Seat No.:	Enrolment No
-----------	--------------

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER- III • EXAMINATION - SUMMER 2015

Subject Code: 731103 Subject Name: Automotive Aerodynamics and Safety Time: 2:30 pm to 5:00 pm Date: 02/05/2015 Total Marks: 70			
Inst	2.	Attempt all questions.	
Q.1	(a) (b)	Discuss drag coefficients of (1) Hatch back Car (2) Fast back Car (3) Truck with neat sketch. Explain the concept of bluff body with neat sketch.	07 07
Q.2	(a) (b)	Enlist types of automotive drag forces and explain each with neat sketch. Describe dust flow pattern at rear of Sedan car with neat sketch. OR	07 07
	(b)	Explain Front End Modification to reduce aerodynamic drag. Explain two methods of Front End Modification with neat sketch for Truck.	07
Q.3	(a) (b)	Discuss effect of front and rear wind shield angle on Aerodynamic drag of vehicle. Describe the general range of front and rear wind shield angle for car. Explain Rear End Modification to reduce aerodynamic drag. Explain any two Rear End Modification with neat sketch for sedan car.	07 07
Q.3	(a) (b)	OR Describe concept of vehicle safety and explain need of safety for automobile. Differentiate between Active safety and Passive safety. Enlist active and passive safety feature of modern automobile.	07 07
Q.4	(a) (b)	Explain deformation behavior of vehicle body with neat sketch. Describe the terms driving safety, perceptibility safety and operating safety. OR	07 07
Q.4	(a) (b)	Explain construction and working of collapsible steering column with sketch. Enlist components of Air bag system and describe main components with neat sketch	07 07
Q.5	(a) (b)	Write a brief note on object detection system in auto vehicle. Explain working and construction of anti skid braking system OR	07 07
Q.5	(a)	Explain Bumper design for safety with neat sketch.	07

(b) Explain causes and remedies in cases of rear end collision.

07