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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; July - 2021

Automotive Chassis and Transmission

Time: 3 hrs

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1 a. Discuss the working principle and requirements of a clutch. 6
- b. Discuss the factors affect the torque transmission in a clutch. 4
- c. Sketch and explain the working of single plate clutch. 10
- 2 a. Explain the working principle of fluid flywheel with a neat sketch. 6
- b. How do you differentiate the torque converter with fluid flywheel? Explain. 4
- c. Sketch and explain the working of torque converter. 10
- 3 a. Explain the various resistance encountered by a moving vehicle. 10
- b. Explain the following terms:
 - i) Acceleration
 - ii) Traction 10
 - iii) Tractive effort
 - iv) Drawbar pull
- 4 a. Sketch and explain the working of synchromesh gear box. 10
- b. Sketch and explain the principle of operation of automatic transmission. 10
- 5 a. With a neat sketches, explain the hotchkiss and torque tube drive. 10
- b. Sketch and explain the working of differential. 10
- 6 a. Explain X-member type frame construction and highlight itsadvantages and disadvantages. 10
- b. Discuss the materials used for frame construction of automobile. 10
- 7 a. Sketch and explain Ackermann steering mechanism. 10
- b. Explain the steering linkages for rigid axel suspension system with neat sketch. 10
- 8 a. List the types of suspension system. Explain any three types. 10
- b. Sketch and explain the working of telescopic shock absorber. 10
- 9 a. Explain the difference between Disc and Drum brakes with neat sketches. 10
- b. Sketch and explain theh hydraulic braking system. 10
- 10 a. Explain the necessity of brakes in an automobile. 6
- b. Sketch and explain the layout of air braking system. 10
- c. Explain the role of ABS while braking. 4

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