

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. Sem-IV Remedial Examination Nov/ Dec. 2010****Subject code: 140202****Subject Name: Fundamentals of Automobile System****Date: 08 / 12 / 2010****Time: 03.00 pm – 05.30 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) How are Automobile engines classified? **04**
 (b) Explain the working principle of four-stroke C.I engine with neat sketch **05**
 (c) What are the important stationary and moving components of I C engines? **05**
- Q.2** (a) Mention the types of manual gear box. Explain the working principle of gear box. **07**
 (b) Explain the working of constant mesh gear box with neat sketch. **07**
OR
 (b) Explain the working principle of torque converter with neat sketch. **07**
- Q.3** (a) Explain the different types of chassis frames in detail. **07**
 (b) Explain the following : (i) Gradeability of a vehicle **07**
 (ii) Resistance during motion
OR
- Q.3** (a) Explain the function of a single plate clutch with neat sketch. **07**
 (b) What are the functions of clutches? What is double de-clutching? **07**
- Q.4** (a) What are the functions of braking system? Explain pneumatic braking system. **07**
 (b) Describe the step by step procedure for bleeding of brakes **07**
OR
- Q.4** (a) Explain the hydraulic brake system with neat sketch. **07**
 (b) Explain three quarter floating rear axle with neat sketch **07**
- Q.5** (a) Write short notes on the following: (1) Types of wheel Rims **07**
 (2) Tread patterns
 (b) What are the requirements of steering system? Explain any one type of steering gear box with a neat sketch. **07**
OR
- Q.5** (a) What are the types of suspension system? Explain McPherson strut suspension system. **07**
 (b) Write short notes on the following **07**
 (1) Coil spring
 (2) Leaf spring
 (3) Torsion bars
