

JUNE 2008**Code: DE16**
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. Productivity may be defined as the ratio between
- (A) Amount and number of items produced.
(B) Amount or the number of items produced and the various resources employed.
(C) Output and the number of items produced
(D) Input and the resources employed
- b. Line Layout is also known as
- (A) Plant Layout (B) Process Layout
(C) Product Layout (D) Factory Layout
- c. Statistical Quality Control uses three scientific techniques, namely
- (A) Statistics, Quality & Control
(B) Statistics, OR & Mathematics
(C) Sampling Inspection, Analysis of Data & Control Charting
(D) Sampling, Inspection & Recording
- d. An activity oriented technique in Network is known as
- (A) MAPI (B) OR
(C) EOQ (D) CPM
- e. Any adjustment to the arrow diagram which becomes necessary during the departure from the project schedule laid earlier is called
- (A) Network Crashing (B) Smoothing
(C) Network updating (D) Network optimizing
- f. Symbol in a process chart denotes
- (A) Operation (B) Storage
(C) Stop (D) Inspection

- g. A stitch-in-time procedure aimed at avoiding breakdown is known as
- (A) Corrective Maintenance (B) Preventive Maintenance
(C) Scheduled Maintenance (D) Predictive Maintenance
- h. A supervisor/Foreman is a vital link between
- (A) Worker and Worker (B) Union and worker
(C) Management and Union (D) Management and Worker
- i. Inventory system that continuously discloses the amount of inventory is called
- (A) Perpetual (B) Physical
(C) Retail (D) Periodic
- j. A systematic and orderly approach to assess the relative worth of an employee working in an organization in terms of his job performance, integrity, leadership, intelligence, behaviour, etc is known as
- (A) Job Evaluation (B) Job Description
(C) Merit Rating (D) Job Comparison.

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. What is the meaning of Plant Layout? State the objectives of a good plant Layout. (8)
- Q.3** a. Explain the concept of Inspection. Describe briefly various kinds of Inspection. (8)
- b. Describe the concept of Quality Circle. How a quality circle functions in a company? (8)
- Q.4** a. Define Method Study & Work Measurement. What are the advantages of work study? (8)
- b. Explain the concept of standard data. What are the steps involved in developing a standard data? (8)
- Q.5** a. Describe PERT. What are the steps employed in CPM for accomplishing a Project Planning? (8)
- b. The activity details and their predecessors are given below along with their activity times. Construct a Net Work Diagram & indicate the critical Path.

(8)

<u>Activity</u>	<u>Predecessor</u>	<u>Activity Time (days)</u>
A	-	4
B	A	3
C	A	2
D	B	5
E	B	3
F	C, D	4
G	E, F	3

Q.6 a. Discuss the factors to be considered for replacement of equipments. **(8)**

b. ABC Company maintains records of costs incurred in maintaining and running various machines held by them. A lathe purchased by them was at a cost of Rs.6,00,000. The resale value of the lathe and the operating/maintenance costs at the end of each year in given below. Find the year in which the lathe is to be replaced. **(8)**

<u>Year</u>	<u>Operating & maintenance cost</u>	<u>Resale value/price</u>
1	1,20,000	3,00,000
2	1,40,000	1,50,000
3	1,60,000	75,000
4	2,00,000	37,750
5	2,50,000	20,000
6	3,00,000	20,000
7	3,60,000	20,000
8	4,20,000	20,000

Q.7 a. Describe Motivation and the types of motivation techniques used to motivate employee in an organization. **(8)**

b. Distinguish various styles of Leadership displayed by managers. **(8)**

Q.8 a. What is EOQ? With the help of a graphical diagram explain the term Total Cost and EOQ. **(8)**

b. ABC Company has a demand for 10,000 units per year. The cost per unit is Rs. 2 and it costs Rs. 36 to place an order and to process the delivery. The inventory carrying cost is 9% of the average inventory cost. Determine

(i) EOQ

(ii) Optimum number of orders to be placed in a year. **(8)**

Q.9 a. In the last decade computer applications in industrial engineering have made great impact. Explain this statement. **(8)**

b. Job evaluation is systematic process of evaluating different jobs of an organization. Give its

objectives and briefly explain the various methods or systems of job evaluation. (8)