Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY M. E. - SEMESTER – III • EXAMINATION – SUMMER • 2013

Subject code: 731103		ode: 731103 Date: 05-06-2	Date: 05-06-2014	
U		Name: Automotive Aerodynamics and Safety		
		:30 pm - 05:00 pm	: 70	
Instr				
	2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a) (b)	Explain aerodynamic considerations in vehicle body design Explain the role of aerodynamic drag in aerodynamics.	07 07	
Q.2	(a)	Explain 1. Notch back drag 2. Fast back drag 3. Hatch back drag 4. Square back drag.		
	(b)	Explain different types of resistances offered by the vehicle. OR	07	
	(b)	Explain the role of safety considerations in automobile body design.	07	
Q.3	(a)	Explain the safety techniques for passengers provided in the vehicles.	07	
	(b)	Give the comparison between active safety and passive safety. OR	07	
Q.3	(a)	Explain the effect of deformation in vehicle body.	07	
	(b)	Explain briefly speed control devices for the vehicle.	07	
Q.4	(a)	Explain design aspects for bumper in vehicle body.	07	
	(b)	Explain design aspects and importance of seat belt in a vehicle. OR	07	
Q.4	(a) (b)	Explain the advance techniques used in steering system for safety. Write a short note of anti-lock braking system.	07 07	
Q.5	(a) (b)	Explain the central door locking system in a vehicle. Explain the object detection system at the rear of vehicle.	07 07	
Q.5	(a) (b)	OR Explain the operation of air bag system provided in a vehicle. Explain briefly aerodynamic shape analysis of the vehicle.	07 07	
