

**B.Tech. – VIEP – MECHANICAL ENGINEERING
(BTMEVI)**

Term-End Examination

December, 2016

BIMEE-018 : INDUSTRIAL ERGONOMICS

Time : 3 hours

Maximum Marks : 70

Note : Answer any five questions. All questions carry equal marks.

1. (a) Discuss the various factors on which the capability of the muscles to exert maximum force depend. 7
- (b) Describe the importance of job design in case of repetitive nature of job. 7
2. (a) Explain the following terms related to human visual system : 7
 - (i) Adaptation of Retina
 - (ii) Accommodation
 - (iii) Visual Capacity
- (b) Discuss the various devices that can be used to protect the workers from the ill-effects of noise. 7

3. (a) What is a reliability task ? Discuss the factors that adversely affect this task. 7
- (b) Discuss the causes of a slipped disc problem. Suggest some remedies for this problem. 7
4. (a) Describe the Ergonomic design of Visual Display Terminal (VDT). 7
- (b) Discuss the importance of anthropometry in Ergonomics. 7
5. (a) Define illumination. Discuss the effect of illumination on human performance. 7
- (b) Describe the procedure to design the ergonomic system to reduce the physical stress/load on the workers. Give suitable example. 7
6. (a) Illustrate the physiological requirements of artificial lighting with the help of examples. 7
- (b) Discuss the factors on which vibration depends. Describe various types of vibration effects on human body. 7

7. Write short notes on any *two* of the following : 7+7

- (a) Daylight, Colours and Music for Pleasant Work Environment
 - (b) Thermo-regulation in Human Body
 - (c) Comfortable Working Postures
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