



12252

21314

3 Hours/100 Marks

Seat No.

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- Instructions :** (1) **All** questions are **compulsory**.
(2) Answer **each** next main question on a **new** page.
(3) Illustrate your answers with **neat** sketches **wherever** necessary.
(4) Figures to the **right** indicate **full** marks.
(5) Assume suitable data, **if** necessary.
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MARKS

1. a) Attempt **any three** of the following : **(12)**
- a) How does an electrical fuse work ? **4**
 - b) What happens in a lead acid cell during discharging ? **4**
 - c) What is the principle of operation of a startor motor ? **4**
 - d) Define the following terms related with an alternator :
 - i) Initial Excitation
 - ii) Self Excitation. **4**
- b) Attempt **any one** of the following : **(6)**
- a) How does a power door lock system operates ? **6**
 - b) Explain the construction and working of Hydrometer. **6**

P.T.O.

**MARKS**

2. Attempt **any four** of the following : **(16)**
- a) Explain the operation of a thermal circuit breaker. **4**
 - b) How do maintenance free batteries differ from conventional lead acid battery ? **4**
 - c) What are the types of starter drive system used in a vehicle ? Describe working of one type. **4**
 - d) Describe working of Electronic voltage regulator. **4**
 - e) Why is Electronic Ignition preferred to conventional ignition system ? **4**
 - f) How can fiber optic materials be useful in Advanced lighting system ? **4**
3. Attempt **any four** of the following : **(16)**
- a) What is the difference between solenoid and relay as applied to automobile practice ? **4**
 - b) Describe “Trickle charging” procedure. When trickle charging is done ? **4**
 - c) How does an “Over running clutch” work ? **4**
 - d) Describe the construction of an alternator. **4**
 - e) State three merits and one demerit of CDI system. **4**



MARKS

4. a) Attempt **any three** of the following : **(12)**
- a) List four salient features of scan tester. **4**
 - b) Describe battery load test procedure. **4**
 - c) Draw a labelled diagram of automotive starting circuit. **4**
 - d) Describe the purpose of the alternator stator and rotor. **4**
- b) Attempt **any one** of the following : **(6)**
- a) i) Enlist the various types of speedometers.
 - ii) Explain with sketch, working of one speedometer type. **6**
- b) How are the following defects caused in lead acid batteries :
- i) Sulphation
 - ii) Self discharge
 - iii) Internal short circuit. **6**
5. Attempt **any four** of the following : **(16)**
- a) Describe the operation of charge indicator light circuit. **4**
 - b) How is Hall effect used in Triggering Electronic Ignition system ? **4**
 - c) Describe distributorless ignition system working with a schematic diagram. **4**
 - d) Describe a typical keyless entry system. **4**
 - e) Explain the operation of Automatic ON/OFF headlight with time delay. **4**
 - f) State the purpose of OBD-II. Define the terms Drive cycle and trip. **4**

**MARKS**

6. Attempt **any four** of the following : **(16)**
- a) Differentiate between battery and magneto ignition system. **4**
 - b) Draw a labelled diagram of computer controlled coil Ignition system. **4**
 - c) Enlist the common anti theft system used in modern automobiles. Explain any one in brief. **4**
 - d) Give the probable causes and remedies for the following troubles : **4**
 - i) Gauge reads low constantly
 - ii) In accurate Gauge reading.
 - e) How Ohmmeter test of an Electronic fuel injector is done ? **4**
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