

TED (15/19) -3021  
(Revision- 2015/19)

**N21-07976**

Reg.No.....  
Signature. ....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE –NOVEMBER -2021.

**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 time period of an alternating quantity.
2. List two methods of charging a lead cell.
3. Write any two advantages of auto transformer.
4. Mention the classifications of electrical measuring instruments.
5. List any two types of resistors.

(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  
(a)Series (b)Parallel
2. State and explain Faraday's law of electromagnetic induction.
3. Explain necessity of a starter in dc motor.
4. Write any four comparisons between distribution transformer and power transformer.
5. List four advantages of moving iron instruments.
6. With the help of diagram explain the working of NPN transistor.
7. List four advantages 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 the generation of three phase emf with the help of phasor diagram. (8)  
(b) Explain the working principle of lead acid cell. (7)

**OR**

- IV** (a) Explain the classification of DC generator based on the field connections with figure. (8)  
(b) With the help of phasor diagram derive the relation between phase and line voltage in star connected system. (7)

**UNIT- II**

- V** (a) Explain the working of a dc motor with neat sketch. (8)  
(b) Draw and explain DOL starter. (7)

**OR**

- VI** (a) Explain the working principle of single phase capacitor start induction run motor. (8)  
(b) Derive the emf equation of transformer. (7)

**UNIT- III**

- VII** (a) Explain the working of attraction type MI instruments with figure. (8)  
(b) Explain the working of electric arc furnace with neat sketch. (7)

**OR**

- VIII** (a) Describe the construction and working of permanent magnet moving coil instrument with figure. (8)  
(b) Explain two wattmeter method of power measurement in three phase system. (7)

**UNIT – IV**

- IX** (a) Explain the working of Bridge rectifier with necessary waveforms. (8)  
(b) With the help of diagram explain the working of SCR. (7)

**OR**

- X** (a) Describe the working of PN junction diode with figure. (8)  
(b) Draw the basic block diagram of closed loop control system and list any four applications (7)

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