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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

September / October 2023 Supplementary Examinations

Programme: B.E.

Branch: Institutional Elective

Course Code: 19ML6OE1ER

Course: Ergonomics

Semester: VI

Duration: 3 hrs.

Max Marks: 100

Date: 25.09.2023

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

- 1 a) With suitable diagrams, explain the anatomy of the spine and pelvis related to the posture. **10**
b) Discuss the principles of applied anthropometry in ergonomics **10**

UNIT - II

- 2 a) Summarize on workspace design faults that increase postural stress in standing workers. **10**
b) Discuss the anatomy and physiology of standing. **10**

OR

- 3 a) List and explain the factors that influence working posture. **07**
b) Discuss the key elements of Armstrong model of the development of work related upper body musculoskeletal disorders. **06**
c) Discuss methods of reducing shoulder stress. **07**

UNIT - III

- 4 a) Interpret the steps leading to the contraction of skeletal muscle. **05**
b) Compare and Contrast the static and dynamic work. **05**
c) Define "Heat illnesses" and narrate on the same with the conditions that can arise when the body is unable to cope with thermoregulatory challenges. **10**

UNIT - IV

- 5 a) Elaborate on the factors to be considered for visual comfort and to meet visual demands in the design of lighting. **10**
b) Define the term Vibration. Discuss Health effects of vibration exposure **10**

OR

- 6 a) Discuss the various guidelines for the visual design of VDU tasks. **10**

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

- b) List the basic steps in the management of industrial noise exposure. **05**
- c) Discuss the characteristics of reverberation in rooms. **05**

UNIT - V

- 7 a) Elaborate on Implementation modes for human–computer interaction. **10**
- b) Define task analysis. Explain the procedure for carrying out a task analysis. **10**

SUPPLEMENTARY EXAMS 2023