GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (OLD) - EXAMINATION – SUMMER 2017

Subject Code: 150202   **Date: 10/05/2017**

Subject Name: Automobile Systems

Time: 02:30 PM to 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 working of power assisted steering with neat sketch.	**07**
	(b)	Explain various resistances acting on a vehicle in motion.	**07**
Q.2	**(a)**	What is the importance of differential in vehicle? Explain its working and construction with diagram.	**07**
	(b)	Describe in brief Camber, Castor and steering axis inclination. What are the effects of each on steering characteristics of a vehicle?	**07**

OR

	(b)	Explain the following terms in details. (1) Over inflation, (2) Air bleeding, (3) Under inflation.	**07**
Q.3	**(a)**	Explain hydro pneumatic suspension system.	**07**
	(b)	Explain working and construction of master cylinder of hydraulic braking system with diagram.	**07**

OR

Q.3	**(a)**	What is an independent suspension? Explain the MacPherson strut type of independent suspension in detail.	**07**
	(b)	Classify various brakes and explain working of internal expanding shoe brake with neat sketch.	**07**
Q.4	**(a)**	Explain Hotch kiss drive.	**07**
	(b)	Explain working of fluid flywheel with neat sketch.	**07**

OR

Q.4	**(a)**	Give the comparison of following. 1. Cross ply tyres and radial ply tyres. 2. Tubeless tyres and conventional tubed tyres.	**07**
	(b)	Distinguish between semi floating and full floating rear axles with the aid of suitable sketches.	**07**
Q.5	**(a)**	Describe the construction and working of a multi plate clutch with neat diagram and application.	**07**
	(b)	Explain the vehicle layout of four wheel drive with neat sketch. Also state the merits and demerits of four wheel drive.	**07**

OR

Q.5 **(a)** Classify various clutches and explain working of centrifugal clutch with neat sketch. **07**

(b) Write a short note on Continuously variable transmission **07**

****