OperationsÂ Management 14th edition Stevenson Test Bank

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Operations Management 14th Edition by Stevenson CH04

ANSWERS ARE LOCATED IN THE SECOND PART OF THIS DOCUMENT

TRUE/FALSE - Write 'T' if the statement is true and 'F' if the statement is false.

1) Forecasting techniques generally assume an existing causal system that will continue to exist in the future.

1) _____

- ◎ true
- ◎ false

Question Details
Topic : Features Common to All Forecasts
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-02 Explain why forecasts are generally wrong.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

2) For new products in a strong growth mode, a low alpha will minimize forecast errors when using exponential smoothing techniques.

2) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

3) Once accepted by managers, forecasts should be held firm regardless of new input since many plans have been made using the original forecast.

3) _____

- ◎ true
- ◎ false

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Question Details
Accessibility : Keyboard Navigation
Difficulty : 1 Easy
Bloom's : Understand
Learning Objective : 03-04 Outline the steps in the forecasting process.
Topic : Steps in the Forecasting Process
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

4) Forecasts for groups of items tend to be less accurate than forecasts for individual items because forecasts for individual items don't include as many influencing factors.

4) _____

- ◎ true
- ◎ false

Question Details
Topic : Features Common to All Forecasts
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-02 Explain why forecasts are generally wrong.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

5) Forecasts help managers both to plan the system itself and to provide valuable information for using the system.

5) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-01 List features common to all forecasts.
Topic : Introduction
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

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6) Organizations that are capable of responding quickly to changing requirements can use a shorter forecast horizon and therefore benefit from more accurate forecasts.

6) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Bloom's : Understand
Learning Objective : 03-16 Describe the key factors and trade-offs to consider when choosing a foreca
Topic : Operations Strategy
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

7) When new products or services are introduced, focus forecasting models are an attractive option.

7) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

8) The purpose of the forecast should be established first so that the level of detail, amount of resources, and accuracy level can be understood.

8) _____

- ◎ true
- ◎ false

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Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-04 Outline the steps in the forecasting process.
Topic : Steps in the Forecasting Process
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

9) Forecasts based on time-series (historical) data are referred to as associative forecasts.

9) _____

◎ true
◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-06 Describe four qualitative forecasting techniques.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

10) Time-series techniques involve the identification of explanatory variables that can be used to predict future demand.

10) _____

◎ true
◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-16 Describe the key factors and trade-offs to consider when choosing a foreca
Topic : Approaches to Forecasting
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

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11) A consumer survey is an easy and sure way to obtain accurate input from future customers since most people enjoy participating in surveys.

11) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-06 Describe four qualitative forecasting techniques.
Topic : Qualitative Forecasts
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

12) The Delphi approach involves the use of a series of questionnaires to achieve a consensus forecast.

12) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-06 Describe four qualitative forecasting techniques.
Topic : Qualitative Forecasts
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

13) Exponential smoothing adds a percentage (called alpha) of the last period's forecast to estimate the next period's demand.

13) _____

- ◎ true
- ◎ false

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Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

14) The shorter the forecast period, the more accurately the forecasts tend to track what actually happens.

14) _____

- ◎ true
- ◎ false

Question Details
Topic : Features Common to All Forecasts
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-02 Explain why forecasts are generally wrong.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

15) Forecasting techniques that are based on time-series data assume that future values of the series will duplicate past values.

15) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
Learning Objective : 03-06 Describe four qualitative forecasting techniques.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

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16) Trend-adjusted exponential smoothing uses double smoothing to add twice the forecast error to last period's actual demand.

16) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-12 Prepare a trend-adjusted exponential smoothing forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

17) Forecasts based on an average tend to exhibit less variability than the original data.

17) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
Learning Objective : 03-08 Prepare a moving average forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

18) The naive approach to forecasting requires a linear trend line.

18) _____

- ◎ true
- ◎ false

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Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-07 Use a naive method to make a forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

19) The naive forecast is limited in its application to series that reflect no trend or seasonality.

19) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : 1 Easy
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
Learning Objective : 03-07 Use a naive method to make a forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

20) The naive forecast can serve as a quick and easy standard of comparison against which to judge the cost and accuracy of other techniques.

20) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : 1 Easy
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
Learning Objective : 03-07 Use a naive method to make a forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

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21) A moving average forecast tends to be more responsive to changes in the data series when more data points are included in the average.

21) _____

◎ true
◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
Learning Objective : 03-08 Prepare a moving average forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

22) In order to update a moving average forecast, the values of each data point in the average must be known.

22) _____

◎ true
◎ false

Question Details
Accessibility : Keyboard Navigation
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
Learning Objective : 03-08 Prepare a moving average forecast.
Difficulty : 3 Hard
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

23) Forecasts of future demand are used by operations people to plan capacity.

23) _____

◎ true
◎ false

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Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-01 List features common to all forecasts.
Topic : Introduction
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

24) An advantage of a weighted moving average is that recent actual results can be given more importance than what occurred a while ago.

24) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
Learning Objective : 03-09 Prepare a weighted-average forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

25) Exponential smoothing is a form of weighted averaging.

25) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

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26) A smoothing constant of .1 will cause an exponential smoothing forecast to react more quickly to a sudden change than a smoothing constant value of .3.

26) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
Difficulty : 3 Hard
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

27) The T in the model TAF = S + T represents the time dimension (which is usually expressed in weeks or months).

27) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-12 Prepare a trend-adjusted exponential smoothing forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

28) Trend-adjusted exponential smoothing requires selection of two smoothing constants.

