

**III B.Tech II Semester Supplementary Examinations,  
November/December 2005  
ERGONOMICS  
(Bio-Medical Engineering)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions  
All Questions carry equal marks**

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1. Define process control. Give an account of design of models. [16]
2. Draw out a design of computer room, their requirements. Compare and contrast between a computer operator and a typist. [16]
3. Draw a layout for an auditorium for 100 people keeping in mind
  - (a) Comfort
  - (b) Acoustics
  - (c) Visibility [16]
4. (a) Explain the principle of VENTILATOR  
(b) How it is useful in saving the life of a patient. [16]
5. Describe in detail the factors required for a space craft. [16]
6. (a) Define LITHOTRIPSY >  
(b) Describe how it is used in treatment humans. [16]
7. Present the case study of wheel chair. [16]
8. Write the case study of control room layout with a neat sketch. [16]

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1. What is a Transducer. Classify , types of Transducers and describe how they are useful to humans in day to day life. [16]
2. Draw out a design of computer room, their requirements. Compare and contrast between a computer operator and a typist. [16]
3. Give a design for cinema hall bearing in mind the comfort factor in all aspects audience. [16]
4. (a) What is a simulator? How is it useful in training?  
(b) Draw a sketch of placement of seating equipment [16]
5. (a) How do you prove that there is electrical activity in human beings  
(b) Describe Electrocardiogram and how is helpful to a doctor. [16]
6. How do you identify people whose growth of body is less than normal or above normal ? [16]
7. Design an operation table with accessories like monitor, spotlight and air conditioning. [16]
8. Write the case study of control room layout with a neat sketch. [16]

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1. What is a Transducer. Classify , types of Transducers and describe how they are useful to humans in day to day life. [16]
2. (a) Design a paraplegic (loss of movements in legs) to reach his work place from home.  
(b) Movement at home [16]
3. Give a design for cinema hall bearing in mind the comfort factor in all aspects audience. [16]
4. (a) What is audiometry ?  
(b) How do we judge the levels of hearing in defective hearing? [16]
5. (a) How do you prove that there is electrical activity in human beings  
(b) Describe Electrocardiogram and how is helpful to a doctor. [16]
6. (a) How do you explain tremors in hands ?  
(b) List out the types of tremors in hands  
(c) What mechanical apparatus will suit the worker with tremors ? [16]
7. Draw a sketch of dental chair keeping in mind the instruments like scaler,washer,driller,x-ray equipment etc.,, [16]
8. Design the cock pit with a neat diagram. [16]

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1. What is a Transducer. Classify , types of Transducers and describe how they are useful to humans in day to day life. [16]
2. A fire station receives a call of fire accident from sixty kilometers away to extinguish fire at fifth floor in a complex. Answer the following.
  - a. How does the fire fighting equipment reach?
  - b. What type of dress should a fireman wear to prevent burns.
  - c. How the fireman reach the place of fire. [16]
3. (a) What do you understand by acoustics ?  
(b) Design equipment to have a pleasant hearing to the audience of one thousand people in an indoor auditorium [16]
4. (a) What is audiometry ?  
(b) How do we judge the levels of hearing in defective hearing? [16]
5. Describe in detail the factors required for a space craft. [16]
6. (a) Define anthropometry  
(b) What anthropometric measurements you would take to measure a persons strength . [16]
7. Design an operation table with accessories like monitor, spotlight and air conditioning. [16]
8. Write the case study of control room layout with a neat sketch. [16]

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