

Roll No.

Repeat

Total No. of Questions : 09]

[Total No. of Pages : 02

Paper ID [DE021]

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Sem. - 6th/8th)

INDUSTRIAL ENGINEERING (DE/PE - 2.1)

Time : 03 Hours

Maximum Marks : 60

Instruction to Candidates:

MAY 2008

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- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

Section - A

Q1) (10 × 2 = 20)

- a) What are the qualities industrial engineer should possess?
- b) "Materials handling does not add value to the product but adds to the cost". Comment.
- c) Write down the various types of symbols used in therbligs.
- d) What are the objectives of value engineering?
- e) Define time study.
- f) Write the difference between product layout and process layout.
- g) Differentiate between cyclegraph and chronocyclegraph.
- h) What are the different types of principles of motion study?
- i) What are the objectives of material handling?
- j) Define standard time and give its applications.

Section - B

(4 × 5 = 20)

Q2) Explain value analysis and value management.

Q3) Describe various stages of method study. Also make a left and right hand operation chart for filling ink in a fountain pen.

- Q4) Give the list of various advantages of using PMTS systems over the ordinary time study.
- Q5) Explain man - machine system and its characteristics. How can you say if the fit is poor or good? Explain.
- Q6) Explain human aspects of work - study.

Section - C

(2 × 10 = 20)

- Q7) Explain the terms job enrichment, job enlargement and job rotation.
- Q8) (a) A work sampling study was conducted for 100 hours in the machine shop in order to estimate the standard time. The total numbers of observations recorded were 2500. No working activity could be noticed for 400 observations. The ratio between manual and machine elements was 2:1. Average rating factor was estimated as 1.15 and the total number of articles produced during the study period were 6000.
Rest and personal allowances may be taken as 12% of the normal time. Compute the standard time in minutes.
- (b) What is the use of line balancing? Give example.
- Q9) Write short notes on :
- (a) Influence of air humidity.
 - (b) Climate toxicology.
 - (c) Heat stresses/cold stresses.
- Explain the above with suitable examples.