28) _____

- ◎ true
- ◎ false

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Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-12 Prepare a trend-adjusted exponential smoothing forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

29) An advantage of trend-adjusted exponential smoothing over the linear trend equation is its ability to adjust over time to changes in the trend.

29) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-12 Prepare a trend-adjusted exponential smoothing forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

30) A seasonal relative (or seasonal indexes) is expressed as a percentage of average or trend.

30) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
Learning Objective : 03-12 Prepare a trend-adjusted exponential smoothing forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

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31) In order to compute seasonal relatives, the trend of past data must be computed or known, which means that for brand-new products this approach cannot be used.

31) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
Learning Objective : 03-13 Compute and use seasonal relatives.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

32) Removing the seasonal component from a data series (deseasonalizing) can be accomplished by dividing each data point by its appropriate seasonal relative.

32) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-13 Compute and use seasonal relatives.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

33) If a pattern appears when a dependent variable is plotted against time, one should use time series analysis instead of simple linear regression.

33) _____

- ◎ true
- ◎ false

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Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Learning Objective : 03-14 Compute and use regression and correlation coefficients.
Topic : Associative Forecasting Techniques
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

34) Nonlinear and multiple regression procedures permit us to extend associative models to relationships that are nonlinear or involve more than one predictor variable.

34) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Learning Objective : 03-14 Compute and use regression and correlation coefficients.
Topic : Associative Forecasting Techniques
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

35) The sample standard deviation of forecast error is estimated by the square root of MSE.

35) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Monitoring Forecast Error
Learning Objective : 03-15 Construct control charts and use them to monitor forecast errors.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

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36) Correlation measures the strength and direction of a relationship between variables.

36) _____

◎ true
◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Learning Objective : 03-14 Compute and use regression and correlation coefficients.
Topic : Associative Forecasting Techniques
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

37) MAD is equal to the square root of MSE, which is why we calculate the easier MSE and then calculate the more difficult MAD.

37) _____

◎ true
◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Forecast Accuracy
Learning Objective : 03-05 Summarize forecast errors and use summaries to make decisions.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

38) In exponential smoothing, an alpha of 1.0 will generate the same forecast that a naive forecast would yield.

38) _____

◎ true
◎ false

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Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

39) A forecast method is generally deemed to perform adequately when the errors exhibit an identifiable pattern.

39) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Bloom's : Understand
Topic : Monitoring Forecast Error
Learning Objective : 03-15 Construct control charts and use them to monitor forecast errors.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

40) A control chart involves setting action limits for cumulative forecast error.

40) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Monitoring Forecast Error
Learning Objective : 03-15 Construct control charts and use them to monitor forecast errors.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

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41) A tracking signal focuses on the ratio of cumulative forecast error to the corresponding value of MAD.

41) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Monitoring Forecast Error
Learning Objective : 03-15 Construct control charts and use them to monitor forecast errors.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

42) The use of a control chart assumes that random errors are normally distributed about a mean of zero.

42) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 3 Hard
Topic : Monitoring Forecast Error
Learning Objective : 03-15 Construct control charts and use them to monitor forecast errors.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

43) Bias exists when forecasts tend to be greater or less than the actual values of time series.

43) _____

- ◎ true
- ◎ false

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Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Topic : Monitoring Forecast Error
Learning Objective : 03-15 Construct control charts and use them to monitor forecast errors.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

44) Bias is measured by the ratio of the cumulative sum of forecast errors to the mean absolute deviation (MAD).

44) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Monitoring Forecast Error
Learning Objective : 03-15 Construct control charts and use them to monitor forecast errors.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

45) Seasonal relatives can be used to deseasonalize data or incorporate seasonality in a forecast.

45) _____

- ◎ true
- ◎ false

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-13 Compute and use seasonal relatives.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

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46) The best forecast is not necessarily the most accurate.

46) _____

◎ true
◎ false

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Bloom's : Understand
Learning Objective : 03-16 Describe the key factors and trade-offs to consider when choosing a foreca
Topic : Choosing a Forecasting Technique
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

MULTIPLE CHOICE - Choose the one alternative that best completes the statement or answers the question.

47) Which of the following is a potential shortcoming of using sales force opinions in demand forecasting?

47) _____

A) Members of the sales force often have substantial histories of working with and understanding their customers.
B) Members of the sales force often are well aware of customers' future plans.
C) Members of the sales force have direct contact with consumers.
D) Members of the sales force can have difficulty distinguishing between what customers would like to do and what they actually will do.
E) Customers often are quite open with members of the sales force with regard to future plans.

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Question Details
Accessibility : Keyboard Navigation
Difficulty : 1 Easy
Bloom's : Understand
Learning Objective : 03-06 Describe four qualitative forecasting techniques.
Topic : Qualitative Forecasts
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

48) Suppose a four-period weighted average is being used to forecast demand. Weights for the periods are as follows: $w_{t-4} = 0.1$, $w_{t-3} = 0.2$, $w_{t-2} = 0.3$ and $w_{t-1} = 0.4$. Demand observed in the previous four periods was as follows: $A_{t-4} = 380$, $A_{t-3} = 410$, $A_{t-2} = 390$, and $A_{t-1} = 400$. What will be the demand forecast for period t?

48) _____

A) 402
B) 397
C) 399
D) 393
E) 403

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-09 Prepare a weighted-average forecast.
Bloom's : Apply
AACSB : Analytical Thinking
Accessibility : Screen Reader Compatible

49) Suppose a three-period weighted average is being used to forecast demand. Weights for the periods are as follows: $w_{t-3} = 0.2$, $w_{t-2} = 0.3$ and $w_{t-1} = 0.5$. Demand observed in the previous three periods was as follows: $A_{t-3} = 2{,}200$, $A_{t-2} = 1{,}950$, and $A_{t-1} = 2{,}050$. What will be the demand forecast for period t?

