VIT

Vellore Institute of Technology

SCHOOL OF MECHANICAL ENGINEERING

Continuous Assessment Test - I, August 2019

B.Tech (*Mechanical with Spl. in Automotive Engg.*), Fall Semester, 2019–20

Class Nbr: VL2019201001349

Course Code: MEE1036 **Slot:** D1+TD1

Course Name: Automotive Chassis **Max. Marks:** 50

Course Faculty: Dr.C.Kannan **Duration:** 90 Min

Answer ALL Questions (5 x 10 = 50 Marks)

1. With a neat sketch, explain the test procedure adopted in industries for assessing the bending strength of automotive frames.
2. Devise a suitable layout for a heavy commercial vehicle. Explicate your suggestion with its merits and demerits.
3. A truck has pivot pins 137 cm apart, the length of each track arm is 18 cm and the track rod behind the front axle is 110 cm long. Using a geometrical construction, determine the wheelbase, which will give true rolling for all wheels when the vehicle is turning so that inner wheel stub axle is 60° to the centreline of the vehicle. Also, determine the turning circle radius of all the four wheels.
4. With a neat sketch, explain the working of electric power-assisted steering. Also, enumerate its salient features over other types.
5. With schematics, explain the different steering geometry parameters and their influence on the vehicle handling characteristics.

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