

Printed Pages : 3



EAU-031

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 991031

Roll No.

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B. Tech.(SEM. VII) (ODD SEM.) THEORY
EXAMINATION, 2014-15**VEHICLE BODY ENGINEERING & SAFETY**

Time : 3 Hours]

[Total Marks : 100

- Note :**
- (1) Attempt **all** questions.
 - (2) Be precise in your answer.
 - (3) Draw neat and clean diagram where ever required.

SECTION - A

- 1** Attempt all questions : **(2×10=20)**
- (a) What do you understand by Cowl ?
 - (b) What do you mean by Blind Area ?
 - (c) Define vehicle Lift.
 - (d) What do you understand by Compatibility ?
 - (e) Explain the importance of Town Bus.
 - (f) What do you mean by Fascia ?
 - (g) Explain the importance of Vehicle Ergonomics.
 - (h) What do you understand by Bluff body ?
 - (i) What are the various source of vibration in vehicle body ?
 - (j) Define bridge vehicle body.

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SECTION - B

- 2 Attempt any **three** question : **(10×3=30)**
- (a) What is composite material ? Differentiate between FRP and GRP. Discuss the importance of thermoplastic in vehicle body construction.
 - (b) What do you mean by vehicle body mechanism ? Explain their importance in automobile. Also discuss the construction and working of window winding mechanism.
 - (c) What do you mean by Add on Device ? Explain its importance in automobile. How aerodynamics affects the stability of the vehicle ?
 - (d) What do you mean by Night Vision Technology ? Discuss the importance of Night Vision Technology in present scenario.
 - (e) What do you mean by Articulated Vehicle Body ? Explain the advantages of Articulated Bus Body over double decker bus body.

SECTION - C

- 3 Attempt all questions : **(10×5=50)**
- (a) What do you mean by sandwich panel construction ? Explain their salient feature that makes it suitable for automobile industry

OR

What design considerations are needed to develop a new vehicle ? Discuss the advantages of plywood over timber.

- (b) What do you understand by space optimization ? Discuss various methods of improving space in vehicle body with neat sketch.

OR

What do you understand by product life cycle ? Explain the importance of Vehicle Design and Development Process.

- (c) What is vehicle aerodynamic ? Explain different aerodynamic force acting on a vehicle body. How it affect the performance of vehicle ?

OR

What are the different sources of load in a vehicle ? How flow visualization methods are suitable tool for analyzing vehicle aerodynamic behavior ?

- (d) What is crashworthiness ? How it is affected the vehicle performance ? Explain crash testing Procedure in detail.

OR

“Vehicle Safety is the key factor in vehicle design and development stage”. Justify the statement with suitable example.

- (e) What do you mean by chassis frame ? Explain its functions. Differentiate between separate body construction and integral body construction.

OR

What do you understand by Tipper Body ? Also mention the stresses acting on tipper bodies. Explain the importance of Flat Platform Body in goods transport.