

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV • EXAMINATION – WINTER • 2014****Subject Code: 140202****Date: 02-01-2015****Subject Name: Fundamental of Automobile System****Time: 02:30 pm - 05:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain classification of Vehicles along with examples. 07
(b) Explain the functions of Propeller shaft and Differential assembly. 07
- Q.2** (a) Mention the types of manual gear box. Explain the working principle of gearbox. 07
(b) What is an Epicyclic Gear box, describe its applications. 07
OR
(b) Explain the working of sliding mesh gear box with neat sketch. 07
- Q.3** (a) Explain the following : 07
(i) Gradeability of a vehicle
(ii) Resistance during motion
(b) Explain the types of vehicular Chassis frame construction. 07
OR
- Q.3** (a) Explain the functions of clutch plate, pressure plate and Fly wheel. 07
(b) What are the functions of clutches? What is double de-clutching? 07
- Q.4** (a) Explain the hydraulic brake system with neat sketch 07
(b) What are the functions of braking system? Explain pneumatic braking system 07
OR
- Q.4** (a) What are the basic requirements of brake fluid? Describe the bleeding of brakes. 07
(b) Draw a neat sketch of internal expanding brakes and explain the components involved. 07
- Q.5** (a) What are the requirements of steering system? Explain any one type of steering gear box with a neat sketch. 07
(b) Explain following performance parameters of Vehicles: 07
(i) Tractive Force
(ii) Gradeability
(iii) Power & Torque Characteristics of Engine
(iv) Exhaust Brake system
OR
- Q.5** (a) Explain the following: 07
(i) Camber (ii) Caster (iii) Kingpin inclination (iv) Toe-in (v) Toe-out
(b) Write short notes on the following: (1) Types of wheel Rims (2) Tread patterns 07
