

12252

11122

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.

Marks

1. a) Attempt any **THREE** of the following: **12**
- (i) Explain the basic purpose of a Relay. Draw conventional representation of it.
- (ii) How do you complete a battery load test?
- (iii) How does an autolamp system work? Explain with neat sketch.
- (iv) Enlist and explain the major parts of a power door lock system.
- b) Attempt any **ONE** of the following: **6**
- (i) Explain with sketch, wind shield wiper mechanism.
- (ii) Classify the basic alternator tests and explain any one of them.

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- 2. Attempt any FOUR of the following:** **16**
- a) How the function of buzzer is differ from relay? Explain with sketch.
 - b) Explain the concept of Jump starting car with sketch.
 - c) Explain the reverse capacity rating of a battery.
 - d) Describe the trickle charging procedure with sketch.
 - e) How do you complete the voltage drop test for starting system?
 - f) Compare OBD I and OBD II system capabilities.
- 3. Attempt any FOUR of the following:** **16**
- a) State the function and classify charge indicators mounted on dashboard panel.
 - b) How does an alternator produce full wave rectification? Explain with circuit diagram.
 - c) Enlist the advantages of Programmed Ignition system.
 - d) Explain the various sensors that can affect the ignition system.
 - e) State the salient features of keyless entry system.
- 4. a) Attempt any THREE of the following:** **12**
- (i) Enlist various types of testing circuit defects. Explain short circuit with simple sketch.
 - (ii) Explain with sketch, Ballasted Ignition Coil used in contact breaker ignition system.
 - (iii) State the necessity of Electronic Ignition.
 - (iv) Explain the requirements to illuminate the MIL in an OBD-II.

b) Attempt any ONE of the following:**6**

- (i) Give the probable causes and remedial action for following symptoms observed in starting system :-
- (1) Low cranking speed
 - (2) Starter does not operate
 - (3) Starter runs but pinion does not engage
- (ii) Explain the service procedure for O₂ sensor.

5. Attempt any FOUR of the following:**16**

- a) Draw a schematic arrangement of Bendix drive.
- b) Enlist various factors while considering design requirements of ignition system.
- c) Explain the working of Detonation sensor with sketch.
- d) State the function of fiber optics in automotive electronics.
- e) Describe the concept of headlight aiming.
- f) State the importance of DTC in OBD-II

6. Attempt any FOUR of the following:**16**

- a) Enlist the various factors affecting the battery life.
 - b) Explain the phenomenon of 'Self excitation'.
 - c) Differentiate between Battery and Magneto Ignition systems.
 - d) Give the probable causes and remedial action for inaccurate gauge reading in electronic gauges.
 - e) Define the following terms :
 - (i) Drive Cycle
 - (ii) Warm up Cycle
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