Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2160205 **Date: 05/05/2017**

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.**

			MARKS
Q.1		**Short Questions**	**14**
	1	What is chassis in vehicle?	**01**
	2	What do you mean by aerodynamic resistance?	**01**
	3	What do you mean by articulated vehicle?	**01**
	4	What do you understand by non-load carrying structure?	**01**
	5	Give the passenger capacity of micro bus.	**01**
	6	What is asymmetric loading in vehicle?	**01**
	7	Brake assembly is sprung weight of vehicle. True or False ?	**01**
	8	What is interference drag force?	**01**
	9	Angle between seat rest and seat back must be obtuse. True or False ?	**01**
	10	What is active safety and passive safety?	**01**
	11	What is blind zone for driver considering visibility?	**01**
	12	What is GRP in vehicle body material?	**01**
	13	In military vehicle, driver's position must be as high as possible, why?	**01**
	14	What is cruciform chassis frame in vehicle?	**01**
Q.2	**(a)**	Give brief about the importance of crumple zones provided in vehicle	**03**
	(b)	Explain loading condition while acceleration and braking condition.	**04**
	(c)	Explain chassis frame operating and design consideration in details.	**07**
		OR	
	(c)	Explain ladder frame structure and integral body frame structure with neat sketch.	**07**
Q.3	**(a)**	Explain the functional requirements of vehicle body.	**03**
	(b)	Give brief of types of material used in vehicle body construction.	**04**
	(c)	Explain types of body styling used for vehicle in market.	**07**
		OR	
Q.3	**(a)**	What is vehicle body trim? Explain it in brief.	**03**
	(b)	Explain pressure distribution over the vehicle body while facing aerodynamic resistance.	**04**
	(c)	Explain load analysis of simple van using SSS method.	**07**
Q.4	**(a)**	Differentiate between the design of conventional and integral bus body.	**03**
	(b)	Explain key points to be considering in design of driver's cabin.	**04**
	(c)	Explain classification of bus body.	**07**
		OR	
Q.4	**(a)**	Explain construction of tanker body style and tipper body style used in vehicle.	**03**
	(b)	What is simple stress structure method? Explain it in short	**04**
	(c)	Explain different design of commercial vehicle used.	**07**
Q.5	**(a)**	Give the requirements of pedestrian safety.	**03**

	(b)	Explain working of airbags used for safety.	**04**
	(c)	Describe human ergonomics for driver's seat design.	**07**
		OR	
Q.5	**(a)**	Explain construction and working of safety belt for occupants.	**03**
	(b)	Explain chassis and body alignment test used for vehicles.	**04**
	(c)	What is the visibility of driver and explain methods to improve it?	**07**

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