17523

16172

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions : (1) All Questions are *compulsory.*

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Use of Non-programmable Electronic Pocket Calculator is permissible.

(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. (A) Attempt any THREE of the following : **12**

(a) Explain the features of CRDI system.

(b) State how air-fuel ratio in diesel engine varies from No load to full load.

(c) Define Detonation and surface ignition.

(d) Write the function of actuators (four).

(B) Attempt any ONE of the following : **06**

(a) With neat labelled figure, explain the working of any two position of PCV (Positive Crankcase Ventilation) value.

(b) Explain the working of glow plug circuit diagram with figure.

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

(a) Explain the construction and working of pressure regulator.

(b) Define the following properties :

(i) Pour point

(ii) Viscosity

(iii) Ignition quality

(iv) Fire point

(c) What does VTEC stands for ? State advantages of it.

(d) Explain the pollutants from gasoline engine.

(e) Explain the working of series hybrid vehicle.

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

(a) Describe the concept of Gasoline Direct Injection (GDI).

(b) Compare throttle body injection with port fuel injection systems.

(c) Draw a labelled block diagram showing EDC unit of CRDI system.

(d) What is meant by Ignition limits ? Give the ignition limits for S.I. Engine.

(e) What is diesel smoke ? State two methods to control diesel smoke.

(f) State the effect of compression ratio and turbulence on ignition lag.

4. (A) Attempt any THREE of the following : **12**

(a) Compare S.I. and C.I. engines on the basis of performance characteristics (any four).

(b) Explain the methods of fuel injection used EFI system.

(c) Draw and write the functions of High pressure fuel pump.

(d) List the various fuels used in I.C. engines. Write the properties of Biodiesel.

(B) Attempt any ONE of the following : **06**

(a) With neat p-θ diagram, explain the S.I. engine stages of combustion.

(b) Explain the working computer controlled EGR system.

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

(a) Compare carburettor engine fuel supply system with TBI and MPFI system.

(b) Explain engine design modification parameters to control emissions.

(c) Explain working of LPG kit with labelled block diagram.

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

(a) Sketch and explain F-head combustion chamber.

(b) Draw the block diagram of electronic control system.

(c) What are the advantages of V.V.T ?

(d) Explain delay period in detail.

(e) Explain evaporative emission control system.

(f) Write function and location of four engine sensors.
