

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV • EXAMINATION – SUMMER 2013

Subject Code: 140202**Date: 17-06-2013****Subject Name: Fundamental of Automobile System****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) List out advantages and disadvantages of front engine-front wheel drive vehicles. **07**
- (b) Draw front and top views of rear engine, rear wheel drive type chassis layout and state its relative merits over the conventional type chassis layout. **07**
- Q.2** (a) What do you mean by centrifugal clutch? Explain construction and working of semi-centrifugal clutch. **07**
- (b) Classify engine according to fuel used and compare petrol v/s CNG engine vehicle for various aspects. **07**
- OR**
- (b) Define the words “Frame”, “Chassis” and “Body” of automobile vehicle. Also give detail comparison of conventional frame and frameless construction. **07**
- Q.3** (a) Give the types of automatic transmission and discuss any one with neat sketch. **07**
- (b) Draw sketch of synchromesh gear box. Also explain its working briefly. **07**
- OR**
- Q.3** (a) Define following terms briefly: **07**
 (I) Air Resistance (II) Rolling Resistance (III) Gradient Resistance
 (IV) Traction (V) Tractive Effort.
- (b) Explain construction and working vacuum brake. **07**
- Q.4** (a) List out the main elements of hydraulic braking system. Describe working and construction of master cylinder. **07**
- (b) Describe fully floating rear axle. How the various forces resisted by the components of such axle. **07**
- OR**
- Q.4** (a) What is principle and function of differential? Sketch the diagram of differential under following condition. **07**
 (i) Vehicle going straight
 (ii) Vehicle taking right turn
 (iii) Vehicle taking left turn
- (b) Write short note on tyre specification. **07**
- Q.5** (a) Explain : (i) Camber (ii) Caster (iii) Toe-in (iv) Toe-out with respect to steering geometry **07**
- (b) Write short note on power steering. **07**
- OR**
- Q.5** (a) Classify independent suspension. Explain any two in detail with neat sketch. **07**
- (b) Write short note on leaf spring. **07**
