5th Sem-18ME56,Operations Management-IAT-2

Forecast for 9th year using the following data and simple exponential smoothing technique with initial forecast being 85 and choosing smoothing constant as 0.5 Year and demand in lakhs of Rupees respectively is as follows Year 2001 -90, 2002-100, 2003-107, 2004- 113, 2005-123, 2006-136, 2007-144, 2008-155.

10 points

- ◯ 135 Lakhs
- ◯ 138 Lakhs
- ⦿ 145 Lakhs
- ◯ 150 Lakhs

A manufacturer of tires believes that their exists a linear relationship between automobiles sold in the year and the sales of the tyres two years later the data for the past 10 years are given below. Establish a linear regression line Sales of automobiles in lakhs 4.0 4.5 4.2 5.5 5.8 5.5 6.2 7.2 6.7 7.9 Sales of tyres 2 years later in lakhs 8.0 7.9 8.1 8.4 8.1 8.6 9.1 8.9 9.1 9.6 the linear regression line equation would be;

10 points

- ⦿ Y=6.157+0.43X

- ◯ Y=5.123+0.39X

- ◯ Y=7.357+0.64X

- ◯ Y=7.25+0.93X

If all the processing equipment and machines are arranged according to the sequence of operations of a product the layout is known as

1 point

- ⦿ Product Layout

- ◯ Process Layout

- ◯ Fixed position Layout

- ◯ Combination Layout

For ship manufacturing, the type of layout preferred is

1 point

- ◯ Product Layout

- ◯ Process Layout

- ⦿ Fixed position Layout

- ◯ Combination Layout

Which of the following industries should be located near the vicinity of raw materials 1 point

○ Bi-Cycles

○ Home appliances

○ Cars Manufacturing

◉ Steel Mills

Under ideal conditions, a picture frame manufacturing facility can produce 480 frames per day. Under normal conditions, the company schedules 135 frames per day. Current market conditions and production strategy have combined to limit production to 120 frames per day. What is the approximate utilization relative to effective capacity 2 points

○ 75%

◉ 89%

○ 95%

○ 68%

Short-term capacity planning deals with which of the following factors 1 point

○ Workforce Size

○ Overtime budgets

○ Inventories

◉ All the above

Output measures of capacity are preferred for 1 point

- ● High volume processes
- ○ Flexible flow processes
- ○ Mass customization
- ○ None of the above

The maximum output that a process or facility could achieve under normal conditions is 1 point
called

- ○ Normal Capacity
- ○ Capacity utilization
- ○ Peak capacity
- ● Effective capacity

A product is produced in 3 factories F1, F2, and F3. Their production capacity is 100, 150, 175 respectively. The product is supplied to 4 stores S1, S2, S3 and S4 the requirements of which are 75, 200, 25 and 125 respectively. Unit costs of transportation are given below in thousands of rupees: F1-S1 = 8, F1-S2 = 6, F1-S3 = 5, F1-S4 = 4, F2-S1 = 7, F2-S2 = 3, F2-S3 = 9, F2-S4 = 2, F3-S1 = 6, F3-S2 = 5, F3-S3 = 4, F3-S4 = 3,The minimum total transportation cost using North west corner rule would be;

○ 1400 thousands

○ 1600 thousands

◉ 1800 thousands

○ 1900 thousands

In which of the following forecasting technique, subjective inputs obtained from various sources are analyzed   1 point

◉ Judgemental forecast

○ Time series forecast

○ Associative model

○ All of the above

In which of the following forecasting technique, data obtained from past experience is analyzed — 1 point

- ( ) Judgemental forecast
- (●) Time series forecast
- ( ) Associative model
- ( ) All of the above

Delphi method is used for — 1 point

- (●) Judgemental forecast
- ( ) Time series forecast
- ( ) Associative model
- ( ) All of the above

Short term regular variations related to the calendar or time of day is known as — 1 point

- ( ) Trend
- (●) Seasonality
- ( ) Cycles
- ( ) Random variations

Calculate four periods moving average forecast from the last six periods respectively are 38,40,42,40,44,38

2 points

- ○ 40
- ● 41
- ○ 42
- ○ 43

Calculate a weighted average forecast using a weight of .50 to the most recent period, .40 for the next recent period and .30 for the next period demand for the last six periods respectively are 38,40,42,40,44,38

2 points

- ○ 46.6
- ○ 47.6
- ● 48.6
- ○ 49.6

A linear trend equation has the form

1 point

- ○ F=a-bt
- ● F=a+bt
- ○ F=2a-bt
- ○ F=2a+bt

Operations generated forecasts often not to do with   1 point

○ Inventory requirements

○ Resource needs

○ Time requirements

◉ Sales

Which of the following is not true for forecasting   1 point

○ Forecasts are rarely perfect

○ The underlying casual system will remain same in the future

○ Forecast for group of items is accurate than individual item

◉ Short range forecasts are less accurate than long range forecasts

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Which of the following is not a forecasting technique   1 point

○ Judgemental

○ Time series

◉ Time horizon

○ Delphi

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