

17617

15162

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.

Marks

1. (A) Attempt any **THREE** of the following :

12

- (a) Enlist any two purpose of the following :
- (i) Relay
 - (ii) Fuse
 - (iii) Solenoid
 - (iv) Ganged switch
- (b) Enlist any four safety precautions in battery maintenance.
- (c) State the need of starter motor drive and list any two types of starter motor drive.
- (d) State the functions of any two sensors used in Ignition system.

(B) Attempt any **ONE** of the following :

6

- (a) Describe with neat sketch working of engine oil pressure gauge.
- (b) State any three reasons of battery failures.

2. Attempt any **FOUR** of the following :

16

- (a) Enlist any four types of automotive switches and describe SPDT switch with neat sketch.
- (b) State the test procedure of “short to ground” circuit defect.
- (c) List any four components of starting system and state their functions.
- (d) Describe working of power window with simple circuit diagram.
- (e) Explain automatic resetting type circuit breaker.
- (f) State the test procedure of alternator stator and rotor.

P.T.O.

- 3. Attempt any FOUR of the following : 16**
- (a) Describe operation of Keyless entry system.
 - (b) Enlist any four purposes of OBD-II.
 - (c) Explain operation of normally open type relay with neat sketch.
 - (d) Describe operation of computer controlled ignition system.
 - (e) Explain how primary circuit is triggered in electronic ignition system.
- 4. (A) Attempt any THREE of the following : 12**
- (a) Describe operation of automatic headlight dimming.
 - (b) List any four purposes of antitheft systems. Enlist different types of antitheft systems.
 - (c) State the following terms related to OBD-II :
 - (i) Drive cycle
 - (ii) Trip
 - (d) Describe Ohmmeter testing of electronic fuel injector.
- (B) Attempt any ONE of the following : 6**
- (a) Enlist different components of alternator and state their functions.
 - (b) Differentiate between primary and secondary ignition circuit of ignition system.
- 5. Attempt any FOUR of the following : 16**
- (a) Enlist the uses of microprocessor in vehicle.
 - (b) Draw block diagram of GPS and describe working of GPS.
 - (c) How “State of charge of battery” test is performed with help of hydrometer ?
 - (d) Write the test procedure of manifold absolute pressure sensor.
 - (e) State the need of voltage regulator in charging system.
 - (f) Describe operation of charge indicator light circuit with simple wiring diagram.
- 6. Attempt any FOUR of the following : 16**
- (a) Explain jump starting procedure with neat block diagram.
 - (b) Write the procedure of current draw test related to starting system.
 - (c) Enlist any eight precautions to be taken during handling and charging of vehicle battery.
 - (d) Describe with neat block diagram, operation of distributorless ignition system.
 - (e) State the functional operation of Ignition coil in ignition system.
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