49) _____

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A) 2,000
B) 2,095
C) 1,980
D) 2,050
E) 1,875

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-09 Prepare a weighted-average forecast.
Bloom's : Apply
AACSB : Analytical Thinking
Accessibility : Screen Reader Compatible

50) When choosing a forecasting technique, a critical trade-off that must be considered is that between:

50) _____

A) time series and associative.
B) seasonality and cyclicality.
C) length and duration.
D) simplicity and complexity.
E) cost and accuracy.

Question Details
Accessibility : Keyboard Navigation
Difficulty : 1 Easy
Bloom's : Understand
Learning Objective : 03-16 Describe the key factors and trade-offs to consider when choosing a foreca
Topic : Choosing a Forecasting Technique
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

51) The more novel a new product or service design is, the more forecasters have to rely on

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51) _____

A) subjective estimates.
B) seasonality.
C) cyclicality.
D) historical data.
E) smoothed variation.

Question Details
Accessibility : Keyboard Navigation
Difficulty : 1 Easy
Bloom's : Understand
Learning Objective : 03-16 Describe the key factors and trade-offs to consider when choosing a foreca
Topic : Choosing a Forecasting Technique
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

52) Forecasts based on judgment and opinion do not include:

52) _____

A) executive opinion.
B) salesperson opinion.
C) second opinions.
D) customer surveys.
E) Delphi methods.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Learning Objective : 03-06 Describe four qualitative forecasting techniques.
Topic : Qualitative Forecasts
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

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53) Which of the following is/are a primary input into capacity, sales, and production planning?

53) _____

A) product design
B) market share
C) ethics
D) globalization
E) demand forecasts

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-01 List features common to all forecasts.
Topic : Introduction
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

54) Which of the following features would not generally be considered common to all forecasts?

54) _____

A) Assumption of a stable underlying causal system.
B) Actual results will differ somewhat from predicted values.
C) Historical data is available on which to base the forecast.
D) Forecasts for groups of items tend to be more accurate than forecasts for individual items.
E) Accuracy decreases as the time horizon increases.

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Question Details
Topic : Features Common to All Forecasts
Accessibility : Keyboard Navigation
Bloom's : Understand
Difficulty : 3 Hard
Learning Objective : 03-02 Explain why forecasts are generally wrong.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

55) Which of the following is not a step in the forecasting process?

55) _____

A) Determine the purpose and level of detail required.
B) Eliminate all assumptions.
C) Establish a time horizon.
D) Select a forecasting model.
E) Monitor the forecast.

Question Details
Topic : Features Common to All Forecasts
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Learning Objective : 03-04 Outline the steps in the forecasting process.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

56) Minimizing the sum of the squared deviations around the line is called:

56) _____

A) mean squared error technique.
B) mean absolute deviation.
C) double smoothing.
D) least squares estimation.
E) predictor regression.

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Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Learning Objective : 03-14 Compute and use regression and correlation coefficients.
Topic : Associative Forecasting Techniques
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

57) The two general approaches to forecasting are:

57) _____

A) mathematical and statistical.
B) qualitative and quantitative.
C) judgmental and qualitative.
D) historical and associative.
E) precise and approximation.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-04 Outline the steps in the forecasting process.
Topic : Approaches to Forecasting
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

58) Which of the following is not a type of judgmental forecasting?

58) _____

A) executive opinions
B) sales force opinions
C) consumer surveys
D) the Delphi method
E) time series analysis

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Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-04 Outline the steps in the forecasting process.
Topic : Approaches to Forecasting
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

59) Accuracy in forecasting can be measured by:

59) _____

A) MSE.
B) MRP.
C) MPS.
D) MTM.
E) MTE.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 3 Hard
Topic : Forecast Accuracy
Learning Objective : 03-05 Summarize forecast errors and use summaries to make decisions.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

60) Which of the following would be an advantage of using a sales force composite to develop a demand forecast?

60) _____

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A) The sales staff is least affected by changing customer needs.
B) The sales force can easily distinguish between customer desires and probable actions.
C) The sales staff is often aware of customers' future plans.
D) Salespeople are least likely to be influenced by recent events.
E) Salespeople are least likely to be biased by sales quotas.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Understand
Learning Objective : 03-06 Describe four qualitative forecasting techniques.
Topic : Qualitative Forecasts
Difficulty : 3 Hard
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

61) Which phrase most closely describes the Delphi technique?

61) _____

A) associative forecast
B) consumer survey
C) series of questionnaires
D) developed in India
E) historical data

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-06 Describe four qualitative forecasting techniques.
Topic : Qualitative Forecasts
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

62) The forecasting method which uses anonymous questionnaires to achieve a consensus forecast is:

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62) _____

A) sales force opinions.
B) consumer surveys.
C) the Delphi method.
D) time series analysis.
E) executive opinions.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-06 Describe four qualitative forecasting techniques.
Topic : Qualitative Forecasts
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

63) One reason for using the Delphi method in forecasting is to:

63) _____

A) reduce the risk that one individual's opinion will prevail.
B) achieve a high degree of accuracy.
C) maintain accountability and responsibility.
D) be able to replicate results.
E) prevent hurt feelings.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Learning Objective : 03-06 Describe four qualitative forecasting techniques.
Topic : Qualitative Forecasts
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

64) Detecting nonrandomness in errors can be done using:

