

17619

**11920**

**3 Hours / 100 Marks**

Seat No.

--	--	--	--	--	--	--	--	--

- Instructions :** (1) All Questions are *compulsory*.  
(2) Illustrate your answers with neat sketches wherever necessary.

**Marks**

1. (a) Attempt any **THREE** of the following : **12**
- (i) With neat sketch describe the working of oxygen sensor.
  - (ii) Explain collision avoidance system.
  - (iii) Explain how to perform test to judge the condition of given diode using multimeter.
  - (iv) List the advantages of electronic suspension system.
- (b) Attempt any **ONE** of the following : **06**
- (i) Describe with a neat sketch use of power diodes in charging system of alternator.
  - (ii) Explain analog to digital and digital to analog signal conversion.
2. Attempt any **FOUR** of the following : **16**
- (a) Explain the working of a engine coolant temperature sensor.
  - (b) Enlist different types of communication system used in automobile. State the function of bluetooth technology.
  - (c) Differentiate between digital visual display and analog visual display.

- (d) Explain GPS navigation system used in automobiles.
- (e) Describe working of unit injector actuator.
- (f) Describe the procedure of conversion of signals from analog to digital.

**3. Attempt any FOUR of the following :**

**16**

- (a) Prove that  $561_{(10)} = 1000110001_{(2)}$  are equivalent by stepwise converting decimal to binary and binary back to decimal.
- (b) Differentiate between CAN Bus and LIN Bus communication systems.
- (c) Describe construction and working of any one type of sensor which is used to determine quantity of air entering the engine.
- (d) Explain different types of errors in the measurement.
- (e) Describe diagnosis methods for fuel injector.

**4. (a) Attempt any THREE of the following :**

**12**

- (i) Explain use of LED in automotive display.
- (ii) Draw block diagram of automotive computer. State the function of any four components.
- (iii) Describe working of purge control actuator.
- (iv) Explain Antilock Braking System. (ABS)

**(b) Attempt any ONE of the following :**

**06**

- (i) With a help of neat sketch explain electronic control system used in CRDI.
- (ii) Describe six step approach for component testing.

**5. Attempt any FOUR of the following :****16**

- (a) Explain application of diode as voltage regulator.
- (b) State different types of computer memories. Enlist the functions of read only memory.
- (c) Describe working of idle speed actuator.
- (d) Draw a neat block diagram, to indicate measurement of temperature in vehicle instrumentation.
- (e) Write diagnosis procedure for Throttle position sensor.

**6. Attempt any FOUR of the following :****16**

- (a) Describe diagnostic use of battery tester and lux meter.
  - (b) Explain working of crankshaft position sensor with a neat sketch.
  - (c) Compare open loop and close loop control system.
  - (d) Describe EGR valve actuator.
  - (e) Draw block diagram of electronic power steering system.
-

