

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE – SEMESTER – IV • EXAMINATION – WINTER 2017****Subject Code: 140202****Date: 29/11/2017****Subject Name: Fundamentals of Automobile Systems****Time: 02.30PM to 05.00PM****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 characteristics of Engines based on various types of Fuels used in Automobiles. **07**
- Q.2** (a) Explain the working principle of torque converter with neat sketch. **07**
(b) Explain sliding mesh gear box with neat sketch. **07**
- OR**
- (b) Explain the types of vehicular Chassis frame construction. **07**
- Q.3** (a) Explain tractive force and gradeability. **07**
(b) Explain multi plate clutch with advantages and disadvantages. **07**
- OR**
- Q.3** (a) Differentiate between tubeless tyres and tyres with tube. **07**
(b) Explain various tread patterns of tyre with neat sketch. **07**
- Q.4** (a) What are the functions of braking system? Explain pneumatic braking system. **07**
(b) List out the main elements of hydraulic braking system. Describe working and Construction of master cylinder. **07**
- OR**
- Q.4** (a) Explain three quarter floating rear axle with neat sketch. **07**
(b) Explain construction and working of propeller shaft with neat sketch. **07**
- Q.5** (a) Explain the requirement of steering system and discuss about steering linkages. **07**
(b) Explain camber and caster in steering with neat sketch. **07**
- OR**
- Q.5** (a) Explain construction and working of McPherson strut suspension. **07**
(b) Explain construction and working of telescopic type shock absorber. **07**
