

22654

23124

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.
 - (5) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following :

10

- (a) State application of power diode and photo-diode used in automotive electronics.
- (b) State four types of computer memories used in automotive applications.
- (c) Define a sensor and an actuator.
- (d) List any two vehicle motion control systems.
- (e) Give an example of particular DTC code found in vehicle diagnosis.
- (f) Draw symbols of : (i) Zener diode (ii) Photo-diode.
- (g) List the different types of signal conditioning.

2. Attempt any THREE of the following :

12

- (a) State and explain working of zener diode as voltage regulator with circuit diagram.
- (b) Compare digital and analog visual display used in automobile applications.
- (c) Differentiate between open and close loop control system.
- (d) Illustrate with neat sketch diagram signal conditioning system used in automotive sensor.



- 3. Attempt any THREE of the following : 12**
- (a) Explain with neat sketch the working of EGR valve.
 - (b) Explain working of Antilock Braking System (ABS) with neat sketch.
 - (c) State the applications of following measuring instruments :
 - (i) Oscilloscope
 - (ii) Scan tool
 - (iii) Frequency meter
 - (iv) Digital multimeter
 - (d) Draw a neat block diagram of electronic control system used in MPFI system.
- 4. Attempt any THREE of the following : 12**
- (a) Compare CAN Bus with LIN Bus automotive communication system.
 - (b) Draw the labelled block diagram of basic computer. Explain its various components.
 - (c) Explain construction and working of oxygen sensor.
 - (d) Explain the necessity of electronic suspension system with justification.
 - (e) Explain working of tyre low pressure warning system.
- 5. Attempt any TWO of the following : 12**
- (a) Classify errors in measurement. Describe each of error in brief.
 - (b) Explain six step approach of component testing with its importance.
 - (c) Describe construction and working of unit injector actuator.
- 6. Attempt any TWO of the following : 12**
- (a) Describe with help of sketch construction and working of throttle position sensor.
 - (b) Explain electronic control system used in CRDI system with block diagram.
 - (c) Explain procedure to perform stand alone diagnosis of electronic injector.
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