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Total No. of Questions: 09

Total No. of Pages: 02

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

Time: 03 Hrs.

Max. Marks: 60

INSTRUCTIONS 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. Write short notes on:
 - (a) Name any four types of active safeties for a car.
 - (b) What is the full form of ESP?
 - (c) What are the different possible positions of the engine?
 - (d) Give any example for a vehicle with rain sensor system.
 - (e) What do you mean by pedestrian detection system?
 - (f) Name any four convenience systems in the car.
 - (g) What are the different parameters which will decide the opening of air bags?
 - (h) Which factors affect the tyre pressure control system?
 - (i) What are the limitations of safety sandwich construction?
 - (j) What do you mean by crumple zone?

SECTION B

2. Explain in detail the Central locking systems.
3. Explain in detail tilt-able steering wheel.
4. Explain with circuit diagram the activation system for air bags.
5. The coefficient of friction between the tires of a car and the road is 0.25. The driver applied the brakes and car stopping distance is 5 m. What is the velocity of the car?
6. Explain the different causes of rear end collision.

SECTION C

7. Write short notes on:
 - (a) Electronic Brake force Distribution
 - (b) Garage door opening system
8. Explain all type of active and passive safety concepts.
9. Define deceleration? Explain the deceleration of vehicle inside the passenger compartment with a suitable example while collision with stationary obstacle.