

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – WINTER 2023****Subject Code:3161907****Date:07-12-2023****Subject Name:Basics of Industrial Engineering****Time:02:30 PM TO 05:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

- Q.1** (a) State the objectives of good plant layout. **03**
- (b) Differentiate between product layout Vs process layout. **04**
- (c) From given following data select the site which is suitable for the selection **07**
as plant location considering rate of return method:

Particulars	Site A	Site B	Site C
Total Initial Investments	300000	300000	300000
Total Expected Sales	375000	400000	375000
Raw Material Expenses	80000	90000	100000
Power&Water Supply Exp.	60000	75000	60000
Distribution Exp.	60000	55000	50000
Wages and Salaries	40000	60000	50000
Other Exp.	15000	20000	30000
Community Attitude	In-Different	Want-Business	In-Sufficient

- Q.2** (a) Comparisons: Job type production and Batch type production system. **03**
- (b) Discuss-Assembly Line Balancing. **04**
- (c) What is the Role of production planning and control in industry ?Also explain function of PPC. **07**

OR

- (c) Discuss the following methods of sales forecasting: **07**
- (i) Exponential smoothing
 - (ii) Method of weighted moving average.

- Q.3** (a) List the criteria for selecting a particular Job for method study. **03**
- (b) Draw and give a meanings of following symbols used in process charts: **04**
- (i)Operation(ii)Transport(iii)Storage (iv) Inspection & Operation
- (c) What is Work measurement? List the various techniques of work measurement and also explain how the Standard time is calculated. **07**

OR

- Q.3** (a) Explain Travel Chart. **03**
(b) Explain “String diagram” & its uses. **04**
(c) What is Productivity ? Discuss the factors affecting the productivity of the manufacturing organization. **07**

- Q.4** (a) Give a Reasons for generation and accumulation of Obsolete. **03**
(b) State various government Incentives to Entrepreneurs. **04**
(c) What are the Factories Act ? What are the major provisions for safety and health ? **07**

OR

- Q.4** (a) Aims and Objectives of Industrial Legislation. **03**
(b) Discuss characteristic of good Entrepreneur. **04**
(c) What are different types of Wages ? Explain briefly. **07**

- Q.5** (a) Discuss the functions of Inspection department in a manufacturing plant. **03**
(b) Define : (i) Quality (ii) Quality Control **04**
(iii) Quality Assurance (iv) Quality Audit.
(c) Explain briefly Quality Circles. **07**

OR

- Q.5** (a) What is concept of S.Q.C. **03**
(b) Define : (i) Mean (ii) Range (iii) Standard Deviation (vi) Variance. **04**
(c) Short note on ISO and Six Sigma. **07**
