

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) - EXAMINATION – SUMMER 2016****Subject Code:2150202****Date:11/05/2016****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) Explain the various vehicle layouts and Explain with neat sketch the vehicle layout for Automobile of front engine rear wheel drive. **07**
- (b) Explain types of chassis with suitable sketch. **07**
- Q.2** (a) Classify the suspension system. Explain with a neat sketch the working of telescope shock absorber. **07**
- (b) What is an independent suspension? Explain the MacPherson strut type of independent suspension in detail. **07**
- OR**
- (b) Explain single plate clutch with neat sketch. **07**
- Q.3** (a) Describe with a neat sketch the working of master cylinder of hydraulic brake. **07**
- (b) Write a short note on Torque convertor. **07**
- OR**
- Q.3** (a) Compare disc and drum type brake for automobile. **07**
- (b) Classify gear box. Explain use of gear box in automobile. **07**
- Q.4** (a) Write a short note on Power steering. **07**
- (b) Describe with neat sketch the construction and working of a 4-forward and 1-reverse type constant mesh gear box **07**
- OR**
- Q.4** (a) What is the effect under following incorrect alignment? **07**
1. Incorrect toe setting
 2. Too much positive caster
 3. Incorrect camber setting
- (b) What is the importance of differential in vehicle? Explain its working and construction with diagram. **07**
- Q.5** (a) Explain following term; **07**
1. Traction and Tractive effort
 2. Air resistance.
 3. Wheel skidding
- (b) Distinguish between semi floating and full floating rear axles with the aid of suitable sketches. **07**
- OR**
- Q.5** (a) Explain various resistances acting on a vehicle in motion. **07**
- (b) Classify tyres and compare between radial ply and bias ply tyres. **07**
