

TED (15) – 4052
(REVISION — 2015)

Reg. No.
Signature

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

AUTOMOBILE ELECTRICAL AND ELECTRONIC SYSTEMS

[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 Battery efficiency.
2. State “Motor Locked Torque” of Automobile Starter motor.
3. List two types of ignition coils in automobile ignition system.
4. Define headlight dazzle.
5. Name two magneto ignition systems used in automobiles.

(5 × 2 = 10)

PART — B

(Maximum marks : 30)

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

1. Explain any three types of battery ratings.
2. State the importance of a solenoid switch in starting system.
3. Label the parts in a Distributor used in ignition system.
4. Write short note on “Autronic eye” in lighting system with a diagram.
5. Suggest any 6 points on care and maintenance of battery.
6. Describe the working of cut out relay in charging system with a sketch.
7. List and explain any two “In-Car infotainment” systems.

(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) Describe the effect of temperature on voltage and capacity of battery. 7
 (b) Formulate the equation for charging and discharging of a Lead acid cell and describe each process. 8

OR

- IV (a) Explain the method of Constant Current charging of battery with a diagram. 7
 (b) Write short note on Maintenance free battery and Tubular battery. 8

UNIT — II

- V (a) Explain the constructional details of Automobile DC Generator. 7
 (b) Describe the constructional details of Standard Bendix drive mechanism in starter motor, with a sketch. 8

OR

- VI (a) Explain the constructional details of Automobile Alternator. 7
 (b) Describe the constructional details of Pre-engaged type drive mechanism in starter motor, with a sketch. 8

UNIT — III

- VII (a) Illustrate the working of Vacuum advance mechanism and its components. 7
 (b) Explain the working of Breaker less Ignition system with a diagram. 8

OR

- VIII (a) Explain the working of Battery coil ignition system with a diagram. 7
 (b) Illustrate the working of Polar Inductance Magneto system with a sketch. 8

UNIT — IV

- IX (a) Explain the principle of operation of balancing coil type water temperature gauge. 7
 (b) Illustrate the arrangements to be made for a manual car head light alignment. 8

OR

- X (a) Explain the operation of rack and pinion type wind screen wiper mechanism with a sketch. 7
 (b) Describe the principle of operation of electric horn with a sketch. 8