

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE – SEMESTER V • EXAMINATION – WINTER - 2012****Subject code: 150202****Date: 12-01-2013****Subject Name: Automobile systems****Time: 02:30 pm to 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) Describe functions of a clutch in automobile. Explain lining materials used in a clutch. **07**  
(b) Explain with a neat sketch the working of a multi plate clutch. **07**
- Q.2** (a) Classify gear box. Explain use of gear box in automobile. **07**  
(b) Describe with a neat sketch the working of synchromesh gear box. **07**  
**OR**  
(b) Explain power required and engine characteristics of automobile. **07**
- Q.3** (a) Describe with a neat sketch the working of continuously variable transmission. **07**  
(b) Explain with a neat sketch the hydraulic automatic transmission. **07**  
**OR**
- Q.3** (a) Describe with a neat sketch the working of master cylinder of hydraulic brake. **07**  
(b) Explain with a neat sketch the pneumatic braking system. **07**
- Q.4** (a) Describe with a neat sketch the working of propeller shaft. **07**  
(b) Explain with a neat sketch the fully floating axle. **07**  
**OR**
- Q.4** (a) Explain with a neat sketch the tyre section and specifications of tyres. **07**  
(b) Describe with a neat sketch the automobile chassis. **07**
- Q.5** (a) Explain with a neat sketch the steering gears. **07**  
(b) Describe with a neat sketch the working of power steering. **07**  
**OR**
- Q.5** (a) Classify the suspension system. Explain with a neat sketch the working of shock absorber. **07**  
(b) Describe with a neat sketch the working of front engine and front wheel drive. **07**

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