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

Term-End Examination

June, 2014

BIMEE-018 : INDUSTRIAL ERGONOMICS

Time : 3 hours

Maximum Marks : 70

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

1. (a) Define ergonomics. Discuss the importance of occupational ergonomics as used in our day to day working. 7
- (b) In context of physiological principles describe the term, "optimal use of muscle strength" with examples. 7
2. (a) Discuss control selection guidelines in context of arrangement and design of control and displays. 7
- (b) Describe the importance of Job design in case of monotonous task. 7
3. (a) Discuss the importance of anthropometry in ergonomics. 6
- (b) Describe the procedure to design the ergonomic system to reduce the physical stress/load on the workers. Give suitable example. 8

4. (a) Discuss the ergonomic design of loading and unloading system to reduce physical stress on the back of the worker. 7
- (b) Discuss the factors influencing the ability to work in the hot environment. 7
5. (a) Define the following terms in case of light vehicle related studies : 7
- (i) Visual capacities
- (ii) Reflectance
- (iii) Luminance contrast
- (iv) Glare
- (b) Describe the physiological requirements of artificial lighting with the help of examples. 7
6. Describe the design of Visual Display Terminal (VDT) of CAD work station. Give examples. 14
7. Write short notes on **any two** of the following : 14
- (a) Thermo-regulation in human-body.
- (b) Vibration of machines and its effect on performance of human being.
- (c) Light for fine work and for VDT offices.
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