

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII • EXAMINATION – WINTER 2013

Subject Code: 171902**Date: 05-12-2013****Subject Name: Automobile Engineering****Time: 10:30 TO 01:00****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) “Automobile engineering is a growth of any country” Explain. **07**
 (b) Give the classification of automobiles. **07**
- Q.2** (a) What is chassis? What are the components of a chassis? Indicate their functions. **07**
 (b) What are the requirements of suspension system? **07**
OR
 (b) Describe the **MACPHERSON Independent** suspension system. **07**
- Q.3** (a) Explain briefly following types of tyres **07**
 a) Conventional tube tyre
 b) Tubeless tyre
 (b) What are the various forces that act on a moving vehicle? Explain. **07**
OR
- Q.3** (a) Explain briefly the principle of operation of a clutch. **07**
 (b) What is a fluid coupling? Explain its construction and operation. **07**
- Q.4** (a) Name the types of the gearboxes used in automobiles. Explain in brief any one type of gear box. **07**
 (b) Explain the construction and working of a differential with a neat sketch. **07**
OR
- Q.4** (a) Explain with neat sketches battery ignition system. **07**
 (b) Explain automobile lighting system. Give the various types of lighting system. **07**
- Q.5** (a) Explain with neat sketches of hydraulic brake system. **07**
 (b) Explain with neat sketches working of a master cylinder **07**
OR
- Q.5** (a) State the requirements of a good steering system. **07**
 (b) What is Ackermann’s principle? Explain in detail. **07**