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64) _____

A) MSEs.
B) MAPs.
C) control charts.
D) correlation coefficients.
E) strategies.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Monitoring Forecast Error
Learning Objective : 03-15 Construct control charts and use them to monitor forecast errors.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

65) Gradual, long-term movement in time series data is called:

65) _____

A) seasonal variation.
B) cycles.
C) irregular variation.
D) trend.
E) random variation.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-11 Prepare a linear trend forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

66) The primary difference between seasonality and cycles is:

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66) _____

A) the duration of the repeating patterns.
B) the magnitude of the variation.
C) the ability to attribute the pattern to a cause.
D) the direction of the movement.
E) there are only four seasons but 30 cycles.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Topic : Forecasts Based on Time-Series Data
Difficulty : 3 Hard
Learning Objective : 03-13 Compute and use seasonal relatives.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

67) Averaging techniques are useful for:

67) _____

A) distinguishing between random and nonrandom variations.
B) smoothing out fluctuations in time series.
C) eliminating historical data.
D) providing accuracy in forecasts.
E) average people.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-08 Prepare a moving average forecast.
Difficulty : 3 Hard
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

68) Putting forecast errors into perspective is best done using

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68) _____

A) exponential smoothing.
B) MAPE.
C) linear decision rules.
D) MAD.
E) hindsight.

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Bloom's : Understand
Topic : Forecast Accuracy
Learning Objective : 03-05 Summarize forecast errors and use summaries to make decisions.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

69) Using the latest observation in a sequence of data to forecast the next period is

69) _____

A) a moving average forecast.
B) a naive forecast.
C) an exponentially smoothed forecast.
D) an associative forecast.
E) a regression analysis.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-07 Use a naive method to make a forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

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70) For the data given below, what would the naive forecast be for period 5?

Period	Value
1	58
2	59
3	60
4	61

70) _____

A) 58
B) 62
C) 59.5
D) 61
E) cannot tell from the data given

Question Details
Accessibility : Keyboard Navigation
Difficulty : 1 Easy
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-07 Use a naive method to make a forecast.
Bloom's : Apply
AACSB : Analytical Thinking

71) Moving average forecasting techniques do the following:

71) _____

A) Immediately reflect changing patterns in the data.
B) Lead changes in the data.
C) Smooth variations in the data.
D) Operate independently of recent data.
E) Assist when organizations are relocating.

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Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-08 Prepare a moving average forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

72) Which is not a characteristic of simple moving averages applied to time series data?

72) _____

A) smoothes random variations in the data
B) weights each historical value equally
C) lags changes in the data
D) requires only last period's forecast and actual data
E) smoothes real variations in the data

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
Learning Objective : 03-08 Prepare a moving average forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

73) In order to increase the responsiveness of a forecast made using the moving average technique, the number of data points in the average should be:

73) _____

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A) decreased.
B) increased.
C) multiplied by a larger alpha.
D) multiplied by a smaller alpha.
E) eliminated if the MAD is greater than the MSE.

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
Learning Objective : 03-08 Prepare a moving average forecast.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

74) A forecast based on the previous forecast plus a percentage of the forecast error is:

74) _____

A) a naive forecast.
B) a simple moving average forecast.
C) a centered moving average forecast.
D) an exponentially smoothed forecast.
E) an associative forecast.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

75) Which is not a characteristic of exponential smoothing?

75) _____

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A) smoothes random variations in the data
B) weights each historical value equally
C) has an easily altered weighting scheme
D) has minimal data storage requirements
E) smoothes real variations in the data

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Difficulty : 3 Hard
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

76) Which of the following smoothing constants would make an exponential smoothing forecast equivalent to a naive forecast?

76) _____

A) 0
B) 0.01
C) 0.1
D) 0.5
E) 1.0

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

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77) Simple exponential smoothing is being used to forecast demand. The previous forecast of 66 turned out to be four units less than actual demand. The next forecast is 66.6, implying a smoothing constant, alpha, equal to:

77) _____

A) 0.01.
B) 0.10.
C) 0.15.
D) 0.20.
E) 0.60.

Question Details
Accessibility : Keyboard Navigation
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Difficulty : 3 Hard
Bloom's : Apply
AACSB : Analytical Thinking
Accessibility : Screen Reader Compatible

78) Given an actual demand of 59, a previous forecast of 64, and an alpha of 0.3, what would the forecast for the next period be using simple exponential smoothing?

78) _____

A) 36.9
B) 57.5
C) 60.5
D) 62.5
E) 65.5

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Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Bloom's : Apply
AACSB : Analytical Thinking
Accessibility : Screen Reader Compatible

79) Given an actual demand of 105, a forecasted value of 97, and an alpha of 0.4, the simple exponential smoothing forecast for the next period would be:

79) _____

A) 80.8.
B) 93.8.
C) 100.2.
D) 101.8.
E) 108.2.

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Bloom's : Apply
AACSB : Analytical Thinking
Accessibility : Screen Reader Compatible

80) Which of the following possible values of alpha would cause exponential smoothing to respond the most quickly to forecast errors?

80) _____

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A) 0
B) 0.01
C) 0.05
D) 0.10
E) 0.15

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

81) A manager uses the following equation to predict monthly receipts: $Y_t = 40{,}000 + 150t$. What is the forecast for July if t = 0 in April of this year?

