## **GUJARAT TECHNOLOGICAL UNIVERSITY** BE - SEMESTER-VII • EXAMINATION – WINTER 2013

bject	Code: 172502 Date: 05-12-201	3
bject ne: 1 tructio	i Name: Productivity Improvement Methods 10:30 TO 01:00 Total Marks: 7 ons:	0
1. 2. 3.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
(a)	Enlist the factors influencing productivity. Explain how each factor will affect	07
(b)	Mention the tools to reduce the excess work content. Explain any two tools in brief.	07
(a)	Explain the need of incentive schemes for proper implementation of	07
(b)	<ul> <li>productivity changes.</li> <li>Why must the following be carried out concurrently ?</li> <li>(i) Selection of handling equipment</li> <li>(ii) Location of work station, and</li> <li>(iii) Arrangement of facilities within work station.</li> </ul>	07
(b)	ORThe following data is available for a machine in a manufacturing unit.# No. of hours worked per day	07
<b>(a)</b>	What is the difference between product layout and a process layout? Under what conditions would each be adopted?	07
<b>(b)</b>	Explain in brief, 'Critical Examination' as applied to work study.	07
(a)	Describe an operation process chart in terms of the information it contains. What is the function of the chart in the development of departmental	07
(b)	Explain the significance of principles of motion economy and state the principles of motion economy related to use of human body.	07
(a) (b)	A machinist has to attend two machines. The actual time taken by both machines are as follows: * Loading the job	07
	bject bject ne: 1 tructio 1. 2. 3. (a) (b) (a) (b) (b) (a) (b) (a) (b) (a) (b) (a) (b) (a)	<ul> <li>bject Code: 172502 Date: 05-12-201</li> <li>bject Name: Productivity Improvement Methods ne: 10:30 TO 01:00 Total Marks: 7 </li> <li>In Attempt all questions. <ul> <li>Make suitable assumptions wherever necessary.</li> <li>Figures to the right indicate full marks.</li> </ul> </li> <li>(a) Enlist the factors influencing productivity. Explain how each factor will affect productivity.</li> <li>(b) Mention the tools to reduce the excess work content. Explain any two tools in brief.</li> <li>(a) Explain the need of incentive schemes for proper implementation of productivity changes.</li> <li>(b) Why must the following be carried out concurrently ? <ul> <li>(i) Selection of handling equipment</li> <li>(ii) Location of work station, and</li> <li>(iii) Arrangement of facilities within work station.</li> <li>OR</li> </ul> </li> <li>(b) The following data is available for a machine in a manufacturing unit.</li> <li># No. of hours worked per day</li></ul>

- (a) What guides will a time study analyst adhere to when breaking an operation 07 0.4 down into its elements? What rational underlies each of these guides?
  - (b) What are relaxation allowances? Why is it given? How is it measured?

## Q.5 (a) What is rating? Why is it used in time study?

Time study has been carried out for a job having seven elements through 07 **(b)** cumulative timing method. From the study, following observations have been made.

Element Number	1	2	3	4	5	6	7
Observed time in seconds	17	52	235	291	357	397	420
Rating, %	105	115	90	100	85	120	80

Determine the standard time of a job considering relaxation and contingency allowances as 12% and 8% respectively of the basic time.

## OR

Q.5 (a) Explain briefly the concept of work sampling with suitable example. 07 07

07

07

- (b) Explain in brief:
  - (i) Financial incentives
  - (ii) Non financial incentives (iii) Individual incentive scheme

  - (iv) Group incentive scheme

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