

SS ME

TED (10) – 4023

Reg. No.

(REVISION — 2010)

Signature

**FIFTH SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/
TECHNOLOGY — MARCH, 2015**

INDUSTRIAL ENGINEERING

(Common for ME and TD)

[Time : 3 hours

(Maximum marks : 100)

Marks

PART—A

(Maximum marks : 10)

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

1. List any four methods of forecasting.
2. Differentiate between variables and attributes.
3. List the different types of plan Layout.
4. Define Work Sampling.
5. Differentiate between Estimation and Costing.

(5×2=10)

PART—B

(Maximum marks : 30)

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

1. Find Mean, Median, Mode, Range and Standard Deviation for the following data 50, 35, 60, 75, 45, 40, 60, 85.
2. Explain the main functions of Estimation.
3. Differentiate between Preventive maintenance and Break down Maintenance.
4. Explain the characteristics of Normal distribution Curve.
5. Explain the two handed process chart with the help of example.
6. Explain the characteristics of Continuous type Production.
7. List the advantages and applications of value analysis.

(5×6=30)

PART—C

(Maximum marks : 60)

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

UNIT—I

- III (a) Explain the characteristics of process type plant layout. List its advantages and applications. 8
- (b) Explain : (i) JIT (ii) Break Even Analysis. 7

OR

- IV (a) Define Routing. Explain the procedure for routing. 8
- (b) List the principles of effective material handling. 7

UNIT—II

- V (a) Define method study. Explain the procedure for method study. 7
- (b) List the principles of motion economy concerning human body. 8

OR

- VI (a) Explain the different types of Sampling techniques used. 7
- (b) An industrial job involves 4 operations. Related data is given below. Rest and personal allowances are 10% and contingencies are 2% of the basic time. Find the standard time for completing the job.

Operation No.	Observed time	Rating Factor	
1	0.20	85	
2	0.32	95	
3	0.26	90	
4	0.35	100	8

UNIT—III

- VII (a) Explain the characteristics of Centralized Inspection. Give its advantages and disadvantages compared to floor inspection. 7
- (b) Following table given number of missing revets noted in a newly fabricated vehicle.
- | | | | | | | | | | | |
|------------------|----|----|----|----|----|---|----|----|----|----|
| Vehicle No. : | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Missing revets : | 11 | 13 | 14 | 26 | 20 | 9 | 25 | 15 | 14 | 13 |
- Construct C chart and Comment on control. 8

OR

- VIII (a) Explain the different measures of central tendency and dispersion. 7
- (b) Given are the mean and range for 12 samples with a sample size of 5. Construct \bar{x} and R chart and comment on the state of control.

($A_2 = 0.58$, $D_3 = 0$, $D_4 = 2.11$)

Sample No. :	1	2	3	4	5	6	7	8	9	10	11	12
Mean :	49	43	44	37	37	51	43	46	47	45	44	46
Range :	6	5	5	6	7	7	4	8	4	6	8	4

UNIT—IV

- IX (a) What do you mean by depreciation ? Explain the causes of depreciation. 6

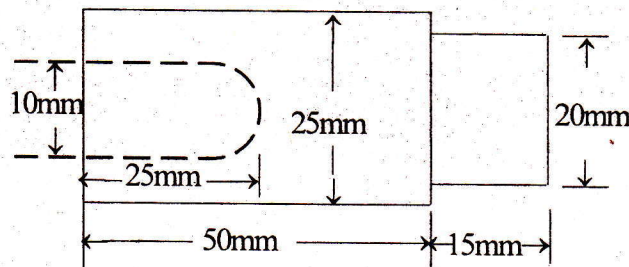
- (b) Find the time taken to manufacture a job according to the dimensions show in figure from a rod of 30mm diameter, including the time for facing off and parting off. Cutting speed is 20 meters/minute.

Feed for facing off and parting off is 0.15mm/rev.

Feed for turning is 0.35mm/rev.

Feed for drilling is 0.06mm/rev.

Depth of cut should not exceed 1.5mm.



OR

- X (a) Explain the different elements of project analysis. 8

- (b) A product purchased for ₹ 8,000 and the assumed life is 10 years. The scrap value is ₹ 2,000. If the depreciation is calculated by diminishing balance method, calculate the percentage with which the value of the product is reducing every year and the depreciation fund after 2 years. 7