Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI EXAMINATION – SUMMER 2025

Subject Code: 3160211 Date:26-05-2025

Subject Name: Automobile Chassis and Body Engineering

Time: 10:30 AM TO 01:00 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.**

Q.1	**(a)**	Define: Chassis, Body, and Frame.	**03**
	(b)	Classify the types of car body.	**04**
	(c)	Describe various types of materials used for body construction.	**07**
Q.2	**(a)**	Explain unibody structure design for vehicle.	**03**
	(b)	Explain dash board with figure in detail.	**04**
	(c)	Name the various components of transmission line and explain functions of each.	**07**
		OR	
	(c)	Explain driver seat design & dimension parameters.	**07**
Q.3	**(a)**	State the sources of body noise.	**03**
	(b)	Explain the Aerodynamic drag and its types.	**04**
	(c)	Explain different forces and moments with their effects on the vehicle.	**07**
		OR	
Q.3	**(a)**	Define crashworthiness of vehicle.	**03**
	(b)	Describe the use of GRP in bus body.	**04**
	(c)	Explain the simple structure surface (SSS) method.	**07**
Q.4	**(a)**	Classify types of commercial vehicle bodies.	**03**
	(b)	Explain the vehicle roof and vehicle side panel assembly.	**04**
	(c)	Explain pneumatic for passenger door opening & closing.	**07**
		OR	
Q.4	**(a)**	Explain the working of Airbags.	**03**
	(b)	Explain various vehicle body trim.	**04**
	(c)	Differentiate between passive and active safety.	**07**
Q.5	**(a)**	Give the requirements of pedestrian safety.	**03**
	(b)	Explain roll over crash test.	**04**
	(c)	Explain the chassis and body alignment test.	**07**
		OR	
Q.5	**(a)**	Explain the crumple zone in vehicle.	**03**
	(b)	Explain the concept of H-point referencing	**04**
	(c)	Explain diver visibility & method for improving it.	**07**

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Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2024

Subject Code:3160211 Date:20-05-2024

Subject Name:Automobile Chassis and Body Engineering

Time:10:30 AM TO 01:00 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 the vehicle roof and vehicle side panel assembly.	**04**
	(c)	Which materials are used in chassis and body construction?	**07**
Q.2	**(a)**	Classify types of car bodies	**03**
	(b)	Explain Aerodynamic Drag and its types.	**04**
	(c)	Explain the effects of different types of forces & moments acting on vehicle body.	**07**
		OR	
	(c)	Explain the driver cabin design for compactness design of frames for bus and commercial vehicles	**07**
Q.3	**(a)**	Classify types of commercial vehicle bodies.	**03**
	(b)	Describe the aerodynamic force and moments.	**04**
	(c)	Write a short note on “wind tunnel testing of a scale model”.	**07**
		OR	
Q.3	**(a)**	Classify types of bus bodies	**03**
	(b)	Explain the crumple zone in vehicle.	**04**
	(c)	Define Blind Spot. Describe various methods to reduce blind spot in sedan car.	**07**
Q.4	**(a)**	Describe dashboard of vehicle in detail.	**03**
	(b)	Explain the body trims.	**04**
	(c)	What is the difference between of Active safety and Passive safety?	**07**
		OR	
Q.4	**(a)**	Explain the aerodynamic resistance and articulated vehicle.	**03**
	(b)	Explain the pedal controls and electronic displays.	**04**
	(c)	Explain Pneumatic equipment for passenger door opening & closing.	**07**
Q.5	**(a)**	Explain the concept of H-point referencing.	**03**
	(b)	What is ergonomics? Explain in brief.	**04**
	(c)	Explain the chassis and body alignment test.	**07**
		OR	
Q.5	**(a)**	Explain the Crash test.	**03**
	(b)	Give the requirements of pedestrian safety.	**04**
	(c)	Explain construction and working of safety belt for occupants.	**07**

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Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2023

Subject Code:3160211 Date:10-07-2023

Subject Name:Automobile Chassis and Body Engineering

Time:10:30 AM TO 01:00 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 the vehicle roof and vehicle side panel assemble	**04**
	(c)	Describe various types of materials used for body construction	**07**
Q.2	**(a)**	Classify types of car bodies.	**03**
	(b)	Differentiate between chassis frame and automobile body	**04**
	(c)	Explain different forces and moments with their effect on the vehicle	**07**
		OR	
	(c)	Write a short note on wind tunnel testing of a scale model.	**07**
Q.3	**(a)**	Classify the types of bus body.	**03**
	(b)	Explain crumple zone in vehicle	**04**
	(c)	Explain the SSS method for a simple van.	**07**
		OR	
Q.3	**(a)**	Classify types of commercial vehicle bodies.	**03**
	(b)	Describe the aerodynamic force and moments.	**04**
	(c)	Define Blind Spot. Describe various methods to reduce blind spot in sedan car.	**07**
Q.4	**(a)**	Describe dashboard of vehicle in detail	**03**
	(b)	Explain the body trims.	**04**
	(c)	What is the difference between of Active safety and Passive safety?	**07**
		OR	
Q.4	**(a)**	Explain Crashworthiness.	**03**
	(b)	Explain construction and working of safety belt for occupants	**04**
	(c)	Explain the various equipment used for door opening and closing of vehicle.	**07**
Q.5	**(a)**	What is ergonomics? Explain in brief	**03**
	(b)	Explain the working of Airbags in vehicle.	**04**
	(c)	Explain the chassis and body alignment test.	**07**
		OR	
Q.5	**(a)**	Explain the concept of H-point referencing.	**03**
	(b)	Give the requirements of pedestrian safety.	**04**
	(c)	Describe human ergonomics for driver’s seat design.	**07**

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Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2022

Subject Code:3160211 Date:06/06/2022

Subject Name:Automobile Chassis and Body Engineering

Time:10:30 AM TO 01:00 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)**	Define: Chassis, Body, Frame	**03**
	(b)	Name various components of transmission line and explain functions of each.	**04**
	(c)	Explain types of car body with neat sketch.	**07**
Q.2	**(a)**	Explain dash board with figure in detail.	**03**
	(b)	Explain vehicle body trims.	**04**
	(c)	Explain different types of commercial vehicle body.	**07**
		OR	
	(c)	Explain driver seat design & dimension parameters.	**07**
Q.3	**(a)**	State the sources of body noise.	**03**
	(b)	Describe the uses of GRP in bus body.	**04**
	(c)	Describe various types of materials used for body construction.	**07**
		OR	
Q.3	**(a)**	Define crashworthiness of vehicle.	**03**
	(b)	Explain different types of metal section used in the construction of bus body.	**04**
	(c)	Explain the effects of different types of forces &moments acting on vehicle body.	**07**
Q.4	**(a)**	Explain about resistance to vehicle motion.	**03**
	(b)	Explain working of Airbags.	**04**
	(c)	Explain load analysis of simple van using SSS method.	**07**
		OR	
Q.4	**(a)**	Define ergonomics of vehicle.	**03**
	(b)	What do you mean by crumple zones? What is their importance?	**04**
	(c)	Differentiate between passive and active safety.	**07**
Q.5	**(a)**	Explain working of seat belt.	**03**
	(b)	Compare the conventional & integral type construction of bus body.	**04**
	(c)	Explain driver visibility & methods for improving visibility.	**07**
		OR	
Q.5	**(a)**	Write a short note on tanker body.	**03**
	(b)	Classify various bus bodies with diagram.	**04**
	(c)	Explain various body optimization techniques used for drag reduction for vehicle body.	**07**

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