

EIGHTH SEMESTER B.TECH DEGREE EXAMINATION  
(2013 Scheme)  
ELECTIVE V  
**13.806.6 HUMAN FACTORS IN ENGINEERING (N)**  
MODEL QUESTION PAPER

Time: 3 hours

Maximum marks: 100

**PART-A**

*Answer **all** questions. **Each** question carries 2 marks*

1. Illustrate HTS with a block diagram.
2. What is SDT? Give its outcomes.
3. State Hick-Hyman law. Why is it relevant?
4. Explain the outcomes in signal detection theory.
5. What is visual acuity? How it can be measured?
6. Explain the concept of work space envelopes.
7. Define luminance and reflectance of a surface.
8. Relate C/R ratio and movement time with a relevant sketch.
9. Define virtual reality and give one of its applications.
10. What is motion sickness? Give its symptoms.

**PART-B**

*Answer **one full** question from **each** module. **Each** question carries **20** marks.*

**MODULE-I**

11. a) Define HTS. Explain the classification of HTS with suitable examples.  
b) What do you mean by multidisciplinary Engineering approach in HFE? Explain.
12. a) Explain the stages of human system design and development.  
b) Discuss the levels of human system modeling with suitable examples.

**MODULE-II**

13. a) Illustrate and explain the model of human information processing.  
b) Classify different types of attention tasks and enlist the relevant guidelines.
14. a) Discuss the process of muscle metabolism in human beings during work.  
b) Narrate the compatibility relationships in display and controls.

**MODULE-III**

15. a) Discuss the application of anthropometric data in design.  
b) Detail the principles of seat design with relevant sketches.
16. a) Enlist and explain the principles of workplace arrangement.  
b) What are the interpersonal aspects of workplace design? Explain.

**MODULE-IV**

17. a) Compare and contrast heat stress and cold stress.  
b) Explain steps needed for ergonomic approach to design.
18. a) Explain human error classification schemes with examples.  
b) Explain ergonomic health and safety guidelines as per OSHA.