

22654

24225

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.

Marks

1. Attempt any FIVE of the following :

10

- (a) Enlist the types of diode and its uses in automotive electronics.
- (b) State the different types of computer memories used in automotive electronics.
- (c) Enlist any four automotive sensors and actuators.
- (d) Name the two types of computer control fuel injection used in modern vehicles.
- (e) State the applications of Frequency meter, Digital multimeter.
- (f) List and explain the limitations of Analog display.
- (g) Identify the names of communication system used for navigation purpose in modern automobiles.

2. Attempt any THREE of the following :

12

- (a) Convert $(4322)_{10}$ into equivalent binary no. and write the steps involved.
- (b) Draw the neat sketch and explain the digital visual display in vehicle instrumentation.



- (c) Describe closed loop control system with block diagram. Enlist its two applications.
- (d) State the functions of volatile memories.

3. Attempt any THREE of the following : 12

- (a) Illustrate with neat sketch the output signal waveform for crankshaft position sensor.
- (b) Describe construction and working of electronic power steering system with diagram.
- (c) Explain the procedure for stand alone diagnosis of actuator.
- (d) Explain the working of airbag with neat sketch.

4. Attempt any THREE of the following : 12

- (a) Explain the concepts of signal conditioning.
- (b) Differentiate between ROM and EPROM.
- (c) Explain with neat sketch the working of EGR valve.
- (d) Explain electronic control system used in MPFI.
- (e) Describe working of electronic suspension system. Enlist its two advantages.

5. Attempt any TWO of the following : 12

- (a) Compare digital and analog visual display system.
- (b) State the onboard diagnosis procedure for CRDI system.
- (c) Describe the working of unit injector as an actuator.

6. Attempt any TWO of the following : 12

- (a) State the procedure of testing Throttle position sensor. Also analyze the symptom if Throttle position sensor is defective.
 - (b) Explain the concept and working of Antilock braking system with neat sketch.
 - (c) Enlist and describe six steps approach for component testing.
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