81) _____

A) 40,450
B) 40,600
C) 42,100
D) 42,250
E) 42,400

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Bloom's : Apply
AACSB : Analytical Thinking
Learning Objective : 03-11 Prepare a linear trend forecast.
Accessibility : Screen Reader Compatible

82) In trend-adjusted exponential smoothing, the trend-adjusted forecast consists of

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82) _____

A) an exponentially smoothed forecast and a smoothed trend factor.
B) the most recent actual value and an estimated trend value.
C) the old forecast adjusted by a trend factor.
D) the old forecast and a smoothed trend factor.
E) a moving average and a trend factor.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-12 Prepare a trend-adjusted exponential smoothing forecast.
Difficulty : 3 Hard
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

83) In the additive model for seasonality, seasonality is expressed as a _____ adjustment to the average; in the multiplicative model, seasonality is expressed as a _____ adjustment to the average.

83) _____

A) quantity; percentage
B) percentage; quantity
C) quantity; quantity
D) percentage; percentage
E) qualitative; quantitative

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-13 Compute and use seasonal relatives.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

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84) Which technique is used in computing seasonal relatives?

84) _____

A) double smoothing
B) Delphi
C) mean squared error
D) centered moving average
E) exponential smoothing

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-13 Compute and use seasonal relatives.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

85) A persistent tendency for forecasts to be greater than or less than the actual values is called:

85) _____

A) bias.
B) tracking.
C) control charting.
D) positive correlation.
E) linear regression.

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Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Monitoring Forecast Error
Learning Objective : 03-15 Construct control charts and use them to monitor forecast errors.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

86) Which of the following might be used to develop an estimate of the cyclical component of a forecast?

86) _____

A) leading variable
B) mean squared error
C) Delphi technique
D) exponential smoothing
E) mean absolute deviation

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-13 Compute and use seasonal relatives.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

87) The primary method for associative forecasting is:

87) _____

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A) sensitivity analysis.
B) regression analysis.
C) simple moving averages.
D) centered moving averages.
E) exponential smoothing.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Learning Objective : 03-14 Compute and use regression and correlation coefficients.
Topic : Associative Forecasting Techniques
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

88) Which term most closely relates to associative forecasting techniques?

88) _____

A) time series data
B) expert opinions
C) Delphi technique
D) consumer survey
E) predictor variables

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Learning Objective : 03-14 Compute and use regression and correlation coefficients.
Topic : Associative Forecasting Techniques
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

89) Which of the following corresponds to the predictor variable in simple linear regression?

89) _____

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A) regression coefficient
B) dependent variable
C) independent variable
D) predicted variable
E) demand coefficient

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-14 Compute and use regression and correlation coefficients.
Topic : Associative Forecasting Techniques
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

90) The mean absolute deviation is used to:

90) _____

A) estimate the trend line.
B) eliminate forecast errors.
C) measure forecast accuracy.
D) seasonally adjust the forecast.
E) compute periodic forecast errors.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Forecast Accuracy
Learning Objective : 03-05 Summarize forecast errors and use summaries to make decisions.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

91) Given forecast errors of 4, 8, and −3, what is the mean absolute deviation?

91) _____

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A) 4
B) 3
C) 5
D) 6
E) 12

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Topic : Forecast Accuracy
Learning Objective : 03-05 Summarize forecast errors and use summaries to make decisions.
AACSB : Analytical Thinking
Accessibility : Screen Reader Compatible

92) Given forecast errors of 5, 0,−4, and 3, what is the mean absolute deviation?

92) _____

A) 4
B) 3
C) 2.5
D) 2
E) 1

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Topic : Forecast Accuracy
Learning Objective : 03-05 Summarize forecast errors and use summaries to make decisions.
AACSB : Analytical Thinking
Accessibility : Screen Reader Compatible

93) Given forecast errors of 5, 0,−4, and 3, what is the tracking signal?

93) _____

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A) 3
B) 1.33
C) 4
D) 12
E) 0.75

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Monitoring Forecast Error
Learning Objective : 03-15 Construct control charts and use them to monitor forecast errors.
Bloom's : Apply
AACSB : Analytical Thinking
Accessibility : Screen Reader Compatible

94) Which of the following is used for constructing a control chart?

94) _____

A) mean absolute deviation
B) mean squared error
C) tracking signal
D) bias
E) MAPE

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Topic : Monitoring Forecast Error
Learning Objective : 03-15 Construct control charts and use them to monitor forecast errors.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

95) The two most important factors in choosing a forecasting technique are:

95) _____

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A) cost and time horizon.
B) accuracy and time horizon.
C) cost and accuracy.
D) quantity and quality.
E) objective and subjective components.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Learning Objective : 03-16 Describe the key factors and trade-offs to consider when choosing a foreca
Topic : Choosing a Forecasting Technique
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

96) The degree of management involvement in short-range forecasts is:

96) _____

A) none.
B) low.
C) moderate.
D) high.
E) total.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-16 Describe the key factors and trade-offs to consider when choosing a foreca
Topic : Choosing a Forecasting Technique
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

97) Which of the following is not necessarily an element of a good forecast?

97) _____

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A) estimate of accuracy
B) timeliness
C) meaningful units
D) low cost
E) written

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Bloom's : Understand
Learning Objective : 03-03 List the elements of a good forecast.
Topic : Elements of a Good Forecast
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

98) Forecasting techniques generally assume:

98) _____

A) the absence of randomness.
B) continuity of some underlying causal system.
C) a linear relationship between time and demand.
D) accuracy that increases the farther out in time the forecast projects.
E) accuracy that is better when individual items, rather than groups of items, are being considered.

