

DECEMBER 2006

Code: D-16
Time: 3 Hours

Subject: INDUSTRIAL ENGINEERING
Max. Marks: 100

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.**
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Q.1 Choose the correct or best alternative in the following: (2x10)

a. Industrial Engineering is closely related to


- (A) Machinery Management (B) Product Management
(C) Production Management (D) Material Management

b. Product Layout is also known as

- (A) Functional Layout (B) Line (Type) Layout
(C) Plant Layout (D) Process Layout

c. np chart is a

- (A) Control Chart for Variables
(B) Control Chart for Attributes
(C) Chart used in Production Control
(D) Chart used in Process Control

d. Symbol  in a process chart denotes

- (A) Operation (B) Storage
(C) Stop (D) Inspection

e. Any adjustment to the arrow diagram in a net work which become necessary during the departure from project schedule laid down earlier is called

- (A) Smoothing (B) Net work Updating
(C) Crashing (D) Adjusting

- f. Vogets' Approximate Method is an optimisation technique used in
- (A) Dynamic Programming (B) Waiting Line Theory
(C) Game Theory (D) Transportation Problem
- g. MAPI Method is used in
- (A) Replacement Analysis involving Capital assets
(B) Control and Evaluation of Plant Maintenance
(C) Control and Evaluation of Preventive Maintenance
(D) Analysis of Breakdown Maintenance
- h. According to Mc Gregor _____ is best known by Hot Stove Rule
- (A) Promotion (B) Discipline
(C) Motivation (D) Morale
- i. Inventory System that continuously discloses the amount of inventory is called
- (A) Retail (B) Physical
(C) Perpetual (D) Periodic
- j. Paired Comparison Method is one of the methods used in
- (A) Merit Rating (B) Job Evaluation
(C) Work Measurement (D) Job Description

Answer any FIVE Questions out of EIGHT Questions.

Each question carries 16 marks.

- Q.2** a. Describe the concept of Industrial Engineering. Discuss the differences between Industrial Engineering and Production Management? (8)
- b. Explain the requirements of a good product design? (8)
- Q.3** a. Explain TQM and its objectives. Discuss the aspect of customer satisfaction which is considered the ultimate goal of TQM? (8)
- b. Explain the concept of inspection. Describe briefly various kinds of inspection. (8)
- Q.4** a. Describe seven symbols used in process charts to record different types of events? (8)

b. Define Method Study and Work Measurement. What are their objectives. (8)

Q.5 a. Write briefly about PERT. What are the steps involved in PERT Planning technique? (8)

b. On a telephone booth the average time between the arrival of one man and the next is 10 minutes and the arrivals are assumed to be Poisson. The meantime of using the phone is 4 minutes and is assumed exponentially distributed. Calculate (8)

- (i) The probability that a man will have to wait after he arrives
- (ii) The average length of waiting line forming from time to time

Q.6 a. List the techniques used in Operations Research to solve optimization problems. What are the applications of OR? (8)

b. What do you understand by the term Merit Rating? What are its advantage and disadvantages? (8)

Q.7 a. What are the considerations which warrant replacement of equipment? (8)

b. Discuss briefly the importance of maintenance. What is the concept of Predictive Maintenance? (8)

Q.8 a. Motivation moves an individual into action and urges him to work with sincerity and loyalty. Describe motivation and the types of motivation. What are the motivational techniques? (8)

b. Define discipline and narrate the effect of indiscipline. What methods can be adopted to improve the disciplinary environment in the organization? (8)

Q.9 a. Bin card and Stores Ledger are two important records of stores. Explain. (8)

b. (i) What are the objectives of Inventory Control.

(ii) Find the EOQ and time between two consecutive orders with the following data:

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(8)

Annual Demand – 3200 parts

Unit cost – Rs 6/-

Inventory carrying charge – 25% per annum

Cost of each procurement – Rs 150/-