

Roll No.

Total No. of Pages : 2

Total No. of Questions : 09

B.Tech (AE) (Sem.-5)

AUTOMOTIVE TRANSMISSIONS

Subject Code : AE-303

Paper ID : [A0714]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a) What is the need for transmission system?
- b) Discuss the various components of a clutch.
- c) What are the advantages and limitations of electric drive?
- d) Discuss the function of a synchronizer.
- e) Discuss the function of transfer box.
- f) What do you mean by drag torque?
- g) Why wet type of multiplate disc clutch is preferred in automatic transmission?
- h) State the purpose of using constant mesh gearbox in a two-wheeler.
- i) Discuss the various types of hydrostatic systems.
- j) Discuss the function of an overdrive.

SECTION-B

2. Sketch and explain the variation of Tractive effort with vehicle speed.
3. Compare hydrostatic drive with hydrodynamic drive.
4. Describe the working principle of torque converter with a neat sketch.
5. What are the centrifugal devices? Explain the constructional features and working of a centrifugal clutch.
6. What do you mean by Gear ratio and how it can be determined?

SECTION-C

7. Discuss with a suitable diagram the working principle of early and modified Ward Leonard control system elaborating each component.
8. Describe the working principle and performance characteristics of fluid coupling.
9. Explain the constructional features and working principle of Chevrolet 'Turboglide' automatic transmission system.