

GUJARAT UNIVERSITY
B.E. Sem. VII (Mech.) (New) Examination
Workstudy (E.P.-I)

Thursday, 3rd January, 2008]

[Time : 3 Hours
Max. Marks : 100

- Instructions :** (1) Attempt all questions.
(2) Answer to the two sections must be written in separate answer books.
(3) Assume suitable data if require.
(4) Figures to the right indicate full marks.

SECTION I

- 1 (a) Describe relationship with "work study" and "Productivity". 16
(b) State the reasons of low productivity.
(c) Describe how productivity can be increased.

OR

- 1 (a) What is 'Therbligs'? Enlist different therbligs and discuss any four in detail. 16
(b) State the importance of Film analysis and explain about SIMO chart.
- 2 (a) Describe the following steps to undertake method study. 16
(i) Selection (ii) Critical Examination.
(b) Describe the principles of 'Motion Economy' related to human body, workplace and equipments used in manufacturing.

OR

- 2 Draw following charts with suitable example and state how it can be improved. 16
(i) Operations processess chart
(ii) Flow process chart
(iii) Left hand and Right Hand chart.
- 3 Write short notes (attempt any three) : 18
(a) Factors affecting productivity
(b) Multiple Activity chart
(c) Cyclograph and chronocyclgrap
(d) Travel chart
(e) Scope of workstudy in Industries.

P. T. O.

SECTION II

- 4 (a) State importance of Rating in Time study and discuss the effect of overrating and under rating during performance Rating technique.
(b) Explain continuous and snap back method of calculating elemental time in time study.

OR

- 4 (a) Describe work sampling and state its advantages.
(d) Discuss about PMTS technique briefly.

- 5 (a) Define :

(i) Standard Time (ii) Selected time (iii) Normal Time.

- (b) The process of manufacturing of a job is divided in to five elements and time for each elements is 0.5, 0.8, 1.2, 0.6, 1.0 minutes respectively and the rating factor for each element is 100%. Calculate the normal time and standard time for each element and the Job. The personal allowance and relaxation allowance are considered as 5% and 10%, respectively.

Also calculate the requirement of operators to produce 600 units per day, assume only one shift per day of eight hours.

OR

- 5 (a) Discuss about allowances considered for work measurements.
(b) Define following terms : (i) Wages (ii) Incentives.
(c) State the importance of ergonomics.
- 6 Write short notes Attempt any **three** :
- (a) Wage Incentive Plans.
(b) Skill and effort rating system
(c) Synthetic rating systems
(d) Average and Qualified workers.
(e) MTM.
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