

Seat No. **MAR\_APR 2025 SUMMER EXAMINATION****11731 Bachelor of Technology (NEP-2.0)****Sub. Name: Industrial Engineering****Sub. Code: 68511/84846/84953****Day and Date: MAY ,23-05-2025****Total Marks: 70****Time: 10:30 AM To 01:00 PM**

- Instructions:**
1. All questions are compulsory
  2. Assume suitable data wherever necessary and mention it boldly
  3. Figures to the right indicate full marks
  4. Use of Scientific calculator is allowed

**Q1) Attempt any TWO from the following [12]**

- a. What are the various activities of industrial engineering? [6]
- b. Define productivity and explain how it differs from efficiency and effectiveness. [6]
- c. Explain in brief models of productivity measurement. [6]

**Q2) Attempt any TWO from the following [12]**

- a. Define work study. What are the components of work study? [6]
- b. Explain the procedure for method study. [6]
- c. Write differences between operation flow diagram and string diagram. [6]

**Q3) Attempt the following [11]**

- a. State Principles of Motion economy? [5]
- b. Define Ergonomics and write its objectives. [6]

**OR**

- c. Explain briefly concept of Human Factor Engineering with example. [6]

**Q4) Attempt any TWO from the following [12]**

- a. How standard time is calculated. [6]
- b. What is performance rating? Why it is required to rate the worker? [6]
- c. In the following table, times shown are continuous stopwatch readings in minutes. Initial setting of stopwatch is at 0.00. Estimate the standard time of operations and production per 8 hours of shift. [6]

Take relaxation allowance as 15%.

Elements	Cycle times in minutes				Performance rating in %
	1	2	3	4	
A	1.7	8.55	15.5	22.5	105
B	2.9	9.8	16.75	23.75	90
C	4.5	11.4	18.4	25.35	110
D	6.8	13.8	20.75	27.65	100

**Q5) Attempt any TWO from the following [12]**

- a. Explain why Plant location decisions are important to the organization. [6]
- b. Explain how the Government policy affects the selection of plant location. [6]
- c. Define material handling and state the objectives of it. [6]

**Q6) Attempt the following [11]**

- a. Define Value engineering. Discuss the various fields of application of value engineering. [5]
  - b. What is merit rating and how it helps in industries? [6]
- OR**
- c. Define Job Evaluation and explain its procedure. [6]

## End Of Question Paper

**Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -**

This Question Paper may be distributed for following Subjects as common code.

सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

- 1] (1154) B.Tech. CBCS (84846) Industrial Engineering Part 4 SEM 8
- 2] (101) Bachelor of Engineering (84953) Industrial Engineering Part 4 SEM 8
- 3] (101) Bachelor of Engineering (68511) Industrial Engineering Part 4 SEM 8