

Code No: RT42353B

**R13****Set No. 1**

IV B.Tech II Semester Regular/Supplementary Examinations, April/May- 2019

**HUMAN ENGINEERING AND SAFETY**

(Agricultural 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 THREE questions from Part-B*

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**PART-A (22 Marks)**

1. a) What are examples of human factors? [4]  
b) What are the main functions of the skeletal systems? [3]  
c) Differentiate between static and dynamic works. [3]  
d) What is an audio warning cue? [4]  
e) How do we measure sound waves? [4]  
f) Explain about the Workmen compensation. [4]

**PART-B (3x16 = 48 Marks)**

2. a) What is the importance of FMJ? Explain the study of human machine model [8]  
b) Discuss the design of workspace for standing and seated workers. [8]
3. a) What are the types of muscle fatigue? Explain the factors influencing the work posture. [8]  
b) What is the significance of cardio vascular system and respiratory system in physical work handling? [8]
4. a) What is meant by physical work capacity? List the factors affecting the work capacity. [8]  
b) How do you calculate the rest periods in manual work? [8]
5. a) What is the significance of vision measures taken for the protection of the vision? [8]  
b) What are some good color combinations? Write the guide lines for using colour combinations. [8]
6. a) Explain the damages due to noise. What are the preventive measures are taken? [8]  
b) Name two agricultural Air Pollutants and their effects on the Lungs. What Precautionary measures you advise to the farmers? [8]
7. a) What are the types of memory storage? Explain. [8]  
b) What are the tools used for agriculture? Discuss the design of hand tools for agricultural operation. [8]