

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, NOVEMBER - 2025**

INDUSTRIAL MANAGEMENT & SAFETY

[Maximum marks: 100]

[Time: 3 Hours]

PART – A

Maximum marks: 10

I. (Answer *all* the questions in one or two sentences. Each question carries **2** marks)

1. Define labour turn over.
2. List any four elements of ISO 9000.
3. Identify the rule used for numbering of events while drawing a network diagram.
4. List any 2 techniques used in operation research (OR) to solve optimization problems.
5. Expand the following (a) TBI (b) DSIR. (5 x 2 = 10)

PART – B

Maximum marks: 30

II. (Answer any *five* of the following questions. Each question carries **6** marks)

1. List the advantages of training.
2. State the functions of management.
3. List the dimensions of quality.
4. Explain inventory models.
5. Distinguish between CPM and PERT.
6. Define the terms
(a) Factory (b) Accident proneness (c) Severity rate.
7. Identify the functions of an entrepreneur. (5 x 6 = 30)

PART – C

Maximum marks: 60

(Answer *one full* question from each unit. Each full question carries **15** marks)

UNIT – I

- III.** (a) Compare the contributions of F.W. Taylor and Henry Fayol in Scientific management. (8)
- (b) Explain functional organization with its merits. (7)

OR

- IV. (a) Explain different methods of training. (8)
(b) Define incentive. Name different financial incentive plans. (7)

UNIT – II

- V. (a) List the steps for ISO 9000 installation. (8)
(b) Explain centralized and decentralized stores. (7)

OR

- VI. (a) List the “ten mantras of TQM”. (8)
(b) Explain the functions of store keeping. (7)

UNIT – III

- VII. (a) A project consists of seven activities. Draw the network diagram and mark the critical path. Also calculate the project duration. The three time estimates for each activity are given below.

Activity	Optimistic time	Most likely time	Pessimistic time
1-2	2	5	14
1-3	2	5	8
1-4	5	11	29
2-5	1	4	7
3-5	5	11	17
4-6	2	5	14
5-6	7	13	31

- (b) For the following payoff matrix of firm A, determine the optimum strategies for both the firms and the value of the game using maximin-minimax principle. (7)

$$\begin{bmatrix} 3 & -1 & 4 & 6 & 7 \\ -1 & 8 & 2 & 4 & 12 \\ 16 & 8 & 6 & 14 & 12 \\ 1 & 11 & -4 & 2 & 4 \end{bmatrix}$$

OR

- VIII. (a) Find the initial feasible solution of the transportation problem represented by availability and requirement matrix given below. Use North West corner rule.

Factories	A	B	C	D	Availability
1	10	9	7	11	10
2	8	6	9	7	8
3	11	12	14	11	7
4	4	6	3	9	9
Total requirement	11	12	5	6	

- (b) A factory needs three component parts C1, C2, C3. It requires process like machining assembling and testing. The component C1 requires machining time, assembling time, testing time as 4, 1, 1 hours respectively. Similarly the component C2 requires 3, 3, 2 hours and component C3 requires 1, 1, 0 hours. The total available machine time is 200 hours and assembling time is 160 hours and testing time is 100 hours. The profit from C1, C2, C3 is Rs. 20, 50, 70 respectively. Formulate the LPP for maximization of profit. (7)

UNIT – IV

- IX.** (a) Explain the 4E's of accident prevention techniques. (8)
(b) List out the steps involved for registration of SSI. (7)

OR

- X.** (a) Explain the precautions to be observed while working on hazardous environment. (8)
(b) List the constituents of feasible study. (7)
