

DiplETE – ET (OLD SCHEME)

Code: DE16
Time: 3 Hours

Subject: INDUSTRIAL ENGINEERING
Max. Marks: 100

JUNE 2010

NOTE: There are 9 Questions in all.

- Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.
- Out of the remaining EIGHT Questions, answer any FIVE Questions. Each question carries 16 marks.
- Any required data not explicitly given, may be suitably assumed and stated.

Q.1 Choose the correct or the best alternative in the following: (2×10)

- a. _____ check the role performed by industrial engineering department in an enterprise
- (A) Advisory (B) Legal
(C) Management (D) Supervision
- b. High productivity can be achieved by _____.
- (A) employing more men and machines
(B) giving recognition to trade unions
(C) adopting proper system of preventive maintenance of machinery
(D) increasing the working hours
- c. All machine and equipment are arranged according to the nature or type of operations in _____.
- (A) Process layout (B) Product layout
(C) Group layout (D) Fixed position layout
- d. PERT is mainly useful for _____.
- (A) large projects (B) large and complex projects
(C) any small or large project (D) research and development project
- e. If the demand for an item is doubled and the ordering cost halved, the EOQ _____.
- (A) remains unchanged (B) increased by a factor of $\sqrt{2}$
(C) is doubled (D) is halved.
- f. In ABC inventory control technique, maximum attention is given to those items which are _____.
- (A) Surplus (B) more in demand
(C) costly (D) perishable in nature
- g. MAPI (Machinery Allied Product Institute) method guides for action on subject of _____.
- (A) quality control (B) material management
(C) equipment replacement (D) optimum utilization of machines
- h. What represents the abscissa of a break-even chart?

- (A) variable cost. (B) total cost.
(C) sales volume. (D) profit.

i. Merit rating is the method of determining _____.

- (A) worth of a machine (B) worker's performance on a job
(C) relative value of a job (D) utility of a product

j. What does symbol \square imply in work study ?

- (A) inspection. (B) operation.
(C) delay. (D) temporary storage.

**Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.**

- Q.2** a. How productivity can be improved by the aid of industrial engineering? (6)
b. Describe briefly the qualities of an industrial engineer. (6)
c. Write down the different application of industrial engineering? (4)
- Q.3** a. Define productivity. What are the factors affecting productivity? (8)
b. Describe briefly the concept of Micro-economics applied to plants & industrial undertaking. (5)
c. Define supply chain management in brief. (3)
- Q.4** a. Write down the principles of plant layout? (5)
b. What do you understand by line balancing? Write down the various methods of line balancing? (6)
c. What are the symptoms of a poor plant layout? (5)
- Q.5** a. What are the various factors which affects the product design? (5)
b. What are the various elements of Total Quality Management? (5)
c. Define Acceptance sampling. What are the limitations of sampling? (6)
- Q.6** a. Why is Work Study valuable? (5)
b. Explain the basic procedural steps in conducting Work Study. (6)
c. What do you understand by "Standard Data"? Also mention the use of the Standard Data. (5)
- Q.7** a. Write down the advantages and limitations of Network Technique. (5)
b. Define Linear programming. What are the various application area of linear programming? (5)
c. A man goes to market to purchase buttons. He needs at least 20 large buttons and at least 30 small buttons. The shopkeeper sells buttons in two forms (i) boxes and (ii) cards. A box contains 2 large and 5 small buttons and a card 10 large and 5 small buttons. Find the most economic way in which he should purchase the buttons, if a box

costs 10 paise and a card 25 paise only. (6)

Q.8 a. Define Preventive Maintenance. What are the requirements for good Preventive Maintenance?
(8)

b. What are the different factors which are responsible to replace the equipment although it may be running?
(8)

Q.9 a. Define Leadership. What are the different styles of leadership? (4)

b. Write short note on Economic Lot Size (4)

c. What are the benefits of Job Evaluation? (4)

d. Write down the application of computer in Inventory Control. (4)