

# 22586

**23124**

**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) 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) Define Automobile and state its any two examples.
  - b) Name any four warning system used in automotive.
  - c) List any four automotive actuators.
  - d) State advantages of ABS.
  - e) List four measuring instruments used while checking signals for system diagnostics.
  - f) State need of safety system in modern vehicle.
  - g) State the function of steering system.
- 2. Attempt any THREE of the following :** **12**
- a) Name any four major components of Automobile and state their function.
  - b) Explain procedure for standalone diagnosis of automotive sensor.
  - c) Explain the concept of electronic engine control system.
  - d) Explain concept and working of Antilock Braking System (ABC) with neat sketch.

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- 3. Attempt any THREE of the following :** **12**
- a) Write application of following measuring instrument :
    - i) Oscilloscope
    - ii) Digital Multimeters
  - b) Explain the working of speed warning system.
  - c) Describe working of crankshaft position sensor with neat sketch.
  - d) Describe electronic control system used in MPFI.
  - e) Describe the working of cruise control system.
- 4. Attempt any THREE of the following :** **12**
- a) State the necessity, function and location of suspension system.
  - b) Explain the concept of Electronic Diesel Control (EDC) unit.
  - c) Enlist any four diagnostics fault codes with meaning.
  - d) Explain exhaust gas recirculation actuator with neat sketch.
  - e) Explain working of oil pressure warning system.
- 5. Attempt any TWO of the following :** **12**
- a) Draw and explain the General vehicle layout block diagram.
  - b) Explain construction and working of electronic power steering with block diagram.
  - c) Sketch throttle position sensor and explain it's working.
- 6. Attempt any TWO of the following :** **12**
- a) Explain approach for components testing in detail.
  - b) Explain working of oxygen sensor temperature sensor with neat sketch.
  - c) Explain working of park assist system with block diagram.
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