

Roll No.

Total Pages : 3

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May, 2019

M.Tech. - I SEMESTER

Method Engineering & Ergonomics (MME-117-2)

Time : 3 Hours]

[Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART-A

1. (a) What is the purpose of micro-motion analysis? (1.5)
(b) What is chrono-cyclegraph analysis technique? (1.5)
(c) State any three therbligs. (1.5)
(d) What is work sampling? (1.5)
(e) How labour productivity is calculated? (1.5)
(f) Enlist physical characteristics of human that should be considered in ergonomics. (1.5)

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- (g) By what means human body can rid itself of heat? (1.5)
- (h) What is control-response ratio? (1.5)
- (i) What is the reason of hearing loss? (1.5)
- (j) What are thermal zones of comfort for human? (1.5)

PART-B

- 2. (a) Explain the importance of productivity measures in any organization. Discuss the different productivity enhancement tools used by the organizations in the present competitive scenario. (7.5)
- (b) Bring out the factors affecting work measurement. Also highlight the merits and demerits of work measurement with examples. (7.5)
- 3. (a) Define ergonomics. What role does it play in job design? Illustrate with examples. (7.5)
- (b) Discuss the criterion of selecting the seat height of operators with respect to work surface height. (7.5)
- 4. (a) Define ergonomics. What role does it play in job design? Illustrate with examples. (7.5)
- (b) Discuss the criterion of selecting the seat height of operators with respect to work surface height. (7.5)

- 5. (a) Discuss the various effects of heat on body and work performance. (7.5)
- (b) What is meant by the term noise? Discuss the physiological effects of noise. (7.5)
- 6. (a) Discuss the heat exchange process of human body with the environment? (7.5)
- (b) What remedial measures you will suggest to provide the thermal comfort in the working areas? (7.5)
- 7. Write short notes on the following:
 - (a) Methods Time Measurement (MTM). (5)
 - (b) Characteristics of man machine system. (5)
 - (c) SIMO charts. (5)