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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

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|---|--|----|
| 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

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|---|--|----|
| 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

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|---|---|----|
| 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

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|---|---|----|
| 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