Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages : 02**

Total No. of Questions : 09

B.Tech.(AE) (2011 Onwards) (Sem.–6)
VEHICLE SAFETY ENGINEERING
Subject Code : BTAE-605
Paper ID : [A2384]

Time : 3 Hrs.   **Max. Marks : 60**

INSTRUCTION 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

1. **Answer briefly :**

   (a) What do you mean by crumple zone?

   (b) What is the full form of EBD?

   (c) Name the four types of active safety concepts.

   (d) Write the name of any three safety equipment.

   (e) What is the use of pedestrian collision detection system and where it is used?

   (f) Define vehicle body engineering.

   (g) Is there any difference between the pressure of front and rear wheels of a car?

   (h) What are the different limitations of central locking systems?

   (i) What are the various uses of air bags?

   (j) What are the different parameters which will decide the opening of air bags?

SECTION-B

2. Explain in detail different types of passive safety concepts.

3. A car is moving with a velocity of 50 m/sec. The coefficient of friction between the tyres and road is 0.5. What is the stopping distance?

4. Write short note on Electronic stability Programme.

5. Explain in detail the steering and mirror adjustments.

6. Explain in detail the central locking system.

SECTION-C

7. Define deceleration. Explain the deceleration of vehicle inside the passenger compartment with a suitable example while collision with movable obstacle.

8. Write short notes on :

    (a) Monocoque chassis construction.

    (b) Front and rear object detection systems.

9. Explain the use of safety belt with its regulation. Also explain the seat belt tightening system with its circuit diagram.