Question Details
Topic : Features Common to All Forecasts
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-02 Explain why forecasts are generally wrong.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

99) A managerial approach toward forecasting which seeks to actively influence demand is:

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99) _____

A) reactive.
B) proactive.
C) influential.
D) protracted.
E) retroactive.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-16 Describe the key factors and trade-offs to consider when choosing a foreca
Topic : Using Forecast Information
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

100) Customer service levels can be improved by better:

100) _____

A) mission statements.
B) control charting.
C) short-term forecast accuracy.
D) exponential smoothing.
E) customer selection.

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Bloom's : Understand
Learning Objective : 03-16 Describe the key factors and trade-offs to consider when choosing a foreca
Topic : Operations Strategy
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

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101) Given the following historical data, what is the simple three-period moving average forecast for period 6?

Period	Value
1	73
2	68
3	65
4	72
5	67

101) _____

A) 67
B) 115
C) 69
D) 68
E) 68.67

Question Details
Accessibility : Keyboard Navigation
Difficulty : 1 Easy
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-08 Prepare a moving average forecast.
Bloom's : Apply
AACSB : Analytical Thinking

102) Given the following historical data and weights of 0.5, 0.3, and 0.2, what is the three-period moving average forecast for period 5?

Period	Value	Period	Value
1	138	3	148
2	142	4	144

102) _____

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A) 144.20
B) 144.80
C) 144.67
D) 143.00
E) 144.00

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-09 Prepare a weighted-average forecast.
Bloom's : Apply
AACSB : Analytical Thinking

103) Use of simple linear regression analysis assumes that:

103) _____

A) variations around the line are nonrandom.
B) deviations around the line are normally distributed.
C) predictions can easily be made beyond the range of observed values of the predictor variable.
D) all possible predictor variables are included in the model.
E) the variance of error terms (deviations) varies directly with the predictor variable.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 2 Medium
Learning Objective : 03-14 Compute and use regression and correlation coefficients.
Topic : Associative Forecasting Techniques
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

104) Given forecast errors of −5, −10, and +15, the MAD is:

104) _____

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A) 0.
B) 10.
C) 30.
D) 175.
E) 225.

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Topic : Forecast Accuracy
Learning Objective : 03-05 Summarize forecast errors and use summaries to make decisions.
AACSB : Analytical Thinking
Accessibility : Screen Reader Compatible

105) The president of State University wants to forecast student enrollments for this academic year based on the following historical data:

Year	Enrollments
5 Years ago	15,000
4 Years ago	16,000
3 Years ago	18,000
2 Years ago	20,000
Last Year	21,000

What is the forecast for this year using the naive approach?

105) _____

A) 18,750
B) 19,500
C) 21,000
D) 22,000
E) 22,800

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Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-07 Use a naive method to make a forecast.
Bloom's : Apply
AACSB : Analytical Thinking

106) The president of State University wants to forecast student enrollments for this academic year based on the following historical data:

Year	Enrollments
5 Years ago	15,000
4 Years ago	16,000
3 Years ago	18,000
2 Years ago	20,000
Last Year	21,000

What is the forecast for this year using a four-year simple moving average?

106) _____

A) 18,750
B) 19,500
C) 21,000
D) 22,650
E) 22,800

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-08 Prepare a moving average forecast.
Bloom's : Apply
AACSB : Analytical Thinking

107) The president of State University wants to forecast student enrollments for this academic year based on the following historical data:

Year	Enrollments

OperationsÂ Management 14th edition Stevenson Test Bank

5 Years ago	15,000
4 Years ago	16,000
3 Years ago	18,000
2 Years ago	20,000
Last Year	21,000

What is the forecast for this year using exponential smoothing with alpha = 0.5, if the forecast for two years ago was 16,000?

107) _____

A) 18,750
B) 19,500
C) 21,000
D) 22,650
E) 22,800

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Bloom's : Apply
AACSB : Analytical Thinking

108) The president of State University wants to forecast student enrollments for this academic year based on the following historical data:

Year	Enrollments
5 Years ago	15,000
4 Years ago	16,000
3 Years ago	18,000
2 Years ago	20,000
Last Year	21,000

What is the forecast for this year using the least squares trend line for these data?

108) _____

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A) 18,750
B) 19,500
C) 21,000
D) 22,650
E) 22,800

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Bloom's : Apply
AACSB : Analytical Thinking
Learning Objective : 03-11 Prepare a linear trend forecast.

109) The president of State University wants to forecast student enrollments for this academic year based on the following historical data:

Year	Enrollments
5 Years ago	15,000
4 Years ago	16,000
3 Years ago	18,000
2 Years ago	20,000
Last Year	21,000

What is the forecast for this year using trend-adjusted (double) smoothing with alpha = 0.05 and beta = 0.3, if the forecast for last year was 21,000, the forecast for two years ago was 19,000, and the trend estimate for last year's forecast was 1,500?

109) _____

A) 18,750
B) 19,500
C) 21,000
D) 22,650
E) 22,800

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Question Details
Accessibility : Keyboard Navigation
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-12 Prepare a trend-adjusted exponential smoothing forecast.
Difficulty : 3 Hard
Bloom's : Apply
AACSB : Analytical Thinking

110) The business analyst for Video Sales, Inc. wants to forecast this year's demand for DVD decoders based on the following historical data:

Year	Demand
5 Years ago	900
4 Years ago	700
3 Years ago	600
2 Years ago	500
Last Year	300

What is the forecast for this year using the naive approach?

110) _____

A) 100
B) 200
C) 300
D) 500
E) 600

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-07 Use a naive method to make a forecast.
AACSB : Analytical Thinking

111) The business analyst for Video Sales, Inc. wants to forecast this year's demand for DVD decoders based on the following historical data:

Year	Enrollments

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5 Years ago	900
4 Years ago	700
3 Years ago	600
2 Years ago	500
Last Year	300

What is the forecast for this year using a three-year weighted moving average with weights of 0.5, 0.3, and 0.2?

