

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2023****Subject Code:3161907****Date:10-07-2023****Subject Name:Basics of Industrial Engineering****Time:10:30 AM TO 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.
4. Simple and non-programmable scientific calculators are allowed.

MARKS

- Q.1** (a) Differentiate the product layout and process layout. **03**
 (b) Explain Operation Process Chart with suitable example. **04**
 (c) Discuss the factors to be considered for the location of the thermal power plant. **07**

- Q.2** (a) What is Routing? Explain in brief. **03**
 (b) Explain the ways to improve productivity. **04**
 (c) What is line of balance? Describe the procedure of line of balance. **07**

OR

- (c) The data given in below Table shows sales data of XYZ company for last 10 years. **07**

Years	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Sales	95	100	87	123	90	96	75	78	106	104

Forecast the sales for the year 2024 using three months moving average.

- Q.3** (a) State objectives of work study. **03**
 (b) What is therbligs? Explain any two therbligs with their abbreviation and symbol. **04**
 (c) Explain the principles of motion economy and work place design. **07**

OR

- Q.3** (a) Write in brief about work content. **03**
 (b) Explain the two handed process chart with neat sketch. **04**
 (c) Define ergonomics and explain how it helps to improve system performance. **07**

- Q.4** (a) Explain Taylor's differential piece rate system. **03**
 (b) What is an industrial dispute? State aims of Industrial Dispute Act. **04**
 (c) Describe various government financial initiatives for entrepreneurship development. **07**

OR

- Q.4** (a) Describe important attributes required in entrepreneur. **03**
 (b) Discuss the major provisions of Factory Act, 1948. **04**
 (c) Define job evaluation and describe ranking method of job evaluation with its advantages and disadvantages. **07**

- Q.5** (a) What is acceptance sampling? Describe its benefits. **03**
 (b) State and explain the causes of obsolescence. **04**
 (c) Explain control chart patterns and reasons for such patterns. **07**

OR

- Q.5** (a) Explain brief about process capability. **03**
 (b) Discuss in brief about identification and control of waste. **04**

- (c) The samples are taken of product manufactured in industry. Below table shows the data **07**

Sample size (n)	100	100	100	100	100	100	100	100	100	100
Defective product (d)	6	2	4	2	3	3	0	4	3	4

Draw p-chart and give your comments.
