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P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belagavi)
Eighth Semester, B.E. - Automobile Engineering
Semester End Examination; May / June - 2019
Automotive Transmission and Suspension

Time: 3 hrs — Max. Marks: 100

Note: Answer **FIVE** full questions, selecting **ONE** full question from each unit.

UNIT - I

1 a.	Discuss the construction and working of multiplate clutch.	10
b.	Sketch and explain the following :	
	i) Centrifugal clutch	10
	ii) Electromagnetic clutch	
2 a.	Sketch and explain the principle of operation of fluid fly wheel.	10
b.	With schematic diagram, explain the three stage torque converter.	10

UNIT - II

3 a.	With graph, explain the necessity of gear box in a vehicle.	10
b.	Sketch and explain the working of constant mesh gear box.	10
4 a.	Sketch and explain two speed epicyclic gear box.	10
b.	Sketch and explain the working of directional control valve to operate a two speed transmission.	10

UNIT - III

5 a.	Sketch and explain planetary final drive.	10
b.	Discuss the purpose of differntial and differnetial lock in a vehicle.	10
6 a.	With sketch, explain the Hotchkiss type of rear axle drive.	10
b.	Discuss different loads on rear half live axle shaft.	10

UNIT - IV

7 a.	Discuss the importance of castor, toe-in and toe-out with sketch.	6
b.	Sketch and explain worm and nut type steering gear.	8
c.	What is power steering? What is the purpose of power steering?	6
8 a.	Sketch and explain telescopic type of shock absorber.	10
b.	Discuss the Air suspension and Hydrostatic suspension.	10

UNIT - V

9 a.	Sketch and explain internal expanding shoe brake.	10
b.	Sketch and explain the principle and working of master cylinder.	10
10 a.	Discuss the necesity of power brake in heavy vehicle with example.	10
b.	With schematic layout, explain the different components of air brake system .	10

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