

DiplETE – ET (OLD SCHEME)

Code: DE16
Time: 3 Hours

Subject: INDUSTRIAL ENGINEERING
Max. Marks: 100

JUNE 2011

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.
- The answer sheet for the Q.1 will be collected by the invigilator after 45 Minutes of the commencement of the examination.
- 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. Which one of this is job evaluation method?

- (A) Ranking method (B) Rating scale method
(C) Check list method (D) Employee comparison method

b. The number of purchase orders to be furnished =

- (A) $\frac{\text{Total quantity}}{\text{E.O.Q}}$ (B) $\frac{\text{E.O.Q}}{\text{Total quantity}}$
(C) $\frac{\text{Total quantity}}{\text{Cost}}$ (D) $\frac{\text{Cost}}{\text{Total quantity}}$

c. Data processing functions are

- (A) Data collection (B) Manipulation
(C) Storage (D) All the above

d. Foreman is designated as

- (A) Manager (B) Supervisor
(C) Worker (D) Coordinator

e. Methods used in selection of alternatives

- (A) Total average method (B) Annual cost method
(C) Rate of return method (D) Above three methods.

f. Annual cost =

- (A) Maintenance cost + operating cost (B) Operating cost
(C) Capital recovery + operating cost (D) Maintenance cost

- g. Types of inventory models are
- (A) Simple EOQ model (B) EOQ model with stock outs allowed
(C) Inventory model under risk (D) (A), (B) & (C)
- h. Linear Programming is
- (A) Merit rating method (B) One of the operation research method
(C) Predictive maintenance method (D) Annual cost method
- i. Different types of maintenance are
- (A) Inspection maintenance (B) Preventive maintenance
(C) Predictive maintenance (D) Both (B) & (C)
- j. Merit rating
- (A) Encourages meritorious employees
(B) Improves employee and employer relations
(C) Develops the ability of a rater
(D) All the above

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

- Q.2** a. What is the role and functions of an industrial engineer? Mention any four. (4)
- b. What are the main objectives of Line Balancing? (3)
- c. What are the various kinds of productivity measures? (9)
- Q.3** a. What are the requirements of a good product design? (6)
- b. Name and explain the different kinds of inspection in brief. (2+8)
- Q.4** a. Define work-study. Why is it needed? What are the advantages of work-study? (2+2+4)
- b. What are the steps involved in motion analysis? (8)
- Q.5** a. Explain the different operation research techniques. (8)
- b. In brief explain Queuing Theory and its application. (8)
- Q.6** a. What are the objectives and importance of plant maintenance? (3+5)

- b. Given below is the data for two equipments. Find out which alternative is required to be selected. CRF for 8 years $i = 5%$ is 0.1547 **(4+4)**

	Equipment -1	Equipment -2
Initial cost	Rs. 10,000.00	Rs. 15000.00
Annual operating cost	Rs. 1000.00	Rs. 800.00
Life of the equipment	8 years	8 years
Salvage value	Rs. 1000.00	Rs. 3000.00
Interest rate 5%		

- Q.7** a. Explain Democratic and Free Rein leadership. **(4+4)**
- b. What are the various steps involved in handling grievances? **(8)**
- Q.8** a. Define job evaluation and what are its objectives? **(2+6)**
- b. Define merit rating and what are the different methods of merit rating? **(2+3)**
- c. Brief on how computers are used in inventory control. **(3)**
- Q.9** a. What are the principle objectives of TQM? **(5)**
- b. Define management information systems. What is the purpose of MIS? **(5)**
- c. What is the objective of Inventory Control and how it can be achieved? **(6)**