Sea	at No.:	Enrolment No	_
		GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-IV(OLD) • EXAMINATION – WINTER 2016	
Su	bject	Code:140202 Date:24/11/201	16
Su	bject	Name:Institute Elective -1Fundamentals Of Automobile Systems	
Ti	me:02	2:30 PM to 05:00 PM Total Marks: 7	0
Ins	tructio		
	2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a)	How are Automobile engines classified?	07
	(b)	Classify power steering system and explain functioning of power steering system.	07
Q.2	(a)	Explain front engine and front wheel drive vehicle layout with advantages and disadvantages.	07
	(b)	Explain construction of chassis frame with figure	07
	()	OR	
	(b)	Explain the following: (i) Gradeability of a vehicle	07
Q.3	(a) (b)	(ii) Resistance during motion Explain the function of a single plate clutch with neat sketch. Draw neat sketch of 3 forward and 1 reverse speed constant mesh gear box and explain how top and reverse gear are obtained.	07 07
0.2	(a)	OR	07
Q.3	(a) (b)	Explain the working principle of torque converter with neat sketch. Explain vacuum braking system.	07 07
Q.4	(a)	Draw layout of single line hydraulic braking system and explain its working principle.	07
	(b)	What are the functions of clutches? What is double de-clutching? OR	07
Q.4	(a)	Describe any type of mechanical brake with neat sketch.	07
	(b)	Write short notes on the following: (1) Types of wheel Rims (2) Tread patterns	07
Q.5	(a)	What are the types of suspension system? Explain McPherson strut suspension system.	07
	(b)	Explain construction of three-quarter-floating axle with figure. OR	07
Q.5	(a)	Explain the requirement of steering system and discuss about steering linkages	07
	(b)	Write down merits and demerits of LPG as an automobile fuel.	07
