Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – SUMMER • 2014

Subject Code: 170206 **Date: 31-05-2014**

Subject Name: Two and Three Wheeler Technology

Time: 02:30 pm - 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.**

Q.1	**(a)**	Explain selection criteria and design considerations for two wheeler engines.	**07**
	(b)	Why it's essential to have primary reduction? Explain with proper reasons.	**07**
Q.2	**(a)**	Explain the layout of motorcycle with neat diagram.	**07**
	(b)	Draw the schematic diagram for steering column construction used in motorcycle. Also explain different parts of its assembly.	**07**
		OR	
	(b)	Explain the chain drive. Also list the pros and cons of chain drive over belt drive.	**07**
Q.3	**(a)**	Define Castor angle. Also explain its effects.	**07**
	(b)	Describe with neat sketch: Gear shifter mechanism used in motorcycles.	**07**
		OR	
Q.3	**(a)**	Explain construction of handle bar used in motorcycles. Also list down some of the standard size parameters.	**07**
	(b)	Define Wheel base. Also explain its effects.	**07**
Q.4	**(a)**	Explain layouts with neat sketch: 1. Mechanical Braking system 2. Hydraulic Braking system	**14**
		OR	
Q.4	**(a)**	Describe the special requirements for racing bike.	**07**
	(b)	Describe the battery charging system used for three wheelers.	**07**
Q.5	**(a)**	Explain different types of swing arm arrangements used in two wheelers.	**07**
	(b)	Describe the following design consideration carried out in suspension design. 1. Suspension Frequency 2. Spring rate and total wheel travel	**07**
		OR	
Q.5	**(a)**	Describe Preventive and Brake down maintenance.	**07**
	(b)	Compare spokes wheels, alloy wheels and pressed wheels.	**07**

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