

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**
