Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- Vth SEMESTER–EXAMINATION – MAY/JUNE - 2012

Subject code: 150202 **Date: 02/06/2012**

Subject Name: Automobile Systems

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 the various vehicle layouts and also give the advantage and disadvantage of front engine front wheel drive with rear engine rear wheel drive.	**07**
	(b)	Briefly explain the shock absorber in suspension system.	**07**
Q.2	**(a)**	What is the function of a clutch? Discuss the various factors affecting on the requirement of good clutch.	**07**
	(b)	Describe the construction and working of a single plate clutch with neat diagram.	**07**
		OR	
	(b)	Explain following terms:	
		i. Power required for propulsion	**02**
		ii. Traction and Tractive effort	**03**
		iii. Air resistance	**02**
Q.3	**(a)**	Explain construction, working and arrangement of sliding mesh gearbox with the help of neat sketch.	**07**
	(b)	What is the function of transfer case in vehicle? Explain the construction and operation of transfer case with neat sketch.	**07**
		OR	
Q.3	**(a)**	Write the short note on Torque Converter.	**07**
	(b)	What is the importance of differential in vehicle? Explain its construction and working.	**07**
Q.4	**(a)**	Explain the construction and working of Drum brakes with neat sketch.	**07**
	(b)	Distinguish between semi floating and full floating rear axles with the aid of suitable sketches.	**07**
		OR	
Q.4	**(a)**	Compare disc and drum type brake for automobile.	**07**
	(b)	Briefly explain the desirable tyre properties for vehicle.	**07**
Q.5	**(a)**	What is perfect steering? Derive expression for the basic condition for the perfect steering mechanism.	**07**
	(b)	What is an independent suspension? Explain the Mac Pherson strut type of independent suspension in detail.	**07**
		OR	
Q.5	**(a)**	What is the effect under following incorrect alignment?	**06**
		1. Incorrect toe setting	
		2. Too much positive caster	
		3. Incorrect camber setting	
	(b)	Write down the difference between chassis, frame and body. Classify various chassis and explain one of them.	**08**

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