Code No. 6481 /S

FACULTY OF ENGINEERING

B.E. 3/4 (A.E.) I – Semester (Supplementary) Examination, July 2014

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 What is meant by 4 x 2 drive chassis vehicle and 4x4 drive chassis vehicle? Give examples of vehicles for each.
2 Define frame of an automobile. What is the most important requirement of a frame?
3 Define under steer and over steer.
4 What is a stub axle? Why are they fitted in front axles?
5 What is the advantage of a two piece propeller shaft?
6 How does a Hotchkiss drive differ from a torque tube drive?
7 What is the function of a shock absorber in the suspension system?
8 What is the function of a shackle in a leaf spring?
9 What is meant by locking of wheel during breaking?
10 Name the important components of a drum brake.

PART – B (50 Marks)

11 a) Explain the various loads coming on the chassis frame.
b) Compare the conventional frame and integral (frameless) construction of passenger car bodies.

12 a) Explain briefly the defects that occur in frame and mention the materials used for frames.
b) With a schematic diagram explain the steering linkage for a conventional rigid axle suspension.

13 a) Describe the live and dead front axles.
b) Explain the terms steering gear ratio, cornering force, reversible steering, irreversible steering and turning radius.

14 a) With the help of a neat sketch describe the Hotchkiss drive.
b) Explain with neat sketch the fully floating and semi floating axle.

15 a) Describe the construction and working of a telescopic shock absorber with a neat sketch.
b) Explain briefly the construction and working of any one type of independent suspension.

16 a) With a layout diagram explain the working of an air brake system.
b) Discuss the classification of brakes from different considerations.

17 Write short notes on the following:
i) Power steering ii) Antilock Barking System iii) Coil springs

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