

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.

Q.1 (a) Discuss main objectives of Special Economic Zone (SEZ) and state advantages of SEZ. **07**

(b) Explain the role of PPC with its different phases. **07**

Q.2 (a) Compare Product Layout , Process Layout & Fixed Position Layout. **07**

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

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 **07**

(1) Delphy Method (Jury Method)

(2) Method of weighted moving average.

Q.3 (a) Define Productivity and discuss various reason for low productivity. **07**

(b) Explain Flow process chart- worker type with suitable example. **07**

OR

Q.3 (a) An operator working on a lathe machine performed the following elements for which the observed times and ratings are given below : **07**

Element Code	Observed time (min)	Rating	Relaxation Allowance
A	0.20	80	11%
B	0.08	100	11%
C	2.20	90	13%
D	0.05	80	11%
E	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 down in to elements? **07**

Q.4 (a) The result obtained after taking measurement of 20 sample of size 5 each are as under calculate control limits and central line value for $\bar{x}$ and R charts. **07**

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

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 1948? **07**

OR

- 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 **07**
entrepreneurs.
- (b)** Define Merit rating . State benefits of Merit Ratings and explain any two **07**
methods of merit rating.
- OR**
- Q.5 (a)** Discuss – Standardization and Simplification. **07**
- (b)** What is the industrial dispute? Discuss the process of resolving industrial disputes **07**
through the Industrial Dispute Act.
