

Total No. of Questions : 12]

SEAT No. :

**P2150**

[Total No. of Pages : 4

**[5254] -546**

**B.E. (Mechanical Engineering)  
INDUSTRIAL ENGINEERING  
(Elective - III) (Semester - II)**

*Time : 2½ Hours]*

*[Max. Marks :70*

*Instructions to the candidates:*

- 1) Answers should be written in one answer book.*
- 2) Answer Q. 1 or Q.2, Q.3 or Q.4, Q.5 or Q.6*
- 3) Neat diagrams must be drawn wherever necessary.*
- 4) Figures to the right side indicate full marks.*
- 5) Assume suitable data if necessary.*

**SECTION - I**

**Q1)** Define and explain what do you understand by industrial Engineering? Explain the Frederick Taylor's contribution towards scientific management. **[6]**

OR

**Q2)** Explain types of organization. **[6]**

**Q3)** Explain Method Study. What are different recording techniques in method study. **[7]**

OR

**Q4)** Describe with suitable examples following (Any Two) **[7]**

- a) Operation process chart
- b) Flow process chart
- c) Two handed process chart

***P.T.O.***

**Q5) Write short notes on : (Any Four)**

**[7]**

- a) Allowance
- b) Basic time
- c) Standard time
- d) MOST
- e) PMTS

OR

**Q6) Following are the element times of a machining operation. Calculate normal time, standard time for this job.**

**[7]**

Element	Observed Time (Min)	Performance Rating	Frequency	Relaxation Allowance. (%)
1	1.8	80	1	10
2	2.20	90	1	12
3	6.30	100	1	10
4	3.20	100	1	10
5	1.40	90	1	12
6	20.00	80	1/25	12

**Q7) a) For a particular product demand is given below. With a smoothing constant of 0.20 and using first order exponential smoothing what is forecast for month of September?**

**[8]**

Month	Actual Demand
April	200
May	150
June	180
July	220
August	200

**b) Explain the objectives of material handling and material handling Equipments.**

**[8]**

OR

- Q8)** a) Annual demand for an item is 5400 units. Ordering cost is Ps. 600 per order, Inventory carrying cost is 12% of the average inventory. [8]

Lot Size	Unit Price (Rs.)
0 - 2300	12
2400 - 2999	10
3000 and above	8

- b) What is demand forecasting? Explain functions of production planning and control. [8]

- Q9)** a) Describe the factors to be considered while finalizing the plant location with suitable illustration. [9]

- b) What is assembly line balancing? Explain Largest Candidate Rule method. [8]

OR

- Q10)** a) Explain need of store management. [8]

- b) Explain following terms [9]

- i) LCR method
- ii) Push and Pull Production system

- Q11)** a) What do you understand by BEA? [8]

- b) A company has given following information. [9]

Data	Rs.
Sales	2,00,000/-
Variable Overheads	1,20,000/-
Fixed Overheads	50,000/-
Net profit	30,000/-

Determine

- i) P/V ratio
- ii) BEP
- iii) Margin of Safety

OR

**Q12)** a) What is importance of standard costing? Explain different elements of costs. **[8]**

b) A factory producing only one item which it sells for Rs 12.50 per unit has fixed cost Rs. 60,000 and variable cost is Rs. 7.50 per unit. Find out **[9]**

- i) No. of units to be produced to break even
- ii) No. of units to be produced to earn profit Rs. 12,000/-
- iii) The profit if 25,000 units are produced and sold.

