

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI EXAMINATION – SUMMER 2025****Subject Code: 3161907****Date: 26-05-2025****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.

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| <b>Q.1*</b> (a) List the factors that influence the selection of a plant location.                                     | <b>03</b>    |
| (b) Describe the impact of material handling considerations on plant layout.   | <b>04</b>    |
| (c) Discuss the various factors to be considered for selection of site for Thermal Power plant.                        | <b>07</b>    |
| <b>Q.2</b> (a) List out advantage of Production Planning and Control   | <b>03</b>    |
| (b) What do you mean by Process Planning? Explain step by step procedure of Process Planning                           | <b>04</b>    |
| (c) A Company has to choose one of three locations on basis of the given data, suggest a suitable location and justify | <b>07</b>    |

Factors	Location X	Location Y	Location Z
Total Investment	2,00,000	3,00,000	2,50,000
Cost of raw material	80000	75000	60000
Power and water supply expenses	20000	30000	25000
Cost of distribution	45000	40000	55000
Miscellaneous expenses	40000	30000	30000
Salaries and wages	20000	25000	20000
Expected sales	2,25,000	2,50,000	2,25,000

**OR**

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| (c) Define the following types of production systems: Job Shop, Batch Production, Mass Production, and Continuous Production with example. | <b>07</b> |
| <b>Q.3</b> (a) What is Productivity? Define various ways to increase Productivity  | <b>03</b> |
| (b) Explain with reference to PPC, the following: Routing, Scheduling, Loading and Dispatching.  | <b>04</b> |
| (c) List sales forecasting technique to develop a production plan. Explain any one in detail.  | <b>07</b> |

**OR**

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| <b>Q.3</b> (a) Define Production and Productivity. List Factor affecting the Productivity. | <b>03</b> |
| (b) State objective of work study.   | <b>04</b> |
| (c) What do you mean by Line balancing? What is the procedure for line balancing?          | <b>07</b> |

- Q.4 (a)** Define allowance: State importance of allowance. **03**
- (b)** Explain : **04**
- 1) Observed time
  - 2) Rating Factor
  - 3) Standard time
  - 4) Normal Time
  - 5) Working environment
  - 6) Anthropometry
- (c)** Briefly explain different types of wages. Also explain various types of incentives. **07**
- OR**
- Q.4 (a)** Write short note on : Ergonomics **03**
- (b)** Write short note on **04**
1. MTM
  2. PMT
- (c)** State various method of Job Evolution. Discuss in brief. **07**
- Q.5 (a)** What is Industrial Legislation and why it is required? **03**
- (b)** Discuss the function of inspection department in manufacturing plant. **04**
- (c)** Define waste. Classify waste in terms of industrial aspect? **07**
- OR**
- Q.5 (a)** What is Industrial Dispute? State aims of Industrial Dispute Act. **03**
- (b)** Define Following Terms: **04**
1. Quality Control
  2. Reliability
  3. Quality Audit
  4. Quality Assurance
  5. T.Q.M
- (c)** Differentiate between variable charts and attribute charts. **07**

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