

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. Sem. - V - Examination – June- 2011

Subject code: 150202

Subject Name: Automobile Systems

Date: 22/06/2011

Time: 10:30 am – 01:00 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 with neat sketch working & construction of cone clutch with its advantages disadvantages. **07**
(b) Explain with neat sketch working & construction of fluid flywheel with its advantages disadvantages. **07**
- Q.2** (a) Name the different resistances overcome by the vehicle and explain each. **07**
(b) Define the following terms. **07**
1. Traction & Tractive effort 2. Gradiability 3. Draw bar pull 4. Clutch free pedal play 5. Double declutching 6. Fading of brake 7. Wheel skidding
OR
(b) Explain the rear axle shaft supporting of 1. Semi floating 2. Three quarter floating. **07**
- Q.3** (a) Mention the types of manual gear box. Explain working & construction of constant mesh gear box with figure. **07**
(b) What is the principle of automatic transmission? Explain epicyclic gear box. **07**
OR
Q.3 (a) Explain working & construction of master cylinder with figure in hydraulic braking system. **07**
(b) Explain the working principle of hydraulic torque converter with neat sketch. **07**
- Q.4** (a) Name the different types of wheels. Explain any one in detail with figure. **07**
(b) Explain working & construction of differential unit with figure. **07**
OR
Q.4 (a) Name the types of rear axle drives and explain any one. **07**
(b) Give the comparison of following. **07**
1. Cross ply tyres and radial ply tyres.
2. Tubeless tyres and conventional tubed tyres.
- Q.5** (a) What is steering geometry? Define the different terms related to the steering geometry. **07**
(b) Name the different types of suspension springs. Explain leaf spring. **07**
OR
Q.5 (a) Write a short note on power steering. **07**
(b) Explain 1. Wishbone independent suspension & 2. Mac Pherson strut independent suspension. **07**
