

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2018

**Subject Code:2150207**

**Date:04/12/2018**

**Subject Name:Automobile Transmission**

**Time: 10:30 AM TO 01:00 PM**

**Total Marks: 70**

**Instructions:**

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

		MARKS
<b>Q.1</b>	(a) What is need for transmission system in automobile?	<b>03</b>
	(b) Which are different resistances to motion of a vehicle.	<b>04</b>
	(c) Explain working of single plate clutch with neat sketch showing constructional details.	<b>07</b>
<b>Q.2</b>	(a) List out requirements of friction lining materials for clutch.	<b>03</b>
	(b) Which are different mode of operation of clutch explain in brief.	<b>04</b>
	(c) Derive equation of torque for single plate clutch as per uniform pressure theory.	<b>07</b>
<b>OR</b>		
	(c) Derive equation of torque for cone clutch as per uniform wear theory.	<b>07</b>
<b>Q.3</b>	(a) List objectives of the gear box for automobiles.	<b>03</b>
	(b) What is need for double declutching in constant mesh gear box?	<b>04</b>
	(c) Draw neat sketch of synchronizing unit also explain working of the same.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	(a) What do you mean by overdrives? Explain in brief.	<b>03</b>
	(b) Prepare sketch of Transfer box showing constructional details.	<b>04</b>
	(c) Draw sketch of fluid coupling. Explain how power is being transmitted from driving shaft to driven shaft in its part by part.	<b>07</b>
<b>Q.4</b>	(a) What do you mean by torque multiplication in case of torque convertor?	<b>03</b>
	(b) Explain working of free wheel with its line diagram.	<b>04</b>
	(c) Explain working of torque convertor with its torque characteristics curve.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	(a) What is the principal of hydrostatic drive?	<b>03</b>
	(b) List advantages hydrostatic drive over hydrodynamic drive.	<b>04</b>
	(c) Explain construction and working of typical Janny hydrostatic drive.	<b>07</b>
<b>Q.5</b>	(a) Discuss performance characteristics of electric drive for automobile in short.	<b>03</b>
	(b) List advantages and limitation of Electric drive.	<b>04</b>
	(c) Write short not on an electric-hybrid vehicle.	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	(a) What is Transaxles? Explain.	<b>03</b>
	(b) Explain Hydraulic Actuation system in brief.	<b>04</b>
	(c) Explain Chevrolet "Turbo glide" Transmission	<b>07</b>

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