

17617

11718

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.
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) Attempt any THREE of the following: 12
- (i) Enlist functions of following electrical component
 - 1) Relay
 - 2) Switch
 - 3) Solenoids
 - 4) Buzzers
 - (ii) Explain concept of hybrid battery.
 - (iii) Enlist types and function of starter drive.
 - (iv) Explain need of ignition system.
- b) Attempt any ONE of the following: 6
- (i) Draw a neat labelled sketch of temperature gauge and explain its construction and working.
 - (ii) Enlist different methods of battery charging. Enlist any six precautions to be taken during charging.

P.T.O.

- 2. Attempt any FOUR of the following:** **16**
- a) Describe operation of automatic resetting type circuit breaker.
 - b) Enlist various circuit defects and explain short to ground.
 - c) Explain current output test for alternator.
 - d) Describe cartridge fuse and maxi fuse with neat sketch.
 - e) Explain construction and working of speedometer gauge.
 - f) Explain working of bendix drive.
- 3. Attempt any FOUR of the following:** **16**
- a) How can fiber optic material be useful in advance lighting system?
 - b) Describe DTC structure as detected by SAEJ 2012.
 - c) Explain basic purpose of relay. Draw neat sketch normally closed relay.
 - d) Explain computer controlled ignition system with block diagram.
 - e) List various sensors used in ignition system.
- 4. a) Attempt any THREE of the following:** **12**
- (i) Explain antitheft system used in modern automobile.
 - (ii) Explain automatic door lock system.
 - (iii) Enlist testing methods for electronic fuel injector?
Explain sound test.
 - (iv) Describe testing of oxygen sensor.
- b) Attempt any ONE of the following:** **6**
- (i) Explain construction and operation of alternator.
 - (ii) State purpose of following component used in ignition system.
 - 1) Spark plug
 - 2) Distributor
 - 3) Condenser

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

- a) Describe GPS system with neat sketch.
- b) Describe operation of automatic on/off head light with time delay.
- c) State precaution to be taken while jump starting.
- d) Explain operation of manifold absolute pressure sensor.
- e) Describe operation of charge indicator light with wiring diagram.
- f) Explain stator and rotor testing procedure.

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

- a) Define battery rating and explain any one battery rating.
 - b) Describe procedure of ground circuit test for starting system.
 - c) Explain factor affecting on battery life.
 - d) Explain construction and working of conventional battery ignition system.
 - e) Explain electronic spark timing with block diagram.
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