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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(AE) (2011 & 2012 Batch) (Sem.-3)

AUTOMOTIVE CHASSIS SYSTEMS

Subject Code : BTAE-303

Paper ID : [A1121]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS 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 have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A**1. Write briefly :**

- (a) Differentiate between Chassis and superstructure.
- (b) What is final drive?
- (c) What is a dead axle?
- (d) What is the function Planet pinions in an Automobile Differential?
- (e) Differentiate between "Toe in" and "Toe out".
- (f) What is the function of "Pitman arm" in Steering system?
- (g) What is the function shackle in suspension system?
- (h) Differentiate between Radial and bias ply tires.
- (i) Explain "Weight Transfer" during braking.
- (j) What is Rolling Resistance? How it is provided?

SECTION-B

2. List out the different types of vehicles frames and sketch a typical ladder type frame.
3. Sketch the layout of a full floating rear axle and list out its salient features.
4. Explain the necessity and principle of working of antilock differential?
5. Discuss working of vacuum brakes with neat sketch.
6. Explain the torque tube drive with a neat sketch. What are the limitations in using the torque tube drive?

SECTION-C

7. What do you understand by independent suspension system in a vehicle? What are its advantages over rigid axle suspension system? With the help of neat diagram discuss Construction of Mc Person strut type suspension system for front wheels.
8. Explain the construction, principle of working of any one type of Power steering systems used in Automobile.
9.
 - a) Give a detail specification of tires and state the material in which the tires are manufactured.
 - b) Explain briefly the static and rolling properties of a pneumatic tire.