

22440

12425

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) 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 four types of combustion chambers used in C.I. engine.
- (b) Define Pre-ignition.
- (c) State any four drawbacks of carburetted S.I. engine.
- (d) State the function & location of crank-shaft position sensor in MPFI system.
- (e) State any four properties of LPG.
- (f) List any four methods emission control in gasoline engine.
- (g) List any four Pollutants from S.I. engine.

2. Attempt any THREE of the following :

12

- (a) Describe the phenomenon detonation in S.I. engine.
- (b) Explain the methods of controlling knocking in diesel engine.
- (c) Explain Idle speed control as a output control function of ECU.
- (d) Describe the use of scan tools to diagnose the faults in C.R.D.I. system.



- 3. Attempt any THREE of the following : 12**
- (a) Explain with neat sketch the working of L.P.G. conversion kit.
 - (b) Justify C.N.G. is used as a transport fuel in Metro cities.
 - (c) Explain GDI & state its advantages.
 - (d) Explain working of evaporation emission control system.
- 4. Attempt any THREE of the following : 12**
- (a) Enlist any two actuators and their function in MPFI system.
 - (b) Explain working of series hybrid vehicles with block diagram.
 - (c) Describe the leak detection procedure in L.P.G. powered vehicle.
 - (d) Explain working of PCV with neat sketch.
 - (e) Describe exhaust gas recirculation system with the help of block diagram.
- 5. Attempt any TWO of the following : 12**
- (a) Explain the stages of combustion in S.I. engine with the help of P- θ diagram
 - (b) State and describe any three methods of fuel injection used in MPFI system.
 - (c) Explain with the help of neat sketch working of high pressure accumulator.
- 6. Attempt any TWO of the following : 12**
- (a) Compare carburettor & TBI system on the basis of following parameter :
 - (1) Fuel distribution
 - (2) Emission
 - (3) Drivability
 - (4) Power output
 - (5) Fuel consumption
 - (6) Injection pressure
 - (b) Draw and explain operation of glow plug circuit.
 - (c) State any six methods of improving fuel economy.
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