

Total No. of Questions : 12]

SEAT No. :

P1082

[4659] - 158

[Total No. of Pages : 2

B.E. (Production/ Sandwich Engineering)

**a: ERGONOMICS AND HUMAN FACTORS IN ENGINEERING
(2008 Pattern) (Semester - I) (Elective - II)**

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answers to the two sections should be written in separate answer books.*
- 2) *Answer any three questions from each section.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Figures to the right side indicate full marks.*
- 5) *Use of calculator is allowed.*
- 6) *Assume suitable data if necessary.*

SECTION - I

- Q1)** a) What is the concept of strength and endurance from a MMH task design approach? [10]
- b) Explain characteristics of human machine systems. [8]

OR

- Q2)** a) Explain the basis of ergonomics problem identification. [8]
- b) What is biomechanics? Explain in brief. [6]
- c) Describe work rest cycle in brief. [4]

- Q3)** a) Differentiate between static dimensions and dynamic dimensions. [8]
- b) Describe how workspace envelope is for seated personnel. [8]

OR

- Q4)** a) Discuss in brief mirror image arrangements. [8]
- b) Discuss any four principles of arranging components in physical space. [8]

P.T.O.

- Q5) a)** Discuss the concept of visibility in detail. [8]
b) Discuss factors affecting design of foot controls. [8]

OR

- Q6) a)** What is C/R Ratio? How to decide optimum C/R ratio? [8]
b) Explain in brief the concept of learning curves. [8]

SECTION - II

- Q7) a)** Discuss the color system in details with neat sketch. [9]
b) Discuss control along the path and control along receiver for noise exposure. [9]

OR

- Q8) a)** Discuss any three operative temperature indices. [9]
b) Discuss physiological effect of heat and cold on performance. [9]

- Q9) a)** Write a note on ergonomic safety and health management. [8]
b) What do you mean by interface design? What data is applicable in such situations. [8]

OR

- Q10) a)** Discuss in brief characteristics of system design. [8]
b) Discuss a case in which you have come across application of human factors engineering? [8]

- Q11) a)** Explain MTA in detail. [12]
b) Explain the Reach element used in MTM-1? What are its classes? [4]

OR

- Q12) a)** Explain MOST and its types in brief. [8]
b) Write a note on Mento Factor System in brief. [8]

