Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

PDDC - SEMESTER-VI • EXAMINATION - SUMMER • 2014

Subject Code: X 61904 Date: 05-06-2014

Subject Name: Industrial Engineering

Time: 10:30 am - 01:00 pm **Total Marks: 70**

Instructions:

1. Attempt all questions.

- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.
- (a) Discuss main objectives of Special Economic Zone (SEZ) and state advantages 0.1 of SEZ.
 - **(b)** Explain the role of PPC with its different phases.

07

Q.2 (a) Compare Product Layout, Process Layout & Fixed Position Layout.

A firm is using simple exponential smoothing with $\alpha = 0.3$ to forecast the 07 demand. Forecast the demand for the following series by exponential smoothing method:

Take initial forecast as a 18.

Period	1	2	3	4	5	6	7	8	9	10
Demand	12	19	11	10	15	20	11	13	19	24

OR

(b) Discuss following sales forecasting methods

- (1) Delphy Method (Jury Method)
- (2) Method of weighted moving average.
- (a) Define Productivity and discuss various reason for low productivity. 0.3 07
 - **(b)** Explain Flow process chart- worker type with suitable example. 07

An operator working on a lathe machine performed the following elements for 0.3 07 (a) which the observed times and ratings are given below:

Element	Observed	Rating	Relaxation
Code	time (min)		Allowance
A	0.20	80	11%
В	0.08	100	11%
С	2.20	90	13%
D	0.05	80	11%
Е	1.10	110	11%
F	0.12	80	13%
G	0.8	110	11%

Calculate:

- a) normal time of each and normal time of the job.
- b) Standard time of the job.
- (b) Define Work Measurement & Qualified Worker and discuss why job is broken 07 down in to elements?
- The result obtained after taking measurement of 20 sample of size 5 each are as **Q.4** 07 (a) under calculate control limits and central line value for x and R charts.

$$\sum \bar{x} = 681.00, \ \sum R = 12.40$$

Take $A_2 = 0.577$, $D_3 = 00$, $D_4 = 2.11$ and $d_2 = 2.326$

(b) What are the major provisions for safety and Health as per the factories act 07 1948?

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07

Q.4	(a)	Define: 1. Quality 2. Quality Control	07
		Differentiate between variable charts & attribute charts.	
	(b)	Explain following terms	07
		(1) Six sigma	
		(2) T.Q.M.	
Q.5	(a)	State various sources of industrial finance and government incentives to entrepreneurs.	07
	(b)	Define Merit rating . State benefits of Merit Ratings and explain any two methods of merit rating.	07
		OR	
Q.5	(a) Discuss – Standardization and Simplification.		07
	(b)	What is the industrial dispute? Discuss the process of resolving industrial disputes through the Industrial Dispute Act.	
