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**MANIPAL INSTITUTE OF TECHNOLOGY**  
**MANIPAL**

*A Constituent Institution of Manipal University*

**V SEMESTER B.TECH. (AUTOMOBILE ENGINEERING)**

**END SEMESTER EXAMINATIONS, NOV/DEC 2016**

**SUBJECT: ERGONOMICS IN AUTOMOTIVE DESIGN PE-II [AAE 4026]**

**REVISED CREDIT SYSTEM  
 (07/01/2017)**

Time: 3 Hours

MAX. MARKS: 50

**Instructions to Candidates:**

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

- 1A.** What is ergonomics? Write the objectives of ergonomics in vehicle design. **(05)**
- 1B.** What is CTD? What causes CTD? **(02)**
- 1C.** Briefly explain the “third class of lever systems” used to find the strength on mussels. **(03)**
- 2A.** Briefly explain the, AHP, Pedal plane angle, pedal reference point and SgRP. **(04)**
- 2B.** What is couple distance? **(02)**
- 2C.** Explain the Human eye view distribution for 35 degree considered for control or display visibility. **(02)**
- 2D.** List the different types of automotive vehicle doors. **(02)**
- 3A.** What is HUD? List its advantages and disadvantages. **(05)**
- 3B.** Explain the flowing displays **(05)**
  - a). static versus dynamic display b). Quantitative versus Qualitative
  - c). symbolic versus pictorial d). Dedicated versus programmable e). Head down and head up displays.
- 4A.** What is filed of views? List and explain its types. **(03)**
- 4B.** Briefly explain the “obstruction caused by A- pillar”. List the obstruction related issues. **(03)**
- 4C.** Explain the inside and outside mirror location and its design consideration. **(04)**

- 5A.** Discuss the different methods adopted to evaluate the entry and exit for passenger vehicles. **(05)**
- 5B.** What is running board? With a neat sketch explain its design. **(05)**