

U.S.N

--	--	--	--	--	--	--	--	--	--



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; Aug. / Sep. - 2020

Automotive Transmission and Suspension

Time: 3 hrs

Max. Marks: 100

Note: i) Answer TWO full questions, selecting ONE full question from UNIT - I and UNIT - II.

ii) Answer any THREE full questions, choosing from UNIT - III, UNIT - IV and UNIT - V.

UNIT - I

- 1 a. Discuss the basic requirements of clutch in automobile. 6
- b. Sketch and explain the working of single plate clutch. 8
- c. With examples, differentiate between positive and non-positive drive. 6

OR

- 2 a. Sketch and explain the principle of working of centrifugal clutch. 10
- b. Sketch and explain the construction and working of two stage torque converter. 10

UNIT - II

- 3 a. Explain the function and necessity and transmission in a vehicle. 6
- b. Describe the following terms: 6
- i) Traction ii) Tractive effort
- c. Sketch and explain the constructional details of constant mesh gear box. 8

OR

- 4 a. What are the advantages of epicyclic gear box over conventional gear box? 10
- b. With schematic diagram, explain the working of a Wilson gear box. 10

UNIT - III

- 5 a. Sketch and explain the double reduction final drive. 10
- b. With schematic diagram, explain the working and necessity of differential. 10
- 6 a. Discuss various forces and torque acting on rear axle. 10
- b. With sketch, differentiate between semi floating and fully floating rear axle. 10

UNIT - IV

- 7 a. Explain the terms, camber, castor and Toe in-Toe out. What are the effects of each on the steering characteristics of vehicle? 10
- b. Explain with schematic diagram, steering linkage for rigid axle suspension. 10
- 8 a. Write notes on; 10
- i) Leaf springs ii) Coil springs
- b. With schematic diagram, explain the air spring suspension system. 10

Mandya Devichandrasekhar

Contd...2

UNIT - V

- 9 a. Sketch and explain the internal expanding shoe brake, differentiate between leading shoe and trailing shoe. 10
- b. With schematic diagram, explain working of hydraulic brake system. 10
- 10 a. With schematic layout, explain the working of air brake system. 10
- b. Discuss the working and advantages of ABS. 10

* * * *


Dr. N. L. MURALI KRISHNA
Controller Of Examinations
P.E.S. College of Engineering
(An Autonomous Institution under VTU, Belgaum)
MANDYA-571 401, Karnataka