

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 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. List the electrode materials of a Nickel Cadmium battery.
2. Identify the reason for using series motor in starting system.
3. Write the two functions of condenser in ignition system.
4. State the normal CB point range.
5. Define the function of a head lamp.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Explain the procedure of quick rate charging.
2. Summarize open volt test done on automotive batteries.
3. Outline the function of current regulator and voltage regulator of a dynamo.
4. Point out the factors affecting the selection of starter motor.
5. Write a short note on ignition advance.
6. Indicate the methods for aiming of head lights.
7. Identify the application of relay in horn circuit.

(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 of lead acid battery.                       | 8 |
|     | (b) Point out the advantages of alkaline battery over lead acid battery. | 7 |

OR

- |    |  |   |
|----|--|---|
| IV | (a) Outline the four battery rating methods.       | 8 |
|    | (b) Write a short note on efficiency of a battery. | 7 |

UNIT — II

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|---|---|---|
| V | (a) Illustrate the working of automotive alternator with a circuit diagram. | 8 |
|   | (b) Differentiate between alternator and generator.                         | 7 |

OR

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|----|--|---|
| VI | (a) Summarize the construction of an automotive starter motor. | 8 |
|    | (b) Identify the role of solenoid switch in a starting system. | 7 |

UNIT — III

- |     |   |   |
|-----|---|---|
| VII | (a) Write down the working of electronic ignition system with a labelled diagram. | 8 |
|     | (b) Conclude the features of CB point in battery ignition system.                 | 7 |

OR

- |      |   |   |
|------|---|---|
| VIII | (a) Explain the working capacitor discharged ignition system with a labelled diagram. | 8 |
|      | (b) Summarize the requirements of a good spark plug.                                  | 7 |

UNIT — IV

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|----|---|---|
| IX | (a) Indicate the features of four types of headlight bulbs according to the construction. | 8 |
|    | (b) Discuss the principle of operation of thermostatic type water temperature gauge.      | 7 |

OR

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|---|--|---|
| X | (a) Explain the principle of operation of an electrical speedometer. | 8 |
|   | (b) Outline the working of balancing coil type oil pressure gauge.   | 7 |

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