111) _____

A) 163
B) 180
C) 300
D) 420
E) 510

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-09 Prepare a weighted-average forecast.
Bloom's : Apply
AACSB : Analytical Thinking

112) The business analyst for Video Sales, Inc. wants to forecast this year's demand for DVD decoders based on the following historical data:

Year	Enrollments
5 Years ago	900
4 Years ago	700
3 Years ago	600
2 Years ago	500
Last Year	300

What is the forecast for this year using exponential smoothing with alpha = 0.4, if the forecast for two years ago was 750?

112) _____

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A) 163
B) 180
C) 300
D) 420
E) 510

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Bloom's : Apply
AACSB : Analytical Thinking

113) The business analyst for Video Sales, Inc. wants to forecast this year's demand for DVD decoders based on the following historical data:

Year	Enrollments
5 Years ago	900
4 Years ago	700
3 Years ago	600
2 Years ago	500
Last Year	300

What is the forecast for this year using the least squares trend line for these data?

113) _____

A) 163
B) 180
C) 300
D) 420
E) 510

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Question Details
Accessibility : Keyboard Navigation
Topic : Forecasts Based on Time-Series Data
Difficulty : 3 Hard
Bloom's : Apply
AACSB : Analytical Thinking
Learning Objective : 03-11 Prepare a linear trend forecast.

114) The business analyst for Video Sales, Inc. wants to forecast this year's demand for DVD decoders based on the following historical data:

Year	Enrollments
5 Years ago	900
4 Years ago	700
3 Years ago	600
2 Years ago	500
Last Year	300

What is the forecast for this year using trend-adjusted (double) smoothing with alpha = 0.3 and beta = 0.2, if the forecast for last year was 310, the forecast for two years ago was 430, and the trend estimate for last year's forecast was −150?

114) _____

A) 162.4
B) 180.3
C) 301.4
D) 403.2
E) 510.0

Question Details
Accessibility : Keyboard Navigation
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-12 Prepare a trend-adjusted exponential smoothing forecast.
Difficulty : 3 Hard
Bloom's : Apply
AACSB : Analytical Thinking

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115) Professor Very Busy needs to allocate time next week to include time for office hours. He needs to forecast the number of students who will seek appointments. He has gathered the following data:

Week	#Students
6 Weeks ago	83
5 Weeks ago	110
4 Weeks ago	95
3 Weeks ago	80
2 Weeks ago	65
Last Year	50

What is this week's forecast using the naive approach?

115) _____

A) 35
B) 50
C) 52
D) 65
E) 78

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-07 Use a naive method to make a forecast.
Bloom's : Apply
AACSB : Analytical Thinking

116) Professor Very Busy needs to allocate time next week to include time for office hours. He needs to forecast the number of students who will seek appointments. He has gathered the following data:

Week	#Students
6 Weeks ago	83
5 Weeks ago	110
4 Weeks ago	95

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3 Weeks ago	80
2 Weeks ago	65
Last Week	50

What is this week's forecast using a three-week simple moving average?

116) _____

A) 49
B) 50
C) 52
D) 65
E) 78

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-08 Prepare a moving average forecast.
Bloom's : Apply
AACSB : Analytical Thinking

117) Professor Very Busy needs to allocate time next week to include time for office hours. He needs to forecast the number of students who will seek appointments. He has gathered the following data:

Week	#Students
6 Weeks ago	83
5 Weeks ago	110
4 Weeks ago	95
3 Weeks ago	80
2 Weeks ago	65
Last Week	50

What is this week's forecast using exponential smoothing with alpha = 0.2, if the forecast for two weeks ago was 90?

117) _____

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A) 49
B) 50
C) 52
D) 65
E) 78

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Bloom's : Apply
AACSB : Analytical Thinking

118) Professor Very Busy needs to allocate time next week to include time for office hours. He needs to forecast the number of students who will seek appointments. He has gathered the following data:

Week	#Students
6 Weeks ago	83
5 Weeks ago	110
4 Weeks ago	95
3 Weeks ago	80
2 Weeks ago	65
Last Week	50

What is this week's forecast using the least squares trend line for these data?

118) _____

A) 49
B) 50
C) 52
D) 65
E) 78

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Question Details
Accessibility : Keyboard Navigation
Topic : Forecasts Based on Time-Series Data
Difficulty : 3 Hard
Bloom's : Apply
AACSB : Analytical Thinking
Learning Objective : 03-11 Prepare a linear trend forecast.

119) Professor Very Busy needs to allocate time next week to include time for office hours. He needs to forecast the number of students who will seek appointments. He has gathered the following data:

Week	#Students
6 Weeks ago	83
5 Weeks ago	110
4 Weeks ago	95
3 Weeks ago	80
2 Weeks ago	65
Last Week	50

What is this week's forecast using trend-adjusted (double) smoothing with alpha = 0.5 and beta = 0.1, if the forecast for last week was 65, the forecast for two weeks ago was 75, and the trend estimate for last week's forecast was −5?

119) _____

A) 49.3
B) 50.6
C) 52.0
D) 65.4
E) 78.7

Question Details
Accessibility : Keyboard Navigation
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-12 Prepare a trend-adjusted exponential smoothing forecast.
Difficulty : 3 Hard
Bloom's : Apply
AACSB : Analytical Thinking

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120) A concert promoter is forecasting this year's attendance for one of his concerts based on the following historical data:

Year	Attendance
Four Years ago	10,000
Three Years ago	12,000
Two Years ago	18,000
Last Year	20,000

What is this year's forecast using the naive approach?

