

Code No: **R164224A**

R16

Set No. 1

IV B.Tech II Semester Regular Examinations, September - 2020

AUTOMOTIVE SAFETY

(Automobile Engineering)

Time: 3 hours

Max. Marks: 70

Question paper consists of Part-A and Part-B

Answer ALL sub questions from Part-A

Answer any FOUR questions from Part-B

PART-A (14 Marks)

1. a) Explain the importance of passenger comfort in automobile. [3]
- b) What is plastic collapse? Give example. [2]
- c) What is collapsible steering system? [2]
- d) Discuss the causes for rear end collision. [2]
- e) Discuss the reasons for implementation of tyre pressure monitoring system in automobile. [3]
- f) Write about characteristic of Telematics. [2]

PART-B (4x14 = 56 Marks)

2. a) What is Crumple Zone? Explain how crumple zone helps in increasing the safety of an automobile. [7]
- b) What are the conditions to be followed to obtain safety sandwich construction? Discuss each one of them? [7]
3. a) With a neat sketch explain the vibration behaviour of vehicle body. [7]
- b) Explain the forces encountered by an automobile when it experiences roll over and head on impact. [7]
4. a) Briefly explain active and passive safety systems in automobile. [7]
- b) Explain the necessity and importance of Anti locking braking system. Explain the working of ABS system. [7]
5. a) Explain about Object detection system with braking system interaction. [7]
- b) What are the important objectives of collision warning system? Explain. [7]
6. a) Explain the reasons for preferring Central Locking System over General Locking System? [7]
- b) Explain about automatic climate control system. [7]
7. Discuss about the following [14]
 - i) Vehicle support system
 - ii) Automotive vision system
 - iii) Navigation system