

FACULTY OF ENGINEERING

B.E. 3/4 (Automobile Engineering) I - Semester (Main) Examination, December 2011

Subject : **Automotive Chassis Components**

Time : 3 Hours

Max. Marks: 75

Note: Answer **all** questions of Part – A. Answer any **five** questions from Part-B.**PART – A (25 Marks)**

1. What is hill holder? (2)
2. List out the Brake troubles and their causes. (3)
3. List out the different types of Automobile bodies. (2)
4. What are the functions of the frames? (2)
5. What is the steering gear ratio? Why is it necessary? (3)
6. Explain the following : (3)
(a) Camber (b) Castor (c) King pin inclination
7. What is the function of a final drive? (2)
8. What are the causes of noise occurring in the rear axles? (3)
9. What are the causes of the (3)
(a) Rough ride
(b) Sagging springs
(c) Noise in the springs of the suspension system
10. What is the function of a Stabilizer? (2)

PART – B (50 Marks)

11. Explain the different types of chassis frames along with the cross section types and materials used for frames. (10)
12. Explain the causes and remedies for (10)
(a) Hard steering (b) Car Wanders (c) Shimmy front wheels
(d) scuffed tyres (e) Erratic steering
- 13.(a) Explain self locking differential. (5)
(b) Differentiate between Hotchkiss and torque tube drive. (5)
14. Explain the different types of independent suspension system with neat sketches. (10)
15. Explain Hydraulic breaking system used in automobiles with a neat sketch. (10)
- 16.(a) Explain the four-wheel drive used in military applications.
(b) Discuss different types of differentials and describe the types used for small automobiles. (10)
17. Explain any **two** of the following :
(a) Rank and pinion steering gear