

Time: 3 Hours

Total Marks: 80

- N.B: (1) Question no 1 is compulsory.
(2) Attempt any **THREE** out of remaining **FIVE** questions.
(3) Figures to the right indicate full marks.
(4) Illustrate your answers with sketches wherever necessary.

- Q.1** a Write a note on Ultra-light steel auto body. 05
b Write short notes on load bearing structure. 05
c Explain master model. 05
d Draw and explain Vehicle Body Panel Terminology. 05
- Q.2** a Explain Vehicle Body Styling. Draw ten different Car body styles. 10
b Draw and Explain different types of Truck body layouts. 10
- Q.3** a Explain different types of Driver seat. Write design consideration for Driver seat. 10
b With neat sketch explain the different aerodynamic forces and moments on a vehicle. 10
- Q.4** a Explain different layouts of structure showing edge force distribution in bending and torsion. 10
b Compare using examples two vehicles of same class with reference to Overall criteria for vehicle design. 10
- Q.5** a What are the basic safety features incorporated in vehicle at design stage? Explain each of them. 10
b Explain Layout of design and Preliminary design of Passenger car. 10
- Q.6** a Explain with an example how to calculate Centre of Gravity for a passenger car. 10
b What do you mean by Load Paths? Explain Lateral, Longitudinal, Bending and Torsion loading case using concept of load paths. 10
