

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

00456

**Term-End Examination
June, 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 factors responsible for developing back troubles among the industrial workers. 7
- (b) What do you understand by 'Occupational Ergonomics'? Explain its role in improving productivity of the system. 7
2. (a) Define Ergonomics. Discuss various objectives and scope of Ergonomics. 7
- (b) In the context of physiological principles, describe the term 'Optimal use of muscle strength' with examples. 7
3. (a) Discuss the importance of anthropometry in ergonomics. 7
- (b) Explain the factors influencing the ability to work in hot and humid environment. 7

4. (a) Describe the physiological requirements of artificial lighting with the help of examples. 7
- (b) Explain the ergonomics principles related to the arrangement and design of displays and controls. 7
5. (a) Explain the following terms with reference to risk involved in industrial tasks particularly for industrial workers : 7
- (i) Disc Pressure
- (ii) Intervertebral Disc
- (b) State and describe the factors of the thermal work environment that affect the human performance. 7
6. (a) Describe the physiological and psychological effects of noise with the help of examples. 7
- (b) Explain the perception of Job design for monotonous tasks with reference to man-machine system. 7
7. Write short notes on any *two* of the following : 7+7=14
- (a) Design of Tools and Equipments for Skilled Work
- (b) Reach and Clearance Dimensions
- (c) Air Pollution and Ventilation