

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

00676

Term-End Examination

June, 2015

BIMEE-018 : INDUSTRIAL ERGONOMICS

Time : 3 hours

Maximum Marks : 70

Note : Answer any *five* questions. Each question carries equal marks.

1. (a) Define ergonomics. Explain its various objectives and scope. 7
- (b) How does ergonomics help to analyse man-machine system ? How does this study improve the work station layout ? Discuss. 7
2. (a) Discuss the various factors on which the capability of the muscles to exert maximum force depend. 7
- (b) Explain the rules to be followed to exert maximum power when sitting at work. 7
3. (a) What do you mean by anthropometry ? Explain the principles used in the application of anthropometric data. 7

- (b) Explain the various methods used for assessment of energy consumption of the workers during heavy work. 7
4. (a) What is a slipped disc problem ? What are its causes and remedies ? Elaborate. 7
- (b) Why does job design in case of a monotonous task become an important issue ? Explain. 7
5. (a) Describe the ergonomic principles related to the arrangement and design of displays and controls. 7
- (b) Explain the system of measurement of light. Discuss the effect of light intensity on work performance. 7
6. (a) Describe the various physiological effects of noise on workers' health. 7
- (b) What is a readability task ? Discuss the factors that adversely affect this task. 7
7. Write short notes on any *two* of the following : 2×7=14
- (a) Design of tools and equipments for skilled work
- (b) Bio-mechanical models of lower work
- (c) Lighting requirements for VDT offices
- (d) Indoor air quality