

FIFTH SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/
TECHNOLOGY—OCTOBER, 2013

INDUSTRIAL MANAGEMENT AND SAFETY

(Common to all branches except DCP, CE, QS & CM, AR and CB)

[Time : 3 hours

(Maximum marks : 100)

Marks

PART—A

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

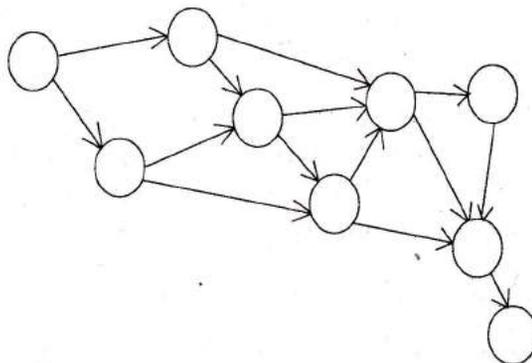
1. What is job analysis ?
2. Define total quality management.
3. What do you mean by post operation ?
4. Define the accident proneness.
5. Write any two causes of water pollution.

(5×2=10)

PART—B

II Answer *any five* questions. Each question carries 6 marks.

1. State the commonly known forms of organizational structure.
2. Classify the wages paid by an employer to a worker.
3. List the preparatory steps of ISO 9000.
4. What are the stages for purchase procedure ?
5. Number the given network diagram according to the Fulkerson's rule in steps of 10 mark the start event as 10.



6. A firm can produce three types of cloth, say, A, B and C. Three kinds of wool are required for it, say, red wool, green wool and blue wool. One unit length of type A cloth needs 2m of red wool and 3 m of blue wool; one unit length of type B cloth needs 3 m of red wool, 2m of green wool and 2 m of blue wool and one unit length of type C cloth needs 5 m of green wool and 4 m of blue wool. The firm has a stock of only 8 m of red wool, 10 m of green wool and 15 m of blue wool. It is assumed that the income obtained from one unit length of type A cloth is ₹ 3.00, of type B cloth is ₹ 5.00 and that of type C cloth is ₹ 4.00. Determine how the firm should use the available material so as to maximize the total income from the finished cloth. Formulate this problem as a L.P. problem.
7. Write any six control measures of noise pollution. (5×6=30)

PART—C

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

UNIT – I

- III (a) What are the six activities according to Henry Fayol's principle of management ? 5
- (b) In a manufacturing firm, the standard time to complete the job is 8 hours and the hourly wage rate is ₹ 10 per hour. Workers are promised to pay incentive according to Rowan plan. Find out the bonus payable to the operator of time to complete the job is 8, 7, 6, 5, 4, 3, 2 and 1 hour respectively. Write the comment from the solution. 10

OR

- IV (a) List any five requirements of a good wage plan. 5
- (b) Differentiate between partnership and joint stock companies. 10

UNIT – II

- V (a) List the objectives of quality audit. 5
- (b) Write any ten functions of sales department. 10

OR

- VI (a) Write short notes on single tender and open tender. 5
- (b) State ten 'manthras' of total quality management. 10

UNIT – III

- VII (a) A father notes that his teenage daughter uses the telephone. She takes no less than five minutes for a call and sometimes as much as an hour. Fifteen minutes calls are more frequent than calls of any other duration. If daughters phone calls were an activity in PERT project :
- (i) What would be the phone calls expected duration ?
- (ii) In scheduling the project, how much time would you allocate for the phone call ? 5

- (b) A company has 3 warehouses and 4 stores; the cost of shipping one unit from warehouse to store is shown in the cost matrix given below :

$$\begin{bmatrix} 2 & 3 & 11 & 7 \\ 3 & 2 & 6 & 1 \\ 5 & 8 & 15 & 9 \end{bmatrix}$$

The requirements of 4 stores are 7, 5, 3, 2 and quantities at the warehouses are 6, 1, 10. Find the initial feasible solution to the transportation problem by Vogel's approximation method.

10

OR

- VIII (a) State whether the following game matrix has a saddle point. If it exists what is the value of the game? Who is the winner of the game?

$$\begin{array}{c} \text{Player B} \\ \text{Player A} \end{array} \begin{bmatrix} 3 & 2 & 4 \\ -2 & 1 & -3 \\ 0 & -2 & 3 \end{bmatrix}$$

5

- (b) Construct the network for the following project :

1. A is the first or start event and K is the end event.
2. Event B precedes event A.
3. C and D are successor events to event B.
4. Events E and F occur after event C.
5. Event F succeeds event E.
6. Event C restrains the occurrence of event G.
7. Event G succeeds event D.
8. Event G precedes event H.
9. Event F restrains the occurrence of event H.
10. Event J is a successor event to events F and H.
11. K is a successor event to event J.

10

UNIT - IV

- IX (a) What are the various accident factors? 5
 (b) Explain the various phases of water treatment process. 10

OR

- X (a) Define the terms factory and accident. 5
 (b) Explain the precaution while working in an hazardous environment. 10