

M.E. First Semester (Mechanical Engg. (Adv. Manu. & Mech. Sys. Desig.)) (New-CGS)
13466 : Elective-I : Ergonomics of Manufacturing : 1 MMD 5

P. Pages : 1

Time : Three Hours



AW - 3826

Max. Marks : 80

- Notes :
1. Answer **three** question from Section A and **three** question from Section B.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Illustrate your answer necessary with the help of neat sketches.

SECTION - A

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| 1. | What is ergonomics? Explain in brief the early and current developments and scope of ergonomics. | 13 |
| 2. | a) What is human reaction time (RT)? Explain the relationship between reaction time and Entropy using Hick's law. | 6 |
| | b) Explain the human information processing cycle. | 7 |
| 3. | What are the various work postures? How a suitable posture is selected for different tasks? | 13 |
| 4. | a) What is anthropometry and how is it applied in design? | 7 |
| | b) How physical workload and heat stress is measured at a workplace. | 7 |
| 5. | a) Explain the various parameters considered for design of work surface. | 7 |
| | b) What are standard guidelines for design of static work. | 6 |

SECTION - B

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| 6. | Explain in brief the principles for design of visual displays. | 14 |
| 7. | a) Explain design features of symbols, labels and controls. | 6 |
| | b) Discuss the different techniques of coding the controls. | 7 |
| 8. | Explain in brief the four steps of design for maintainability. | 13 |
| 9. | a) Discuss the various issues related to health of a worker that may arise when the environment of workplace is too cold. | 7 |
| | b) Explain the design of acoustic environment. | 6 |
| 10. | a) Explain in brief the various design considerations in lighting of the workspace. | 9 |
| | b) How improper lighting system at the workplace can lead to depression of the worker? | 4 |
