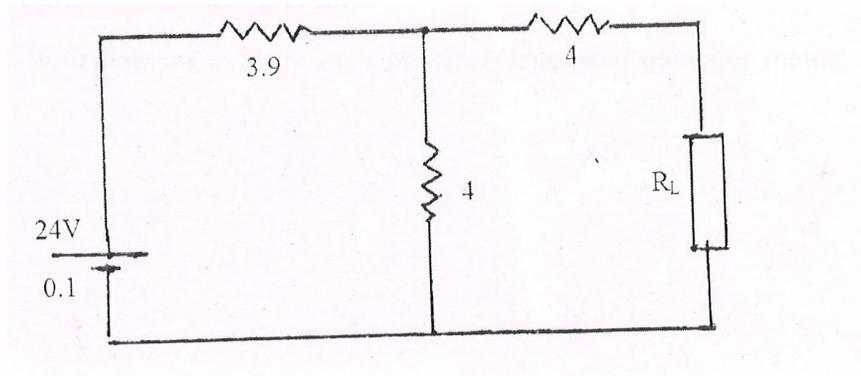
UNIT I

- III** (a) With diagram, explain OC test on transformer. (8)
- (b) State and explain Kirchoff's laws. (7)

OR

- IV** (a) Derive the emf equation of transformer. (8)

- (b) Find the value of load resistance R_L to extract maximum power from the network shown below. (7)



UNIT- II

- V (a) Draw and explain different types of self excited DC generators. (8)
(b) What is the necessity of starter for starting of a DC motor. (7)

OR

- VI (a) Compare the characteristics of DC motors. (8)
(b) Write about armature reaction and its effect. (7)

UNIT- III

- VII (a) Derive the emf equation of alternator. (8)
(b) Explain the working of servo motors. (7)

OR

- VIII (a) Draw and explain the working of Universal motor. (8)
(b) With sketches, describe the constructional details of Salient pole alternator. (7)

UNIT – IV

- IX (a) With neat sketch, explain the working of megger. (8)
(b) Explain the working principle of 3 phase Induction motor. (7)

OR

- X (a) Draw and explain the procedure of measuring the insulation resistance of complete installation to earth. (8)
(b) With diagram, explain single phase capacitor start Induction motor. (7)