

Roll No

ME - 704**B.E. VII Semester**

Examination, December 2013

Automobile Engineering**Time : Three Hours****Maximum Marks : 70**

- Note:** 1. All questions carry equal marks.
 2. All questions are compulsory.
 3. Internal choices are given.

1. a) Explain briefly the steel section used in chassis frame?
 b) Give classification of chassis with respect of engine fitting?

OR

- a) What do you understand by front wheel and rear wheel drive, four wheel drive explain briefly?
 b) What are the Indian standards for automotive vehicles Bharat I and II, Euro I and II norms?

2. a) Give the layout of steering system and label the various parts. Also explain the working of the steering system?
 b) Define and explain following:-
 i) Camber angle
 ii) Caster angle
 iii) King-pin-inclination
 iv) Toe-in

OR

- a) Give the construction of front axle?
 b) Why are stub axles fitted in front-axles? Sketch the different types of stub axles?

3. a) What are the functions of a clutch? Explain briefly the principle operation of a clutch.
 b) Explain briefly any two:-
 i) Sliding mesh gear box
 ii) Constant mesh gear box
 iii) Synchromesh gear box.

OR

- a) Describe briefly the working of a hydraulic torque converter?
 b) Name the components of an automatic transmission and advantages also?

4. a) Give the simplified diagram of a independent front suspension?
 b) Describe briefly
 i) Torsion Bass
 ii) Air and Gas springs
 iii) Rubber springs

OR

- a) Explain with neat sketch a 'Hydraulic Braking System'?
 b) Describe briefly "Self energizing brakes"?

5. a) What are the major components of the automotive electrical system?
 b) Briefly describe the construction of a lead-acid battery with the help of neat sketch?

OR

- a) Discuss the construction and working of starting motors of automobiles?
 b) Explain microprocessor based control system for automobiles?