

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE, NOVEMBER - 2023**

**INDUSTRIAL MANAGEMENT AND 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 incentives.
2. List any two characteristics of quality.
3. Define the terms slack and EFT.
4. List any two unsafe acts at workplace.
5. Define DSIR and MSME.

(5 x 2 = 10)

**PART – B**  
**Maximum marks: 30**

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

1. Discuss about the methods of training.
2. Discuss about financial, semi-financial and non-financial incentives.
3. List down the steps of ISO 9000 installation.
4. Explain the functions of a store keeper.
5. Distinguish between CPM and PERT.
6. Solve the game whose pay-off matrix is given below.

		Player B			
		B1	B2	B3	
Player A	A1	{	40	9	2
	A2		30	15	7
	A3		10	5	4

7. Discuss the role of safety officer in maintaining safety at workplace.

(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) Discuss about labour turnover. (7)  
(b) Explain the functions of management. (8)

**OR**

- IV. (a) Explain Line and staff type of organization. (7)  
(b) Discuss about Henry Fayol's management principles. (8)

**UNIT-II**

- V. (a) List the benefits for an ISO 9001:2000 registered company. (7)  
(b) Discuss about ABC control policy. (8)

**OR**

- VI. (a) List down the TEN Mantras of TQM. (8)  
(b) Discuss the functions of sales department. (7)

**UNIT-III**

- VII. (a) Solve the following cost matrix transportation problem using North-West Corner method. (7)

PLANTS	P	Q	R	S	Required
1	6	5	12	11	10
2	9	3	6	4	9
3	11	14	12	11	7
4	7	9	6	8	11
Total available	11	10	7	9	

- (b) Using PERT technique, draw the network diagram and find the critical path and project duration. (8)

Activity	Preceding activity	Time estimate		
		Optimistic	Most likely	Pessimistic
A	None	2	4	12
B	None	10	12	26
C	A	8	9	10
D	A	10	15	20
E	A	7	7.5	11
F	B, C	9	9	9
G	D	3	3.5	7
H	E, F, G	5	5	5

**OR**

- VIII. (a) A factory can produce two products A & B. The contributions that can be obtained from these two products are: A contributes Rs.50/tonne & B contributes Rs.60/tonne. Both the products require 3 machines in their processing. Formulate a Linear programming for the given problem mix. (7)

Profit/tonne	Product A (Rs.50)	Product B (Rs.60)	Total available machine hours per week
Machine 1	2	1	300
Machine 2	3	4	509
Machine 3	4	7	812

- (b) Use Vogel's approximation method to find the initial feasible solution for the given transportation problem. (8)

PLANTS	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	11	12	5	6	

**UNIT-IV**

- IX. (a) Discuss about the 4 E's of accident prevention technique. (8)  
(b) List the factors contributing towards failure of entrepreneurship. (7)

**OR**

- X. (a) State the steps involved in starting a small scale industry. (8)  
(b) Discuss about the Factories Act 1948. (7)

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