

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
M.Tech., Winter 2017 - 18 Examination

Semester: 2
Subject Code: 03206154
Subject Name: Automotive Aerodynamics & Safety

Date: 11/01/2018
Time: 02:00 pm to 04:30 pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1** A) Discuss the role of aerodynamics for automotive vehicle design. (05)
B) Differentiate the terms “Bluff body” and “Streamline body”. (05)
C) Write short on concept of vehicle safety. (05)

- Q.2 Answer the following questions.** (Attempt any three) (15)
A) Define: Square Back Drag, Notch Back Drag and Hatch Back Drag.
B) Explain the causes of rear end collision.
C) Compare active safety and passive safety.
D) Write short note on speed control devices.

- Q.3** A) Enlist various methods of car body drag reduction. Explain any one in detail. (07)
B) Explain air resistance opposing the motion of a vehicle and derive the equation of drag coefficient. (08)

OR

- B) Write short note on dust flow patterns at the rear side of the vehicle. (08)

- Q.4** A) Discuss the importance of collapsible steering column. (07)

OR

- A) How airbag is useful in interior safety of an automotive vehicle? (07)
B) Discuss anti lock braking system with neat sketch. (08)