



N19-00472

TED (15) – 3043

Reg. No. ....

(REVISION — 2015)

Signature .....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019

ELECTRICAL TECHNOLOGY

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

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

1. Define impedance.
2. Write the e m f equation of a DC generator.
3. Write the different classifications of D C generator.
4. What are the different types of stepper motor.
5. State superposition Theorem.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Define the terms Cycle, Time period, Frequency, Amplitude.
2. Describe effect of AC through a RL circuit.
3. State and explain in Kirchhoff's Law.
4. Explain the working of a transformer on no load.
5. Explain the necessity of a starter in a DC motor.
6. Derive the emf equation of an alternator.
7. Draw and explain the DC servo motor.

(5×6 = 30)

PART — C

(Maximum marks : 60)

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

UNIT — I

- III (a) Explain the method of Plate earthing with a neat sketch. 8
- (b) An inductor coil of 2 m H having a resistance of  $2\Omega$ , a resistor of  $10\Omega$  and a capacitance of  $47\mu\text{F}$  are connected in series and fed by a 200 V, 50Hz supply. Find Impedance, pf, active power and reactive power. 7

OR



- |    |  | Marks |
|----|--|-------|
| IV | (a) Derive the equation for alternating voltage and current. | 7     |
|    | (b) Explain the working of Megger with neat sketch.          | 8     |

UNIT — II

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|---|--|---|
| V | (a) State and prove Thevenin's Theorem.  | 7 |
|   | (b) Derive the e m f equation of a transformer and state the voltage transformation ratio. | 8 |

OR

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|----|---|---|
| VI | (a) Illustrate the working theory of a transformer. | 7 |
|    | (b) State and prove maximum power transfer theorem. | 8 |

UNIT — III

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|-----|--|---|
| VII | (a) Explain the working principle of DC motor.                     | 8 |
|     | (b) Explain the working of a 3 point starter with relevant sketch. | 7 |

OR

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|------|---|---|
| VIII | (a) Derive e m f equation of a DC generator.                | 7 |
|      | (b) Draw and explain the armature reaction and its effects. | 8 |

UNIT — IV

- |    |  |   |
|----|--|---|
| IX | (a) What is the relation between the speed and frequency of an alternator.                       | 7 |
|    | (b) With the help of relevant figures explain the open circuit characteristics of an alternator. | 8 |

OR

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|---|---|---|
| X | (a) What is the principle of operation of a universal motor ?         | 7 |
|   | (b) Explain how the rotating field is produced in an induction motor. | 8 |
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