

TED (15) – 4052

(REVISION – 2015)

Reg. No.

Signature

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2018**

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. Name the materials used as positive and negative plates in a lead acid cell.
2. List 3 important parts of a 3 stage regulator using in an automobile.
3. Identify the ignition coil types by its construction.
4. Define heat range of a spark plug.
5. Recognize two objectives of the lighting system.

(5 × 2 = 10)

PART — B

(Maximum marks : 30)

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

1. Summarize the constructional details of a Nickel Iron battery.
2. Specify 4 types of ratings of battery.
3. Explain the necessity of motor drive mechanisms.
4. Conclude armature reaction and list 2 Generator output control methods.
5. Justify the need of spark advance & retard mechanisms.
6. Interpret dazzle and its avoidance.
7. Describe the operation of rack type wiper mechanism.

(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 construction and working of a lead acid battery with a sketch. 7
 (b) Identify 4 battery defects and their remedies. 8

OR

- IV (a) Demonstrate battery charging methods with connection diagrams. 7
 (b) Represent 4 battery tests with appropriate sketches. 8

UNIT — II

- V (a) Describe the working of a 3 stage regulator used in charging system. 7
 (b) Illustrate the working of starter solenoid switch with relay. 8

OR

- VI (a) Differentiate between alternator and dc generator, using in automobiles. 8
 (b) Explain the constructional details of Pe engaged type drive mechanism in starter motor with sketch. 7

UNIT — III

- VII (a) Explain the working of Battery coil ignition system and its components. 8
 (b) Label Distributor less Electronic Ignition system and conclude its working. 7

OR

- VIII (a) Summarize the working of distributor in an ignition system with a neat diagram. 7
 (b) Explain the working of Polar Inductance Magneto system and its components. 8

UNIT — IV

- IX (a) Explain the principle of operation of electric horn and label its parts. 8
 (b) Illustrate the principle of operation of water temperature Gauge. 7

OR

- X (a) Recognise the constructional details of sealed beam head light with sketch. 8
 (b) Describe the principle of operation of A.C. Electric balancing coil type fuel gauge. 7