Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

VII SEMESTER B.TECH. (AUTOMOBILE ENGINEERING)

END SEMESTER EXAMINATIONS, NOV/DEC 2017

SUBJECT: VEHICLE BODY ENGINEERING AND SAFETY [AAE -4033]

REVISED CREDIT SYSTEM

(30/12/2017)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL** the questions.
- Missing data may be suitable assumed.

1A. Explain the existing links between engineering activities and corresponding informatics tools. **(04)**

1B. List and explain different archetypes for joining the roof with body sides, depending on the door archetypes that can be matched. **(03)**

1C. Mention different checks which can be performed directly within the digital mock-up environment. **(03)**

2A. Write the characteristic specifications of commercial vehicle. **(02)**

2B. Explain the Airborne noise passing through **(04)**

- weather strips and roof,
- door sheets and door glasses and
- through sheet fastened flanges.

2C. Explain different archetypes of front frame connections with compartment frame. **(04)**

3A. Mention the ways to achieve modularity in commercial vehicle. **(04)**

3B. What are the parametric properties of typical crash-box? **(04)**

3C. List the different types of window run channel. **(02)**

4A. What are the main components of non-structural cockpit. **(02)**

4B. Explain the significance of a demister vent positioned on the front A-pillar. **(05)**

4C. Enumerate the advantages of butterfly lumbar support in seats. **(03)**

5A. Explain the three-dimensional manikin as prescribed by European standard to find the position of the H-point and torso inclination relative to the vertical of the driver's seat. **(03)**

5B. Explain the procedure to be followed on test bench to investigate the postural seating comfort. **(04)**

5C. What are the hints to be considered while evaluating position of the steering wheel? **(03)**