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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech.(AE) (2012 to 2017) (Sem.-4)
AUTOMOTIVE CHASSIS SYSTEMS
Subject Code : BTAE-401/302
M.Code : 72487

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**Write short notes on :**

1. Name the different chassis layout with respect to the drive.
2. Draw the block diagram showing camber.
3. Name any two types of front axle with their application.
4. What do you mean by non-slip differential?
5. What are the numbers of differentials used in a four-wheel drive?
6. Name any two commercial vehicles having multi drive axles in India.
7. The stopping distance of a car moving with a velocity V is 100 m, the coefficient of friction between the tire and the road is 0.2. Neglect air resistance. Find out the velocity V ?
8. What is the benefit of filling nitrogen in the tires?
9. Universal joint is used to connect types of shafts.
10. Suspension spring is made up of material.

SECTION-B

11. Describe the following components of front wheel geometry :
 - a) Castor
 - b) King pin inclination
 - c) Toe
12. Explain the construction details of rear axle housing.
13. Write a brief note on hydraulic and pneumatic brakes.
14. Write a short note on torque tube drive and radius rods.
15. Compare the front wheel and rear wheel drive with the suitable sketch.

SECTION-C

16. Explain the construction and working of Ackerman and Davis Steering System with suitable diagram. Also write its advantages.
17. Discuss the following in detail:
 - a) Shock absorbers
 - b) Double Wishbone independent suspension
18. Discuss the material of construction for tires along with their different structural patterns. Also discuss the tire wear patterns along with their causes.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.