Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. - SEMESTER – VII • EXAMINATION – WINTER 2012

Subject code: 171902 **Date: 31/12/2012**

Subject Name: Automobile Engineering

Time: 10.30 am - 01.00 pm **Total Marks: 70**

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Differentiate between front and rear mount engine vehicle.	**07**
	(b)	What is the difference between chassis & frame ? Give the classification of chassis.	**07**
Q.2	**(a)**	State and explain the requirements of clutch.	**07**
	(b)	What is a synchromesh device ? describe the working of synchromesh gear box .	**07**
		OR	
	(b)	Designate the tyre with example. Differentiate between tube and tubeless tyre,	**07**
Q.3	**(a)**	With the help a neat sketch describe Hotchkiss drive . how does it differ from Torque Tube drive ?	**07**
	(b)	Give definition and signification of caster , camber , king-pin inclination .	**07**
		OR	
Q.3	**(a)**	Explain with neat sketch the working of master cylinder used in hydraulic brake.	**07**
	(b)	Describe briefly the various methods of battery testing.	**07**
Q.4	**(a)**	Why are stub axles fitted in front axle? Sketch the different types of stub axles , Differentiate between live and dead front axles .	**07**
	(b)	What are the different types of rear end suspension ? How does a rigid axle front end suspension differ from an independent front end suspension ?	**07**
		OR	
Q.4	**(a)**	What is hybrid vehicle ? Explain the scope of development in Indian contex.	**07**
Q.4	**(b)**	Explain the crash test of an auto vehicle.	**07**
Q.5	**(a)**	What is engine scanner ? How it help in engine fault finding and diagnosis ?	**07**
	(b)	Explain about enforcement of emission norms in India.	**07**
		OR	
Q.5	**(a)**	Explain the working and constructional details of air bag as safety device.	**07**
	(b)	Why torque converter is needed in automatic transmission ? Explain the continuously variable transmission system.	**07**

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