

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2020**

AUTOMOBILE ELECTRICAL AND ELECTRONIC SYSTEMS

[Maximum Marks: 75]

[Time: 2.15 Hours]

PART-A

(Answer *any three* questions in one or two sentences. Each question carries 2 marks)

- I. 1. List any two functions of automotive battery.
2. State the reason for using cutout relay on dynamo.
3. Write down the range of capacity of condenser in ignition system.
4. Define the term 'cold plug'.
5. Define the term dazzle. (3 x 2 = 6)

PART-B

(Answer any *four* of the following questions. Each question carries 6 marks)

- II 1. Write the cell reaction for a lead acid battery and explain it.
2. State any three advantages of alkaline battery over lead acid battery.
3. Write a short note about the construction of alternator rotor.
4. Outline the constructional features of an automotive dynamo.
5. List any four requirements of a spark plug.
6. Discuss about the working of automatic headlights.
7. With a circuit diagram, explain the working of a balancing coil type fuel gauge. (4 x 6 = 24)

PART-C

(Answer *any of the three units* from the following. Each full question carries 15 marks)

UNIT – I

- III (a) Explain about the constructional features of lead acid battery plates. (8)
(b) Outline the methods by which battery charging can be done. (7)

OR

- IV (a) Discuss about the various types of automotive battery ratings. (8)
(b) Write a short note about the method by which cadmium test is conducted. (7)

UNIT – II

- V (a) Explain the working of solenoid switch used in starter motors. (8)
(b) Explain the external output control method of regulation of a dynamo. (7)

OR

- VI (a) Point out any four advantage of alternator over dynamo. (8)
(b) Outline the constructional difference between two pole and four pole starter motors with suitable sketches. (7)

UNIT- III

- VII (a) Explain about the two ignition advance methods used in automotive ignition system. (8)
(b) Outline the working of capacitor discharged ignition system with a circuit diagram. (7)

OR

- VIII (a) With the help of a labelled diagram, explain battery coil ignition system. (8)
(b) Write a short note about the construction of CB points in ignition system. (7)

UNIT - IV

- IX (a) List the three methods for aiming of headlamps. Point out the steps in any one type. (8)
(b) Outline the working of rack type wiper mechanism. (7)

OR

- X (a) Discuss about the sealed beam type headlight construction. (8)
(b) Explain the working of thermal flasher type directional signal circuit with diagram. (7)
