

# **ACBE**

## **Tutorial-1**

1. Enlist the types of chassis frame & explain it's design consideration.
2. Write short note on SSS method of vehicle structure analysis.
3. Explain car body zones & body trims.
4. Explain unibody structure design for vehicle.
5. Explain the effects of different types of forces & moments acting on vehicle body.
6. Classify & explain different types of bus bodies.
7. Explain Detail classification of vehicle body.
8. Explain types of car body with neat sketch.
9. Explain shear panel method.
10. Compare the conventional & integral type construction of bus body.

## **Tutorial-2**

1. Classify & explain types of commercial vehicle body.
2. Explain floor height & engine location for bus body.
3. Explain driver visibility & methods for improving visibility.
4. Explain driver seat design & dimension parameters.
5. Explain SLED test or AIS 016 for seats.
6. Give the comparison between toughened glass, sheet glass and laminated glass.
7. Discuss about GRP and FRP used in automobile body.
8. Which materials are used in car body construction? State their characteristics.
9. Write short note on dashboard instruments.
- 10 As your point of view which improvements will you like to make in vehicle body design.

## **Tutorial-3**

1. Explain aerodynamics forces and moments.
2. Explain symmetric vertical loads in a car.
3. Explain Back light & window Glasses and regulations for glasses.
4. Explain anti-corrosion methods.
5. Explain plastics and timber material for body construction.
6. Explain painting process for vehicle.
7. Explain Pneumatic equipment for passenger door opening & closing.
8. Explain vehicle drag. Explain vehicle body optimization techniques.
9. List out car body construction and explain typical car body construction with neat sketch.
10. Explain selection of air conditioning equipment and its mounting in vehicle.

## **Tutorial-4**

- 1 Explain briefly heating and ventilation systems of the vehicle.
- 2 Explain different aerodynamic forces and moments with their effects on the vehicle.
- 3 Describe with neat sketch Light commercial vehicle body.
- 4 Explain doors of cars in details
- 5 Write a short note on driver cabin design for bus and commercial vehicle.
- 6 What is vehicle safety? Explain requirements and provisions for vehicle safety.
- 7 Explain an importance of ergonomics in vehicle.
- 8 Explain function, construction & working of Air bag with neat sketch.
- 9 Write short note about vehicle safety.
- 10 Why crash test is required? Explain it's procedure.

## **Tutorial-5**

- 1 Explain wind tunnel testing of scale model.
- 2 Explain water leakage test.
- 3 Explain roll over test
- 4 Explain Body noise test.