Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fifth Semester B.Tech Degree Regular and Supplementary Examination December 2020

Course Code: AU 301

Course Name: AUTO TRANSMISSION

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any three full questions, each carries 10 marks.

			Marks
1	a)	Give a detailed classification of automotive clutches.	(5)
	b)	Explain the constructional details and working of a centrifugal clutch.	(5)
2	a)	Give a comparison of multi plate dry clutch and wet clutch.	(3)
	b)	Discuss the constructional details and working of a clutch used in two wheelers.	(7)
3	a)	What are the advantages of using an overdrive mechanism in a gear box?	(4)
	b)	Explain why the maximum torque and maximum power of an engine is at different speeds with the help of speed Vs Torque curve.	(6)
4	a)	What are the different types of gear selector mechanisms?	(2)
	b)	Explain the constructional details and working of a gear selector with inter-locking mechanism mounted on top of the gearbox.	(8)

PART B

Answer any three full questions, each carries 10 marks.

5	a)	Write a brief note about the application of hydrodynamic drives	(3)
	b)	Explain the constructional details and working of a dual stator torque converter.	(7)
6	a)	How the matching of a torque converter is done with an engine?	(4)
	b)	What are the different phases of operation in a torque converter?	(6)
7		Explain the principle of operation of a Revangnaux planetary gearbox at different gears with suitable sketches.	(10)
8		Discuss the different mode of operations in a Wilson gearbox with suitable sketch.	(10)

PART C

Answer any four full questions, each carries 10 marks.

9	a)	What are the limitations of hydrostatic transmission?	(5)
	b)	Give a comparison of Hydrostatic drive with Hydrodynamic drive.	(5)

10		Explain the constructional details and working of a hydrostatic drive and mention the options available for the pump and motor.	(10)
11		Why the CVTs are less efficient than AMT? With a suitable sketch explain the constructional details and working of a variable Pulley type CVT.	(10)
12		With suitable sketches / block diagrams, explain the electronic control system used in an automatic transmission system.	(10)
13	a)	What are the advantages of DSG automatic transmission over AMT transmission?	(4)
	b)	What are the important sensors used in the automatic transmission system? Explain their function.	(6)
14		Explain the working of DSG transmission with suitable layout sketch showing the important input and output sensors and controllers.	(10)

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