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Total No. of Pages : 2

Total No. of Questions : 09

B.Tech. (AE) (Sem.-3)

AUTOMOTIVE CHASSIS & COMPONENTS

Subject Code : AE-203

Paper ID : [A0703]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a. Define different types of chassis used in automobiles.
- b. Define turning circle, state its approximate values for a car and a bus.
- c. State advantages of using constant velocity joint over Hooke's joint.
- d. Which type of rear axle is best suited for heavy vehicles?
- e. What is the function of stub axle and king pin in front axle?
- f. How laminated leaf springs are self damping in suspension?
- g. State the function of a torsion bar.
- h. What is static and dynamic unbalance?
- i. Why wire wheels can't be used with tubeless tyres?
- j. What is fading of brakes?

SECTION-B

2. What is perfect steering? Derive an expression for basic condition for a perfect steering mechanism.
3. How the torque is divided by the differential between the wheels on turns?
4. Compare drum brakes with disc brakes.
5. Discuss different methods of supporting live rear axle shafts.
6. Explain with sketch double wishbone type of independent suspension system with a sketch.

SECTION-C

7. Explain Camber angle, Castor angle, Steering axis inclination, toe-in & toe-out. Discuss their effects on steering characteristics of vehicle.
8. Draw out detailed comparison of radial and bias ply tyres. Also sketch and explain their construction.
9. Why do we need anti-locking braking system in automobile? Sketch and explain working of anti-lock braking system and list its merits and demerits.