

Seat No./Enrollment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 6 – EXAMINATION – SUMMER 2026

Subject Code: 3161907

Date: 26/05/2026

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.**

- Q.1**
- (a)** Enlist the objectives of plant location selection **03**
 - (b)** Explain process layout **04**
 - (c)** Discuss the various factors to be considered for selection of site for Cement manufacturing plant. **07**

- Q.2**
- (a)** Explain job order production system **03**
 - (b)** Define: a) Routing, b) Scheduling, c) Loading and d) Dispatching with reference to PPC. **04**
 - (c)** The data given below represents sales figure of ABC company for 12 months for the year 2010. Compute three months moving average and forecast the demand for the month Jan 2011. **07**

Month	Demand/sale for month	Month	Demand/sale for month
Jan	96	Jul	76
Feb	101	Aug	79
Mar	88	Sep	107
Apr	124	Oct	105
May	91	Nov	90
Jun	97	Dec	84

OR

- Q.2**
- (c)** List down the methods of forecasting and discuss the various factors affecting the forecasting. **07**
- Q.3**
- (a)** Write the basic procedure of the method study. **03**
 - (b)** Discuss any two symbols of therbligs. **04**
 - (c)** Explain the need and procedure for line balancing. **07**

OR

- Q.3**
- (a)** Classify different recording techniques **03**
 - (b)** Explain cronocycle graph **04**
 - (c)** Explain the phases of PPC in detail **07**

- Q.4**
- (a)** Enlist techniques of work measurement. **03**
 - (b)** Explain the following quality indices; **04**
 - 1) Acceptance Quality Level 2) Rejectable Quality Level 3) Indifference Quality Level 4) Average Outgoing Quality

(c) Explain types of wage plans in detail. **07**

OR

Q.4 (a) Explain fly back stop watch and non-fly back stop watch **03**

(b) Explain Six sigma **04**

(c) Enlist the methods of job evaluation. Explain any one with advantages and disadvantages. **07**

Q.5 (a) Justify the need of industrial legislation. **03**

(b) Write down the roll of quality engineer in manufacturing plant. **04**

(c) Define and classify the waste with respect to Industry. **07**

OR

Q.5 (a) Write down the characteristics of an entrepreneur. **03**

(b) Explain Total Quality management. **04**

(c) Explain the basic concept of ISO 9000 and ISO 14000 **07**
