

Total No. of Questions : 8]

SEAT No. :

PE2314

[Total No. of Pages : 2

[6584]-223

B.E. (Mechanical)

INDUSTRIAL ENGINEERING

(2019 Pattern) (Semester - VII) (402044D) (Elective - III)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Solve Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.
- 2) Figures to the right indicate full marks.
- 3) Use of electronics calculator is allowed.
- 4) Assume suitable data, if necessary.

- Q1)** a) Sketch and explain in brief Material flow patterns & the Selection criterion for material handling. [9]
- b) Explain in detail factors affecting selection of location for the industrial plant. [8]

OR

- Q2)** a) Enlist material handling equipment and describe any three of them & Define material handling. [9]
- b) Compare Product layout and Process Layout and explain factors affect while selecting plant Layout. [8]

- Q3)** a) What is Line balancing? Explain Assembly line balancing in detail. [8]
- b) Calculate the forecast for February to July for trading firm Rudra industries which uses exponential smoothing with smoothing constant 0.18 for estimating a demand. Following table shows the demand for 6 months. The forecast for January is 550 units. [9]

Month	Actual Demand
January	480
February	520
March	525
April	498
May	477
June	564

OR

P.T.O.

- Q4) a)** Write a short on **[8]**
 i) Master production schedule
 ii) Capacity Planning

- b)** Explain the need for forecasting. **[9]**

Past data on the sale of Diesel engines for the last 12 years is given below. By the method of three yearly moving averages establish the trend values and forecast demand for 13th year. If the actual demand for 13th year is 540 nos. what shall be the forecast of 14th year. Take value of smoothing constant is 0.25

Year	1	2	3	4	5	6	7	8	9	10	11	12
Sale numbers	335	350	330	340	380	410	430	440	430	460	500	560

- Q5) a)** Explain any three selective control techniques of inventory. **[9]**

- b)** Explain the term EOQ. **[9]**

A production company requires 9500 units per year. Ordering cost is Rs. 130 per order & carrying cost is 21%. Purchase price per unit is Rs. 48. Determine

- i) EOQ
 ii) Optimum no. of orders
 iii) Total cost including acquisition of material.

OR

- Q6) a)** Explain the role of material management in Cost Reduction & Value Improvement. Explain the term "MRP-I". **[9]**

- b)** The rajesh enterprises use EOQ logic to determine the order quantity for its. various components and are planning its orders. The Annual consumption is 90,000 units, Cost to place one order is Rs.1200, Cost per unit is Rs.50 and carrying cost is 7% of Unit cost. Find, **[9]**

- i) EOQ & No. of order per year,
 ii) Ordering Cost and Carrying Cost
 iii) Total Cost of Inventory.

- Q7) a)** Explain Key result area in detail. What is value engineering? Explain steps in value analysis. **[10]**

- b)** What is Performance Appraisal? Explain Performance Appraisal methods. **[8]**

OR

- Q8) a)** What is Merit Rating? Enlist and explain the methods of Merit Rating in Performance appraisal. **[9]**

- b)** Explain the-terms Rapid Upper Limb Assessment (RULA) and Rapid Entire Body Assessment (REBA). **[9]**

