Name: **Enrolment No:**	UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2018

Course: Automotive Transmission Systems (ADEG311) **Semester: V**

Programme: B.Tech Automotive Design Engineering

Time: 03 hrs. **Max. Marks: 100**

Instructions:

SECTION A

S. No.		Marks	CO
Q 1	Explain the key differences between automatic, semi-automatic and manual transmission system.	4	CO4
Q 2	Explain the role of gearbox in enhancing Engine Operating Range (EoR) output.	4	CO1
Q 3	Discuss in brief about scuffing resistance of lubricants	4	CO2
Q 4	Draw the free body diagram of Hotchkiss Drive.	4	CO1
Q 5	Discuss in brief the construction of fluid coupling with suitable diagram	4	CO3
	SECTION B		
Q 6	A gearbox is in second gear has a ratio of 2.31:1. The engine torque is 126 N-m and the output torque to the propeller shaft is 287 N-m. Calculate the mechanical efficiency of the gearbox in second gear.	10	CO1
Q 7	Illustrate with the neat diagram the use of Wilson gearbox in automatic transmission system	10	CO4
Q 8	Explain with suitable diagram the process of gearbox breathing and its significance.	10	CO2
Q 9	Explain in detail the concept of hydrodynamic power transmission along with use of lockup clutch and stator in torque converter **OR** Explain in detail the differences between fluid flywheel and torque converter.	10	CO3
	SECTION-C		
Q 10	Analyze the horizontal and vertical forces in Hotchkiss and Torque Tube drive, derive the expression with suitable free body diagrams	20	CO1
Q 11	Examine Chevrolet Turboglide transmission system with its working and suitable diagram **OR** Examine Chevrolet Powerglide transmission system with its working and suitable diagram	20	CO4