

22440

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) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (6) 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 I.C. engine and Detonation.
- (b) Write air-fuel ratio required at No load and Full load.
- (c) Write the function of sensor and actuator.
- (d) Name two inputs and outputs of ECM.
- (e) List any four alternative fuels of I.C.E.
- (f) Name two methods to control emissions.
- (g) Define Diesel Smoke.

2. Attempt any THREE of the following :

12

- (a) Describe four effects of detonation.
- (b) Compare S.I. and C.I. engines on the basis of power output/wt and operating pressure.
- (c) Describe the working of MPFI engine system.
- (d) Write the advantages of CRDI system.



- 3. Attempt any THREE of the following : 12**
- (a) Write the properties of biodiesel.
 - (b) Describe the leak detection procedure of LPG conversion kit.
 - (c) Explain the working of gasoline direct injection system.
 - (d) Describe the working of PCV system.
- 4. Attempt any THREE of the following : 12**
- (a) Describe the working of pressure regulator.
 - (b) Explain the working of series hybrid vehicles.
 - (c) Describe the working of CNG conversion kit with block diagram.
 - (d) Describe the methods to control the diesel smoke (any four).
 - (e) Explain the various methods of improving fuel economy.
- 5. Attempt any TWO of the following : 12**
- (a) Describe stages of combustion for CI engine with P-Q diagram.
 - (b) Explain the construction and working of Top feed fuel injector.
 - (c) Describe the working of glow plug circuit diagram.
- 6. Attempt any TWO of the following : 12**
- (a) Explain the working of computer controlled EGR system.
 - (b) Describe with neat figure the working of solenoid operated fuel injector.
 - (c) (i) Write the functions of fuel accumulator.
(ii) Write the advantages of VGT.
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