

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI(NEW) EXAMINATION – WINTER 2022****Subject Code:3160211****Date:15-12-2022****Subject Name:Automobile Chassis and Body Engineering****Time:02:30 PM TO 05:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
Q.1 (a) Differentiate between chassis, frame and automobile body.	03
(b) Explain Unibody Structure design for vehicle.	04
(c) Describe various types of materials used for body construction.	07
Q.2 (a) Explain types of body styling used for vehicle.	03
(b) Explain Aerodynamic Drag and its types.	04
(c) Explain different forces and moments with their effects on the vehicle.	07
OR	
(c) Write a short note on “wind tunnel testing of a scale model”.	07
Q.3 (a) Classify types of car bodies.	03
(b) Explain the crumple zone in vehicle.	04
(c) Explain the SSS method for a Simple Van.	07
OR	
Q.3 (a) Explain Crashworthiness.	03
(b) Explain classification of bus body.	04
(c) Define Blind Spot. Describe various methods to reduce blind spot in sedan car.	07
Q.4 (a) Classify types of commercial vehicle bodies.	03
(b) Explain various vehicle body trims.	04
(c) Explain Pneumatic equipment for passenger door opening & closing.	07
OR	
Q.4 (a) Describe dashboard of vehicle in detail.	03
(b) Explain the vehicle roof and vehicle side panel assembly.	04
(c) Explain construction and working of safety belt for occupants.	07
Q.5 (a) Give the requirements of pedestrian safety.	03
(b) Describe working of Airbag system in vehicles.	04
(c) Enlist the safety aspects in vehicle body design and explain active and passive safety.	07
OR	
Q.5 (a) Explain the concept of H-point referencing.	03
(b) Explain roll over crash tests.	04
(c) Describe human ergonomics for driver’s seat design.	07
