

Roll No _____

Examination May-2014

Total no of page-2

B.Tech,

AUTOMOTIVE CHASSIS AND COMPONENTS (AE-203)

Paper ID-A0703

Time: 03 hours

Maximum Marks: 60

Note: Section A is **Compulsory**. Attempt any **Four** questions from **Section B**. Attempt any **Two** questions from **Section C**.

Section A

(10*2 = 20)

Q1 (a) What is the principle of multi axle steering system?

(b) Explain Anti-lock braking system.

(c) What are the functions of universal joint?

(d) Distinguish between disc brake and drum brake.

(e) What is the principle of automatic transmission?

(f) Explain steering linkages and steering gears.

(g) Define the terms 'Traction and Tractive effort'.

(h) What is ply rating of a tyre?

(i) What is "Brake Compensation"?

(j) List the various materials used in construction of chassis frames.

Section B

(4*5= 20)

Q2. Explain how wheel skidding is caused and describe the principles of various techniques used to prevent skidding.

Q3. Explain the construction and working of a telescopic type of shock absorber.

Q4. Discuss in detail the Ackermann steering mechanism.

Q5 (a) How do you check the alignment of chassis frame? (3)

(b) What are the various loads coming on chassis frame? (2)

Q6. Explain various tyre wear patterns and their causes in brief.

SectionC

(2*10= 20)

Q7. Distinguish between semi-floating and fully-floating rear axles with the aid of suitable sketches and explain their relative merits and demerits.

Q8 (a) What are the different types of wheels used in automobile? Discuss their relative merits. (5)

(b) Describe with the help of neat sketch working of power steering unit. (5)

Q9 (a) What is non-slip differential or differential lock? Describe its operation. (4)

(b) Explain with neat sketch construction of stub axle and wheel mounting. (4)

(c) How can gear ratio of a final drive be determined? (2)

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