TED (15)5022
(Revision – 2015)

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2022

INDUSTRIAL ENGINEERING

[Maximum Marks: **100**] [Time: **3** Hours]

PART-A

[Maximum Marks: **10**]

I. (Answer ***all*** questions in one or two sentences. Each question carries ***2*** marks)

1. List any four types of maintenance.
2. List basic constituents of standard time.
3. Define central tendency.
4. List the constituents of a job estimate.
5. Differentiate between production and productivity. (5 x 2 = 10)

PART-B

[Maximum Marks: **30**]

II. (Answer ***any five*** of the following questions. Each question carries ***6*** marks)

1. List the advantages, disadvantages and applications of fixed position layout.
2. List the factors affecting selection of a material handling equipment for an industry.
3. Explain operation process chart with an example.
4. List the advantages and disadvantages of work sampling study.
5. Explain the areas of application of quality control programme.
6. Differentiate between variables and attributes.
7. List the advantages and disadvantages of sampling inspection. (5 x 6 = 30)

PART-C

[Maximum Marks: **60**]

(Answer ***one*** full question from each Unit. Each full question carries **15** marks)

UNIT – I

III. (a) Explain scheduling. List the factors affecting scheduling. (8)

(b) Explain value analysis. Give its advantages and applications. (7)

OR

IV. (a) Explain any four methods of forecasting. (8)

(b) Explain the characteristics of a process type layout. (7)

UNIT – II

V. (a) Explain the basic procedure for conducting method study. (8)

(b) Explain work measurement and list its objectives. (7)

OR

VI. (a) Explain the procedure for conducting stopwatch time study. (8)

(b) List the principles of motion economy related to work place arrangements. (7)

UNIT- III

VII. (a) Distinguish between quality control and inspection. (8)

(b) Following data refers to details of inspection of 10 samples of 100 items. Construct a P chart and comment on the production process. (7)

Sample no.	1	2	3	4	5	6	7	8	9	10
No of Defectives	11	6	4	3	10	3	5	6	8	4

OR

VIII. (a) Draw normal distribution curve and discuss its characteristics. (8)

(b) Find the measures of central tendency and dispersion for the following data.

3,5,6,8, 7,6,9, 10,11 (7)

UNIT - IV

IX. (a) Differentiate between estimation and costing. (8)

(b) A product is manufactured in batches of 100 per day. Direct material cost is Rs.160. Direct labor cost is Rs.200. Factory overhead is Rs 200. Selling overhead is 30 percent of factory cost. Find the selling price of each product if the profit expected is 15 percent of selling price. (7)

OR

X. (a) Illustrate the use of a double sampling plan in sampling inspection process. (8)

(b) A machine was purchased for Rs 40,000. Its estimated life is 5 years. Salvage value of the machine at the end of 5 years is Rs 10,000. Calculate the depreciation at the end of each year using sum of years' digit method. (7)

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