

22654

22232

3 Hours / 70 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. Attempt any FIVE of the following :

10

- (a) State the instruments used for measuring following parameters :
 - (i) Speed
 - (ii) Distance
- (b) State any four types of computer memory.
- (c) Define the term :
 - (i) Sensor
 - (ii) Actuator
- (d) State the need of following safety system :
 - (i) Collision avoidance
 - (ii) Park Assist
- (e) State the application of battery tester measuring instrument.
- (f) Enlist the uses of diodes in automobiles.
- (g) State the function of read only memory.



- 2. Attempt any THREE of the following :** **12**
- (a) State and explain types of errors.
 - (b) Convert the given decimal number 64 into binary number.
 - (c) Explain with justification the use of Bluetooth Technology as a communication system in automobile.
 - (d) Explain the concept of signal conditioning.
- 3. Attempt any THREE of the following :** **12**
- (a) Explain the construction and working of coolant temperature sensor.
 - (b) Draw a neat sketch of MPFI system.
 - (c) State the applications of following measuring instruments :
 - (i) Oscilloscope
 - (ii) Scan tool
 - (iii) Digital multimeter
 - (iv) Frequency meter
 - (d) Explain the working of electronic suspension system.
- 4. Attempt any THREE of the following :** **12**
- (a) Explain closed loop control system with block diagram.
 - (b) Draw the labelled block diagram of basic computer. Explain its various components.
 - (c) Explain the working of unit injector as an actuators.
 - (d) Justify the necessity of air bags in modern vehicles.
 - (e) State the need of low tyre pressure monitoring system. Explain its working.

5. Attempt any TWO of the following : 12

- (a) Distinguish between digital visual display and analog visual display.
- (b) State the purpose of OBD of MPFI system.
- (c) Explain with neat sketch the working of EGR valve.

6. Attempt any TWO of the following : 12

- (a) Explain working of crankshaft position sensor with neat sketch.
 - (b) Explain electronic control system used in CRDI with block diagram.
 - (c) Explain six step approach for component testing.
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