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08MBA33

Third Semester MBA Degree Examination, December 2010
Operations Management

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions.*

1 a. What do you mean by BEP?   **(03 Marks)**
   b. Briefly explain the uses and limitations of Break Even Analysis (BEA).   **(07 Marks)**
   c. Break even production of a firm is 5000 units. Its fixed cost is Rs.50000 and the variable cost is Rs.25/unit. Find out the price of the product. How much the firm should produce to earn a profit of Rs.25000?   **(10 Marks)**

2 a. Differentiate between long range and short range sales forecasts in production management.
                                                                                            (03 Marks)
   b. Bring out various techniques of forecasting.   **(07 Marks)**
   c. The table below gives the actual demand in units for the past 10 month period.

Month	1	2	3	4	5	6	7	8	9	10
Demand	100	105	108	110	112	114	120	130	128	140

   Compute a weighted 3 month moving average, where, the weights are highest for the latest months and descend the order of 3, 2, 1.   **(10 Marks)**

3 a. State the major factors influencing the plant location.   **(03 Marks)**
   b. What is meant by plant layout? Explain the principles of plant layout.   **(07 Marks)**
   c. Potential locations A, B and C have the cost structure shown, for producing a product, expected to sell at Rs.100 per unit. Find the most economical location for an expected volume of 2000 units per year. Also determine the range of annual volume of production for which each of the locations A, B and C would be most economical.   **(10 Marks)**

Location	Fixed cost / year	Variable cost per unit
A	Rs.25000	Rs.50
B	Rs.50000	Rs.25
C	Rs.80000	Rs.15

4 a. Define the term method study and state its objectives.   **(03 Marks)**
   b. What is productivity? Bringout its importance.   **(07 Marks)**
   c. Calculate the standard time per article produced, from the following data, obtained by work sampling study:
       Total no. of observations – 2500;
       No of working observations – 2100;
       Proportion of manual labour – $\frac{2}{3}$;
       No. of units produced in 100 hours – 6000 nos.;
       Observation rating factor – 115%;
       Proportion of machine time – $\frac{1}{3}$;
       Total allowance – 12% of normal time   **(10 Marks)**

5   a.   What do you mean by Capacity Requirement Planning (CRP)?   **(03 Marks)**

     b.   Define the term aggregate planning and state its importance.   **(07 Marks)**

     c.   Calculate the vendor rating for the following weightage. Quality – 50, Delivery – 25, Price – 15. Responses to suggestions – 10.   **(10 Marks)**

Suppliers data	I	II	III
Quantity supplied	108	90	80
Quantity accepted	102	90	75
Price of the item	Re.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
Responses to suggestions	90%	85%	100%

6   a.   What is statistical quality control?   **(03 Marks)**

     b.   Define materials management. Discuss the functions of a purchasing department.   **(07 Marks)**

     c.   An auto industry purchases spark plugs at the rate of Rs.25 per piece. The annual consumption of spark plugs is 18000 pieces. If the ordering cost is Rs.250 per order and carrying cost is 25% per annum, what would be the economic order quantity? If the supplier of spark plugs offers a discount of 5% for order quantity of 3000 nos. per order, do you accept the discount offer?   **(10 Marks)**

7   a.   What is the PDCA cycle?   **(03 Marks)**

     b.   Explain briefly, seven quality control tools.   **(07 Marks)**

     c.   Discuss the Malcolm Baldrige national quality award in detail, with the help of a model.   **(10 Marks)**

8   a.   How do you evaluate the MRP system?   **(03 Marks)**

     b.   What are the benefits of ISO 9000? State the steps involved in obtaining the ISO certification.   **(07 Marks)**

     c.   Samples of 4 each were taken for study, the measurement of which were noted as follows:

Sample No.	Measurements in mm			
1	20	22	25	24
2	18	23	20	26
3	24	25	22	20
4	23	21	26	24
5	24	25	24	21

Draw a control chart for mean ($\overline{X}$)

($A_2 = 0.73$ for sample size 4)   **(10 Marks)**

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