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**BIMEE-018**

**B. TECH. VIEP-MECHANICAL  
ENGINEERING (BTMEVI)**

**Term-End Examination**

**June, 2019**

**BIMEE-018 : INDUSTRIAL ERGONOMICS**

*Time : 3 Hours*

*Maximum Marks : 70*

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

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1. (a) How do ergonomics help to improve a system's performance ? Explain. 7
- (b) What do you understand by 'occupational ergonomics' ? Explain its role in improving productivity of the system. 7
2. (a) How does ergonomics help to analyse the man-machine system. Discuss how this study improves the workstation layout. 7
- (b) Explain the factors influencing the ability to work in hot and humid environment. 7

(A-36) P. T. O.

3. (a) Explain the various methods as used for assessment of energy consumption of the workers during heavy work. 7
- (b) Discuss the importance of anthropometry in ergonomics with the help of examples. 7
4. (a) Describe the physiological requirements of artificial lighting with the help of examples. 7
- (b) Discuss the factors on which vibration depends. Describe the effect of various types of vibration on human body. 7
5. (a) Describe the ergonomic principles as related to the arrangement and design of displays and controls. 7
- (b) Explain slip disc problem. Discuss its causes and remedies. 7
6. (a) Describe the various physiological effects of noise on worker's health. 7
- (b) Explain how loading and unloading systems can be designed to reduce physical stress on the backs of workers. 7

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

$3\frac{1}{2}$  each

- (a) Indoor Air quality
- (b) Thermo-regulation in human body
- (c) Muscular fatigue
- (d) Design and functions of controls
- (e) Comfortable working postures
- (f) Work-station design