

GUJARAT TECHNOLOGICAL UNIVERSITY
B. E. - SEMESTER – VII • EXAMINATION – WINTER 2012

Subject code: 172502**Date: 31/12/2012****Subject Name: Productivity Improvement Method****Time: 10.30 am - 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Define and discuss the concept of productivity. Express your views how productivity is connected to standard of living? **07**
(b) Considering a case explain the process of Reengineering any business function. **07**

- Q.2** (a) Describe in brief the 'Economic Aspect of Maintenance'. How would you select an optimum maintenance program? **07**
(b) State and explain in brief the various allowances are to be considered while estimating the standard time. **07**

OR

- (b) Explain briefly the concept of work sampling with suitable example. **07**

- Q.3** (a) Discuss in details with definition and suitable illustration "Man Machine Chart". **07**
(b) Name the various methods of wage payment and describe any two of them with their advantages and limitations. **07**

OR

- Q.3** (a) Explain any two group incentive plans with suitable example. **07**
(b) State the meaning and use of 'Therblig'. Sketch any six Therblig with symbols with their meaning and application. **07**

- Q.4** (a) The following estimates of operation times spent on different processes used in manufacturing of a component have been obtained: **07**

- (i) Loading piece into the machine: 0.20 minutes
- (ii) Starting the machine: 0.10 minutes
- (iii) Running time of the machine at the end of which it stop automatically: 4.00 minutes
- (iv) Unloading piece from the machine: 0.10 minutes
- (v) Cleaning the piece with a brush: 0.10 minutes
- (vi) Inspection the component: 0.30 minutes
- (vii) Packing it in box: 0.20 minutes.

Draw the man and machine chart. Calculate the work cycle time and the percentage of machine and operator utilization.

- (b) How does corrective maintenance differ from productive maintenance? **07**
What is the relationship between the two?

OR

Q.4 (a) The elemental data on power hacksaw is as under:

07

Element	Observed Time (min)	Rating	Frequency	Relaxation allowance (%)
1. Loosen vice	0.15	80	1	12
2. Set part length	0.06	100	1	15
3. Tighten vice	0.12	100	1	11
4. Switch on Machine	0.05	80	1	11
5. Set saw to work	0.08	100	1	11
6. saw off	8.00	100	1	5
7. Raise saw into clear	0.10	90	1	15
8. Switch off machine	0.05	80	1	11
9. Keep the part aside	0.08	75	1	13
10. Bar changing time	10.00	80	1/50	13
11. Change dull saw	6.00	100	1/500	13

Calculate the work content of each element of the job. Also calculate the standard time for the job if contingency allowance is 2%.

Q.4 (b) Explain the concept of BPR. Express your views regarding appropriateness considering BPR as a tool for Productivity improvement.

07

Q.5 (a) Describe the effect of following on productivity:

07

(i) Work condition, (ii) Plant layout, (iii) Tolerance and specification and (iv) Design of part.

(b) Write a short note on “Man Machine system”.

07

OR

Q.5 (a) Discuss the role of work systems in an organization.

07

(b) “Critical examination is motive force to develop new method”, discuss.

04

(c) Give comparison of Predetermined Elemental Time Standards.

03
