Code No. 2281

FACULTY OF ENGINEERING

B.E. 3/4 (Automobile Engg.) I – Semester (Main) Examination, Nov. / Dec. 2012

Subject : Automotive Chassis Components

Time : 3 hours **Max. Marks : 75**

Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.

PART – A (25 Marks)

1. Give advantages of frameless construction over conventional framed construction. (3)
2. How chassis are classified? (2)
3. State the factors which influence the stability and control of vehicles. (2)
4. Derive an expression for basic condition for a perfect steering mechanism. (3)
5. What are the parts of drive shaft? Give its functions. (3)
6. What is the function of Hook's joint? (2)
7. What are the objectives of vehicle suspension? (3)
8. What is the function of shock absorber? (2)
9. What are the various factors influencing braking effects? (2)
10. What is an ABS? (3)

PART – B (5 x 10 = 50 Marks)

11. a) Sketch rack and pinion steering gear arrangement and explain its working. (5)
    b) Sketch a power steering system and explain its working. (5)

12. a) Give the effect of camber, castor, king pin inclination, toe-in. (5)
    b) Discuss in detail the Ackermann steering mechanism. (5)

13. Draw and explain the following drives (10)
    i) Hotchkiss drive ii) Torque tube drive

14. Discuss in detail the construction and operation of differential gear-box. (10)

15. a) What are different types of suspension systems used in a 4-wheeler vehicle? (5)
    b) Explain the Torsion bar springs, lead springs. (5)

16. a) Draw simple hydraulic brake system and explain its working. (5)
    b) Explain with neat sketch the hand brake mechanism. (5)

17. Explain the following : (10)
    a) Read wheel independent suspension
    b) Explain with neat sketch the drum break.

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