

22654

12425

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.

Marks

1. Attempt any FIVE of the following :

5 × 2 = 10

- (a) Convert decimal number 29 into equivalent binary number.
- (b) Differentiate between RAM and ROM. (Two points only)
- (c) State location and function of knock sensor.
- (d) State two advantages of electronic steering.
- (e) State use of scan tool in vehicle diagnosis.
- (f) State advantages and disadvantages of LED.
- (g) Draw block diagram of automotive computer.

2. Attempt any THREE of the following :

3 × 4 = 12

- (a) Describe with the help of circuit diagram use of diode as rectifier in alternator.
- (b) Describe various errors in the measurements.
- (c) Compare open loop control system and close loop control system.
- (d) Explain volatile memory and Keep Alive Memory. (KAM)



- 3. Attempt any THREE of the following :** **3 × 4 = 12**
- (a) Describe construction and working of Engine Coolant Temperature (ECT) sensor.
 - (b) Describe construction and working of electronic suspension system.
 - (c) Describe procedure to diagnose Manifold Absolute Pressure (MAP) sensor.
 - (d) Describe the working of air bag system.
- 4. Attempt any THREE of the following :** **3 × 4 = 12**
- (a) Explain CAN and LIN Bus communication protocol.
 - (b) Describe analog to digital and digital to analog signal conditioning with the help of block diagram.
 - (c) Describe construction and working of EGR valve actuators.
 - (d) Describe construction and working of Antilock Braking System (ABS).
 - (e) Explain working of collision avoidance system.
- 5. Attempt any TWO of the following :** **2 × 6 = 12**
- (a) State various parameters which displayed on dashboard using vehicle instrumentations. Explain any one type of instrumentation with help of block diagram.
 - (b) Describe six step approach of component testing.
 - (c) Describe construction and working of idle speed actuator.
- 6. Attempt any TWO of the following :** **2 × 6 = 12**
- (a) Describe with the help of sketch construction and working of Mass Air Flow (MAF) sensor.
 - (b) Explain with the help of block diagram MPFI engine electronic control system.
 - (c) Explain procedure to perform stand alone diagnostic of electronic injector.
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