1/6/12 Code: DE16

Code: DE16 Subject: IN

Code: DE16 Subject: INDUSTRIAL ENGINEERING
Time: 3 Hours Max. Marks: 100 DECEMBER 2007

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 best alternative in the following:

(2x10)

- a. Scientific Management Approach was advocated by
  - (A) FW Taylor

(B) Charles Babbage

(C) Gilbreth

**(D)** Elton Mayo

- b. np chart is a
  - (A) Control Chart for Variables
- (B) Control Chart for Attributes
- **(C)** Chart used in Process Controls
- (D) Chart used in Production Control
- c. An approach to the problem of securing a higher level of error free work performance is called
  - (A) Zero Defect Approach
  - (B) Top Quality Control Approach
  - (C) Optimum Performance Approach
  - (D) Optimum Productivity Approach
- d. The duration of a critical path of a project is called
  - (A) Earliest Finish Time
- (B) Earlier Start Time
- (C) Total Project Time
- (D) Latest Finish Time
- e. Tests employed to make decisions on the basis of small information available from samples is called
  - (A) Estimation

- (B) Significance Testing
- (C) Analysis of Variance
- **(D)** Sample Testing
- f. Scientific Study of the relationship between Man and his working environment is
  - (A) Therbligs

- (B) Motion Study
- (C) Optimum Analysis
- (D) Ergonomics
- g. The use of human senses or other sensitive instruments to predict trouble before equipment fails is known as
  - (A) Corrective Maintenance
- **(B)** Preventive Maintenance
- (C) Predictive Maintenance
- **(D)** Scheduled Maintenance
- h. A leader gives decisions only after consulting his subordinates is practising
  - (A) Authoritarian leadership style
- **(B)** Autocratic leadership style
- (C) Free Rein leadership style
- (D) Democratic leadership style
- i. If 'U' is Annual usage 'P' is procurement cost, 'C' is cost/piece and 'I' is cost carrying inventory, then EOQ is
  - (A) √2UF

(B) √2CI

(C) \frac{12C1}{17P}

 $\mathbf{D}$ )  $\sqrt{\frac{200}{\text{PI}}}$ 

1/6/12 Code: DE16

- j. The techniques to rate a job (but not the worker) is
  - (A) Job Analysis
- (B) Job Description
- (C) Job Specification
- (D) Job Evaluation

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

Q.2 a. Discuss the role and functions of an Industrial Engineer.

(8)

b. Describe the requirements of a good product design?

(8)

Q.3 a. Who carries out In-Process Inspection? What does it aim to check?

(8)

- b. Write briefly about TQM and its objectives. Discuss the aspect of customer satisfaction which is considered the ultimate goal of TQM. (8)
- Q.4 a. What are the principles of Motion Economy? State the roles of human motions concerning human body and that of Tools & Equipment Design? (8)
  - b. What do you understand by synthesis of work study data? Describe briefly the steps involved in synthesis.

    (8)
- **Q.5** a. What are the differences between PERT & CPM?

(8)

(8)

**(8)** 

b. Construct the Network from the following information and give the critical path.

**Immediate** Activity Time Activity Predecessor (Weeks) Α 6 В 10 C 14 \_ D  $\mathbf{C}$ 6 Е A,B 14 F E,D 6 G D 4 Η 4 F.G

- Q.6 a. Distinguish between Preventive Maintenance and Breakdown Maintenance.
  - (8)
  - b. What are the considerations, which warrant replacement of equipment?
- Q.7 a. Define the term Discipline. What are its effects in organizational context? How disciplinary environment is improved in the organization? (8)
  - b. What is Morale? What factors affect the employee morale?
- (8)
- Q.8 a. A manufacturer has to supply his customers 3600 units of his product per year. Shortages are not permitted. Inventory carrying cost amounts to Rs.1.20 per unit per annum. The set up cost per run is Rs.80. Find the following:-
  - (i) EOQ
  - (ii) Optimum number of orders per annum
  - (iii)Optimum period of supply per optimum order

(8)

**(8)** 

- b. Bin Cards and Stores Ledger are two important records of stores. Explain.
- **Q.9** a. Define job Evaluation. What are its objectives and procedures?
- (8)

b. Explain OR? Narrate the steps involved in OR.

(8)