

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– V • EXAMINATION – WINTER 2016

Subject Code: 150202**Date: 30/11/2016****Subject Name: Automobile Systems****Time: 10:30AM – 01:00PM****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 with neat sketch the vehicle layout for Automobile of front Engine rear wheel drive. **07**
- (b) Explain functions of automobile frame. Give comparison of conventional frame and frameless construction. **07**
- Q.2** (a) Define the following terms: **07**
(i) Air resistance (ii) Gradiability (iii) Traction and Tractive effort.
(iv) Wheel skidding.
- (b) Explain various resistances acting on a vehicle in motion. **07**
- OR**
- (b) With neat sketch explain construction and working of centrifugal clutch. **07**
- Q.3** (a) With neat sketch explain the working of Sliding mesh gear box. **07**
- (b) Explain construction and working of Master cylinder with neat sketch. **07**
- OR**
- Q.3** (a) Describe the common features and major differences in a constant mesh and synchromesh gear box. **07**
- (b) Give the comparison of following. **07**
1. Cross ply tyres and radial ply tyres.
2. Tubeless tyres and conventional tubed tyres.
- Q.4** (a) Which are the main components of an automobile? Describe all of them briefly. **07**
- (b) Discuss three quarter floating axle with neat sketch. **07**
- OR**
- Q.4** (a) Describe air suspension system with neat sketch. **07**
- (b) Define the following terms: **07**
• Over steer
• Under steer
• Cornering power
• Slip angle
- Q.5** (a) Explain Bleeding of Brake with neat sketch. **07**
- (b) Describe with neat sketch Ackerman steering system linkages. **07**
- OR**
- Q.5** (a) Explain in detail Telescopic type shock absorber. **07**
- (b) Explain working of propeller shaft with suitable sketch and function of each Component of it. **07**
