

**B.E DEGREE EXAMINATIONS: NOV/DEC 2014**

(Regulation 2009)

Seventh Semester

**AUTOMOBILE ENGINEERING**

AUE118: Vehicle Body Engineering

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. The example for SUV is
  - a) Honda City
  - b) Maruti 800
  - c) Hyundai i20
  - d) Tata Safari
2. As per visibility regulations, tinted glasses for windshields should allow
  - a) 50% visibility
  - b) 60% visibility
  - c) 70% visibility
  - d) 80% visibility
3. The disturbed air flow left behind the vehicle is called
  - a) Wake
  - b) Vortex
  - c) Roll
  - d) Boundary layer
4. The movement of the vehicle's nose either up or down is known as
  - a) Yaw
  - b) Roll
  - c) Pitch
  - d) Lock
5. Articulated bus is also called
  - a) Accordion bus
  - b) Mini bus
  - c) Split bus
  - d) Two level bus
6. If the body shell and underbody of bus are welded into single unit then it is called
  - a) Conventional
  - b) Semi-integral
  - c) Frameless
  - d) Chassisless
7. The optimal driver seat placement has a back incline of about
  - a) 10°
  - b) 20°
  - c) 30°
  - d) 40°

8. Heavy commercial vehicles have a Gross Vehicle Weight(GVW) of
  - a) Above 7.2 metric tonnes
  - b) Above 10.2 metric tonnes
  - c) Above 12.2 metric tonnes
  - d) Above 16.2 metric tonnes
9. The following is not a body trim item
  - a) Pin striping
  - b) Plastic bumper
  - c) Rear view mirror
  - d) Vinyl roof cover
10. The function of the primer is
  - a) To provide corrosion prevention
  - b) To remove rust
  - c) To remove oil and grease
  - d) To increase strength

**PART B (10 x 2 = 20 Marks)**

11. What is the function of Antilock Braking System?
12. What are the salient features of Limousine?
13. List the various aerodynamic forces.
14. Define aerodynamic drag coefficient.
15. What is double-decker bus?
16. What are advantages of van-derived minibus?
17. What is tipper body used for?
18. Differentiate normal control and forward control vehicles.
19. Why do we use laminated glass for windcreens of automobiles?
20. What is the necessity to paint the vehicle body?

**PART C (5 x 14 = 70 Marks)**

21. a) Explain in detail various requirements of car body.  
 (OR)  
 b) Describe various considerations while designing an automobile for safety.
22. a) What is meant by aerofoil? Explain the aerofoil theory with neat sketches. Also explain the various aerofoil shapes.  
 (OR)  
 b) Explain the construction and working of automotive wind tunnel with diagram.
23. a) Explain the design aspects of bus body construction. Also list the various metal sections used for bus body.

**(OR)**

b) How is bus body construction methods classified? Explain the types in detail.

24. a) List the various truck body types. Explain the constructional details of flat platform body with neat sketch.

**(OR)**

b) Explain the different types of driver's cabin for trucks. Also brief the consequences of poor choice of driver's cab and safety issues related to driver's cab.

25. a) Elaborate the process steps involved in modern automobile paint shops.

**(OR)**

b) Compare the features, merits and demerits of various materials used for automobile body construction.

\*\*\*\*\*