

* To be costed @ 15% per annum.

- i) If the volume of production is to be 5,00,000 units/year which is the preferred location?
- ii) If the volume is expanded to 7,00,000 units would the decision change? (10 Marks)

- 4 a. What do you mean by Line Balancing? (03 Marks)
- b. What are the different types of plant layouts? Explain with their features which type of layout is suitable for Hospital and Car Manufacturing Industry. (07 Marks)
- c. Calculate the standard time / article produced from the following data obtained by a work sampling study. (10 Marks)
- Total number of observations = 3000 ; Working observations = 2500 ;
 No. of units produced during 100 hrs duration = 6000 ;
 Proportion of manual labor = 75% ; Proportion of machine time = 25% ;
 Observed rating factor for manual labor = 120% ; Total allowances = 15% of normal time.

- 5 a. What is Aggregate Planning? (03 Marks)
- b. Describe the process of Material Requirement Planning and its objectives. (07 Marks)
- c. Calculate the Vendor Rating for the following : (10 Marks)
- Weightage Quality = 50 ; Delivery = 25 ; Price = 15 ; Response to suggestion = 10.

| Supplier's Data | I | II | III |
|------------------------|-----------|---------|-----------|
| Quality supplied | 108 | 90 | 80 |
| Quantity accepted | 102 | 90 | 75 |
| Price of item | Rs 1.0 | Rs 1.2 | Rs 1.1 |
| Delivery Promised | 3 weeks | 4 weeks | 4 weeks |
| Actual delivery | 2.7 weeks | 5 weeks | 4.4 weeks |
| Response to suggestion | 90% | 85% | 100% |

- 6 a. What is Master Production Scheduling (MPS)? (03 Marks)
- b. What is Method Study? Explain how method study is conducted in a Manufacturing Firm. (07 Marks)
- c. A company has to select one location out of the five alternatives considered for a new plant. The Annual Operating costs and other intangible factors are given below for these five locations :

| FACTORS | LOCATION | | | | |
|------------------------------|------------|------------|-------------|-------------|-------------|
| | A | B | C | D | E |
| i) Economic factor | | | | | |
| Labour costs | 1,20,000 | 1,10,000 | 1,60,000 | 85,000 | 75,000 |
| Transportation costs | 10,000 | 8,000 | 7,000 | 12,000 | 14,000 |
| Local Taxes | 17,000 | 20,000 | 25,000 | 19,000 | 17,000 |
| Cost of power | 21,000 | 29,000 | 25,000 | 18,000 | 23,000 |
| Other costs | 16,000 | 11,000 | 12,000 | 16,000 | 18,000 |
| ii) Intangible factor | | | | | |
| Community attitude | Very Good | Fair | Good | Fair | Very Good |
| Labor availability | Good | Very Good | Fair | Outstanding | Acceptable |
| Quality of Transportation | Fair | Acceptable | Outstanding | Acceptable | Fair |
| Quality of Life | Acceptable | Fair | Good | Very Good | Outstanding |

- i) On the basis of annual operating costs, which site would you choose?
- ii) Devise a method of quantifying the intangible costs and integrate them with the cost data into the overall evaluation. Which is best now? (10 Marks)

- 7 a. Explain in detail the organization chart for a commercial bank. (05 Marks)
 b. Explain the role of operations manager in an organization. (05 Marks)
 c. Briefly explain the role and influence of IT in production and operations management. (05 Marks)
 d. In a work sampling study, a mechanic was found to be idle for 20% of the time. Find out the number of observations needed to confirm to the above figures with a confidence level of 95% and a relative error level by $\pm 5\%$. (05 Marks)
- 8 a. Monthly Demand for a product is 2000 units, cost per unit is Rs 12/-. It will cost Rs 3000 to place two orders. The average inventory carrying cost per unit is 8% per year.
 i) Calculate EOQ. Also calculate reorder level if the lead time is 15 days assuming 1500 units as safety stock.
 ii) Shall the company accept the discount offer if suppliers gives 5% discount on the single order purchasing? (10 Marks)
- b. An Ice Cream Parlour offers the following menu for its customers. The Unit selling Price, Variable production cost and expected sales per day are shown in Table.

| Item / flavor | S.P / unit | V.C / unit | Expected sales (units) |
|---------------|------------|------------|------------------------|
| Black current | 30 | 12 | 700 |
| Straw Berry | 8 | 3 | 700 |
| Pista | 15 | 5 | 500 |
| Vanila | 7 | 4 | 500 |
| Candy | 3 | 2 | 300 |

Fixed costs are Rs 20,000/day. Determine the Break Even sales/day.

(10 Marks)
