

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2022****Subject Code:3152512****Date:11-01-2023****Subject Name: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.

		<b>MARKS</b>
<b>Q.1</b>	(a) What is the rationale of learning the subject Industrial Engineering.	<b>03</b>
	(b) Identify factors that affecting on flow patterns.	<b>04</b>
	(c) Define Plant Layout. Which factors are affecting on plant layout?	<b>07</b>
<b>Q.2</b>	(a) Give any three reasons for increase and decrease in productivity.	<b>03</b>
	(b) Describe Travel Chart and its usefulness.	<b>04</b>
	(c) Take a suitable example and explain operation process chart.	<b>07</b>
	<b>OR</b>	
	(c) Define: (i) Observed Time (ii) Basic Time (iii) Normal Time (iv) Standard Time (v) Rating Factor (vi) Allowances	<b>07</b>
<b>Q.3</b>	(a) Define (i) Job Analysis (ii) Job Evaluation (iii) Job Rating	<b>03</b>
	(b) How merit rating is differing from job evaluation?	<b>04</b>
	(c) One department follows piece rate system of incentive with guaranteed minimum wage. The hourly rate id Rs 2 only. The piece rate for a particular type of job is Rs. 5. An average worker can make only 3 such jobs in a day. A day means, 8 hours' work. Calculate an average worker's daily earning. Also calculate the daily earnings of an efficient worker making 4 such jobs.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Define "Factory" as per Factory Act, 1948.	<b>03</b>
	(b) What is the need of Industrial Legislation?	<b>04</b>
	(c) What is the objective of The Indian Trade Union Act, 1926? What provisions to be made in the rules of a Trade Union?	<b>07</b>
<b>Q.4</b>	(a) Explain concept of Entrepreneur and Enterprise.	<b>03</b>
	(b) Discuss (i) short term finance (ii) medium term finance (iii) long term finance as a sources of industrial finance.	<b>04</b>
	(c) What should be the objectives of project report? Also discuss contents of project report.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) What are control charts? Enlist various types of control charts.	<b>03</b>
	(b) What is (i) Producer's risk (ii) Consumer's risk with respect to OC curve?	<b>04</b>
	(c) Explain Concept, Principle, Methodology, Scope, Advantage and limitations of Six Sigma	<b>07</b>
<b>Q.5</b>	(a) Differentiate between waste, obsolete and scrap item	<b>03</b>

- (b) What are the reasons for generations and accumulation of obsolete items? **04**
- (c) Discuss various methods of identification and control of waste. **07**

**OR**

- Q.5** (a) Differentiate between ISO 9000, ISO 14000 and QS 9000. **03**
- (b) What are the main objectives of work measurement **04**
- (c) Discuss process layout with advantage, disadvantage and illustration. **07**

\*\*\*\*\*