

Model question paper

SIXTH SEMESTER B.TECH DEGREE EXAMINATION
(2013 Scheme)

13.606 Automotive Safety (U)

Time: 3 Hours

Max. Marks: 100

PART- A

(Answer all questions. Each question carries 2 Marks)

1. Discuss the design of vehicle body with respect to safety concern?
2. What is a crumple zone? How do crumple zones absorb energy?
3. What causes a rollover? What has been done to reduce the occurrence of rollovers?
4. What is the purpose of analyzing impact test using photographic method?
5. How do safety belts protect vehicle occupants?
6. How do airbags work? Can airbags cause injury?
7. What are the factors considered for seat design?
8. What are the uses of sensors? What are the criteria for choosing a sensor?
9. What is forward collision warning system? What types of objects can your forward collision warning system detect?
10. What is a dipped beam head light? What does it mean to dip your headlights?

(10 x 2 = 20 Marks)

PART- B

(Answer any one question from each Module. Each question carries 20 Marks)

MODULE – 1

11. Briefly explain various driver assistance systems in automobiles.
12. Explain the influence of engine location on safety with a neat sketch.

MODULE – 2

13. With a neat sketch explain the analysis and simulation of vehicle in barrier impacts.
14. What is tripped and un-tripped rollover? Explain various classification of rollover test set up with neat sketch.

MODULE – 3

15. Explain the construction and working principle of airbag with electronic activating system.
16. Explain with the help of a suitable diagram the principle and working of various types of restraints systems used in automobiles.

MODULE – 4

17. Briefly explain the construction and working principles of sensors used in modern cars.
18. With relevant sketches explain various types of lighting system present in passenger cars.

(4 x 20 = 80 Marks)