Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V(New) • EXAMINATION – WINTER 2016

Subject Code:2150207 **Date:30/11/2016**

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
Q.1		**Short Questions**	
	1	What is tractive effort?	01
	2	What is the function of cushion spring in clutch plate?	01
	3	What is hydrostatic drive?	01
	4	Overdrive means gear ratio through transmission is 1:1. True or False ?	01
	5	To shift in to gear, first movement of the gear lever meshes the gear. True or False?	01
	6	Give two causes for gear clashing.	01
	7	Give function of synchronizer ring.	01
	8	What is design point in performance characteristics of torque converter?	01
	9	What is the function of stator in torque converter?	01
	10	Draw layout for four wheel drive transmission system.	01
	11	In clutch, axial force to clutch plate to remain engage with flywheel is provided by _____.	01
	12	Define stall speed in fluid flywheel.	01
	13	Give two differences in between conventional drive and electric drive.	01
	14	Give major purpose of an electronically-controlled automatic transmission.	01
Q.2	(a)	Discuss about the clutch facing material in brief.	03
	(b)	Explain forces resisting the vehicle's motion in detail.	04
	(c)	Explain constructional detail and working operation of centrifugal clutch with neat sketch.	07
		OR	
	(c)	Enlist operational problem in constant mesh gear box and explain working of synchromesh gear box with neat sketch.	07
Q.3	(a)	Explain variation of tractive effort with engine speed for vehicle.	03
	(b)	Give requirements of transmission system and draw lay out of Four wheel drive transmission system.	04
	(c)	Explain constructional detail and performance characteristics of torque convertor.	07
		OR	
Q.3	(a)	What is the coupling range in torque convertor and give its importance?	03
	(b)	Draw neat sketch and explain working of mechanism for gear lever on top of the transmission case.	04

	(c)	Explain construction and working of fluid flywheel in automatic transmission system	07
Q.4	(a)	Explain working of free wheel clutch with neat sketch.	03
	(b)	Give the limitation of ward leonard speed control system.	04
	(c)	Explain janny's hydrostatic drive in detail with neat sketch.	07
		OR	
Q.4	(a)	Mention three operational problems occurs in manual gear box and give their causes	03
	(b)	Differentiate manual transmission and automatic transmission system	04
	(c)	Give brief explanation about turbo glide constant torque transmission system used by Chevrolet.	07
Q.5	(a)	Explain constructional feature transaxle used in vehicle in short.	03
	(b)	Explain advantages and limitation of electric dive used in vehicle.	04
	(c)	Discuss Ward Leonard speed control system.	07
		OR	
Q.5	(a)	Explain importance of "electronic controlled transaxle" in short	03
	(b)	Explain Hydraulic spool valve used in actuation system in automatic transmission.	04
	(c)	What is hybrid drive system? Explain series and parallel hybrid layout with neat sketch.	07

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