

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE – SEMESTER IV EXAMINATION – SUMMER 2015**

**Subject Code: 140202****Date: 08/06/2015****Subject Name: FUNDAMENTALS OF 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) Classify automobile vehicles along with example. **07**  
(b) List out the advantages and disadvantages of front engine-front wheel drive vehicles. **07**
- Q.2** (a) Explain construction and working of four stroke S.I. engine with neat sketch. **07**  
(b) Write advantages and limitations of CNG as an automobile fuel. **07**
- OR**
- (b) Write function of each components of LPG conversion kit. **07**
- Q.3** (a) Explain construction and working of synchromesh gearbox. **07**  
(b) Explain construction of chassis frame with figure. **07**
- OR**
- Q.3** (a) Explain construction and working of CVT. **07**  
(b) Write about construction of body of automobile car. **07**
- Q.4** (a) Draw layout of pneumatic braking system and explain its working. **07**  
(b) Write definition of various resistances offered by automobile vehicles during motion with necessary equations. **07**
- OR**
- Q.4** (a) Explain construction and working of internal expanding shoe brake with its layout sketch. **07**  
(b) Explain construction and working of centrifugal clutch with neat sketch. **07**
- Q.5** (a) (i) Define term “sagging” for propeller shaft. **02**  
(ii) Explain construction and working of any one type of steering gearbox. **05**  
(b) (i) Designate the automobile tyre with example. **02**  
(ii) Explain construction and working of suspension system for heavy duty vehicles. **05**
- OR**
- Q.5** (a) (i) List types of steering gear boxes. **02**  
(ii) With neat sketch write construction details of propeller shaft. **05**  
(b) (i) List types of suspension systems. **02**  
(ii) Differentiate between tube and tubeless tyre. **05**

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