22440

21819

3 Hours / 70 Marks Seat No. | | | | | | | | |

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) Assume suitable data, if necessary.

Marks

1. Attempt any FIVE of the following : **10**

(a) List four types of direct combustion (open) chambers used in C.I. engine.

(b) Write air fuel ratio in C-I engine under idle and full load condition.

(c) State the function and location of oxygen sensor and knock sensor in multi-port fuel injection.

(d) State function of inlet metering valve in MPFI engine.

(e) Enlist four methods of improving fuel economy.

(f) State four properties of diesel.

(g) List four pollutants emitted from S.I. engine.

2. Attempt any THREE of the following : **12**

(a) Describe stages of combustion in C.I. engine with the help of pressure-crank angle diagram.

(b) Select the combustion chamber for racing car engine with justification.

(c) Explain the working of fuel pressure regulator of multi-port fuel injection engine with suitable sketch.

(d) Describe procedure to diagnose fault in a sensor of common rail direct injection engine.

3. Attempt any THREE of the following : **12**

(a) Explain with sketch the LPG fuel supply system.

(b) Select fuel for rickshaw engine to be used in metro city with justification.

(c) Enlist the features of GDI for a car engine.

(d) Describe relevant properties of four constituents in petrol engine exhaust gas.

4. Attempt any THREE of the following : **12**

(a) Explain diagnostic procedure of CRDI to diagnose multi-point fuel injection engine.

(b) Describe the procedure to locate the leakage in liquefied petroleum gas fuel supply system of car. State the relevant precautions to be taken during leakage identification.

(c) Draw a block diagram of series type Hybrid car. State two advantages of Hybrid car.

(d) Prepare a chart of Bharat Stage IV (BSIV) norms for petrol engine of car.

(e) Explain PCV system with suitable sketch.

5. Attempt any TWO of the following : **12**

(a) Compare S.I. and C.I. engine with justification for the following parameters :

(i) Compression pressure

(ii) Power to weight ratio

(iii) Distribution of fuel in the cylinder

(b) Describe canister purge as output control function of multi-point fuel injection engine with the help of sketch.

(c) Explain working of CRDI system with the help of sketch.

6. Attempt any TWO of the following : **12**

(a) Compare TBI and PFI system of fuel supply with justification for following parameters :

(i) Number of injectors and it's location

(ii) Knock

(iii) Injection pressure

(b) Describe idle speed control as an output control function of multi-port fuel injection with the help of sketch.

(c) Explain causes of S.I. engine emission and state measures to control emission.
