

Total No. of Questions : 12]

SEAT No. :

P2991

[5154]- 556

[Total No. of Pages : 4

B.E. (Mechanical Engineering)

INDUSTRIAL ENGINEERING

(2012 Pattern) (Semester - II) (End Sem.) (Elective - III) (402049 C)

Time :2½ Hours]

[Max. Marks :70

Instructions to candidates:

- 1) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6 from section - I and answer Q7 or Q8, Q9 or Q10, Q11 or Q12 from section - II.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Assume suitable data, if necessary.*

SECTION - I

Q1) a) Explain principles of management. **[6]**

b) Differentiate between: Work measurement and method study. **[4]**

OR

Q2) a) Write short note on

i) Span of control

ii) Delegation of Authority

iii) Responsibility. **[6]**

b) Differentiate between work sampling and time study. **[4]**

Q3) a) Explain in detail “Work sampling process”. **[5]**

b) Explain with proper example “Multiple Activity Chart”. **[5]**

OR

Q4) a) Write short note on **[6]**

i) Travel chart

ii) String diagram.

b) State various work measurement techniques. Explain any one of them. **[4]**

P.T.O.

- Q5) a)** Explain with examples Method Study Symbols for recording facts. [5]
b) Explain functions of PPC. [5]

OR

- Q6) a)** Why allowances are considered in time study? what are various allowances considered? [5]
b) A work study was conducted in a machine shop. Following data has been recorded. [5]
- i) No. of observations-2000
 - ii) No. of activity = 500
 - iii) Ratio between manual and machine = 3:1
 - iv) Rating = 85%
 - v) No. of pieces = 120
 - vi) Duration of study = 60 hours

Calculate standard time per piece assuming 15% relaxation allowance.

SECTION - II

- Q7) a)** Write short note on forecasting methods. [5]
b) What is selective inventory control? Explain briefly ABC analysis and FSN analysis. [5]
c) Write short note on- [5]
- i) MRP - I
 - ii) MRP II

OR

- Q8) a)** A manufacturer has to supply his customers 3600 units of his product per year uniform throughout the period of the year. Stock-outs are not permitted. Inventory carrying cost amounts to Rs. 1.20 per unit per annum. The order processing cost is Rs. 80 per order. [6]

Calculate:-

- i) Economic order quantity

- ii) The optimum number of orders per year
 - iii) Average inventory cost
 - iv) Total inventory cost including material cost
 - v) Indicates purchase cycle graphically and order the important parameters in the graph.
- b) Explain Moving Average Method for demand forecasting. [4]
- c) Write note on [5]
- i) Aggregate planning
 - ii) Capacity planning
- Q9)** a) Explain product layout with advantages and disadvantages. Explain single facility location. [5]
- b) What is line balancing? What are different methods of line balancing? Explain Largest Candidate Rule. [5]
- c) Write short note on
- i) Stores management
 - ii) Push and pull systems. [5]
- OR
- Q10)** a) Define material handling. List material handling equipments and describe any three of them. [5]
- b) What is importance of standard costing? Explain method to calculate standard cost. [6]
- c) Write short note on [4]
- i) Unit load
 - ii) Work cells.

Q11)a) What do you understand by BEA? What are uses of BEA? [4]

b) A company has given following information [6]

Data	Rs
Selling price	10/- unit
Variable Cost	2/-unit
Fixed Cost	40,000/-

Determine-

- i) Profit when sales are Rs. 1,00,000/-
- ii) BEP
- iii) Sales when it is desirable to earn profit of Rs. 30,000/-

OR

Q12)a) A non variable manufacturing costs and operating expenses of a company are Rs. 40,000 a year, the marginal contribution is 40% of sales.

- i) What is company's BEP?
- ii) What profit can be expected on the sales of Rs. 120000?
- iii) What sales volume is required to produce a profit of Rs. 20,000?[6]

b) Write short note on. [4]

- i) Profit and loss account
- ii) Payback method

