



VIT

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SLOT: F2+TF2

REG. NO.:

SCHOOL OF MECHANICAL ENGINEERING
CONTINUOUS ASSESSMENT TEST - I
FALL SEMESTER 2025-2026

Programme Name & Branch	: B.Tech (Automotive Engineering - BMA)	
Course Code	: BMEE414L	
Course Name	: Vehicle Body and Aerodynamics Engineering	
Faculty Name(s)	: Dr. Y. Mukkamala	
Class Number(s)	: VL2025260103135	
Date of Examination	: August 22, 2025	
Exam Duration	: 90 minutes	Maximum Marks: 50

General instruction(s):

- Answer All Questions
- M - Max mark; CO - Course Outcome; BL - Blooms Taxonomy Level (1 - Remember, 2 - Understand, 3 - Apply, 4 - Analyse, 5 - Evaluate, 6 - Create)
- Course Outcome Statements:
 - CO 1: Acquire knowledge of the various design principles
 - CO 2: Describe the importance of materials selection for body and trim

Q. No	Question	M	CO	BL
1.	Outline the body design of a convertible (rollback roof) and apply relevant techniques to reduce wind buffeting in the open cockpit to improve fuel efficiency.	10	1 —	3 —
2.	Explain the significance of a driver's field of view (FOV) schematically. Apply the concept of Lidar-based vision to improve the driver's FOV.	10	1 —	3 —
3.	Sketch and explain the construction of a bus built on a tubular space-frame chassis. Compare it with a conventional ladder frame chassis and analyze its design strengths.	10	1 —	4 —
4.	List and analyze some lightweight composite materials and alloys used for bus manufacturing and outline the relevant construction techniques.	10	2 —	4 —
5.	Review the different types of van designs and evaluate their performance.	10	2 —	5 —