120) _____

A) 22,000
B) 20,000
C) 18,000
D) 15,000
E) 12,000

Question Details
Accessibility : Keyboard Navigation
Difficulty : 1 Easy
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-07 Use a naive method to make a forecast.
Bloom's : Apply
AACSB : Analytical Thinking

121) A concert promoter is forecasting this year's attendance for one of his concerts based on the following historical data:

Year	Attendance
Four Years ago	10,000
Three Years ago	12,000
Two Years ago	18,000
Last Year	20,000

What is this year's forecast using a two-year weighted moving average with weights of 0.7 and 0.3?

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121) _____

A) 19,400
B) 18,600
C) 19,000
D) 11,400
E) 10,600

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-09 Prepare a weighted-average forecast.
Bloom's : Apply
AACSB : Analytical Thinking

122) A concert promoter is forecasting this year's attendance for one of his concerts based on the following historical data:

Year	Attendance
Four Years ago	10,000
Three Years ago	12,000
Two Years ago	18,000
Last Year	20,000

What is this year's forecast using exponential smoothing with alpha = 0.2, if last year's smoothed forecast was 15,000?

122) _____

A) 20,000
B) 19,000
C) 17,500
D) 16,000
E) 15,000

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Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Bloom's : Apply
AACSB : Analytical Thinking

123) A concert promoter is forecasting this year's attendance for one of his concerts based on the following historical data:

Year	Attendance
Four Years ago	10,000
Three Years ago	12,000
Two Years ago	18,000
Last Year	20,000

What is this year's forecast using the least squares trend line for these data?

123) _____

A) 20,000
B) 21,000
C) 22,000
D) 23,000
E) 24,000

Question Details
Accessibility : Keyboard Navigation
Topic : Forecasts Based on Time-Series Data
Difficulty : 3 Hard
Bloom's : Apply
AACSB : Analytical Thinking
Learning Objective : 03-11 Prepare a linear trend forecast.

124) A concert promoter is forecasting this year's attendance for one of his concerts based on the following historical data:

Year	Attendance
Four Years ago	10,000

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Three Years ago	12,000
Two Years ago	18,000
Last Year	20,000

The previous trend line had predicted 18,500 for two years ago, and 19,700 for last year. What was the mean absolute deviation for these forecasts?

124) _____

A) 100
B) 200
C) 400
D) 500
E) 800

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecast Accuracy
Learning Objective : 03-05 Summarize forecast errors and use summaries to make decisions.
Bloom's : Apply
AACSB : Analytical Thinking

125) The dean of a school of business is forecasting total student enrollment for this year's summer session classes based on the following historical data:

Year	Enrollment
Four years ago	2,000
Three years ago	2,200
Two years ago	2,800
Last year	3,000

What is this year's forecast using the naive approach?

125) _____

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A) 2,000
B) 2,200
C) 2,800
D) 3,000
E) 3,200

Question Details
Accessibility : Keyboard Navigation
Difficulty : 1 Easy
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-07 Use a naive method to make a forecast.
Bloom's : Apply
AACSB : Analytical Thinking

126) The dean of a school of business is forecasting total student enrollment for this year's summer session classes based on the following historical data:

Year	Enrollment
Four years ago	2,000
Three years ago	2,200
Two years ago	2,800
Last year	3,000

What is this year's forecast using a three-year simple moving average?

126) _____

A) 2,667
B) 2,600
C) 2,500
D) 2,400
E) 2,333

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Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-08 Prepare a moving average forecast.
Bloom's : Apply
AACSB : Analytical Thinking

127) The dean of a school of business is forecasting total student enrollment for this year's summer session classes based on the following historical data:

Year	Enrollment
Four years ago	2,000
Three years ago	2,200
Two years ago	2,800
Last year	3,000

What is this year's forecast using exponential smoothing with alpha = 0.4, if last year's smoothed forecast was 2,600?

127) _____

A) 2,600
B) 2,760
C) 2,800
D) 3,840
E) 3,000

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Bloom's : Apply
AACSB : Analytical Thinking

128) The dean of a school of business is forecasting total student enrollment for this year's summer session classes based on the following historical data:

Year	Enrollment

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Four years ago	2,000
Three years ago	2,200
Two years ago	2,800
Last year	3,000

What is the annual rate of change (slope) of the least squares trend line for these data?

128) _____

A) 0
B) 200
C) 400
D) 180
E) 360

Question Details
Accessibility : Keyboard Navigation
Topic : Forecasts Based on Time-Series Data
Difficulty : 3 Hard
Bloom's : Apply
AACSB : Analytical Thinking
Learning Objective : 03-11 Prepare a linear trend forecast.

129) The dean of a school of business is forecasting total student enrollment for this year's summer session classes based on the following historical data:

Year	Enrollment
Four years ago	2,000
Three years ago	2,200
Two years ago	2,800
Last year	3,000

What is this year's forecast using the least squares trend line for these data?

129) _____

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A) 3,600
B) 3,500
C) 3,400
D) 3,300
E) 3,200

Question Details
Accessibility : Keyboard Navigation
Topic : Forecasts Based on Time-Series Data
Difficulty : 3 Hard
Bloom's : Apply
AACSB : Analytical Thinking
Learning Objective : 03-11 Prepare a linear trend forecast.

130) The owner of Darkest Tans Unlimited in a local mall is forecasting this month's (October's) demand for the one new tanning booth based on the following historical data:

Month	Number of Visits
April	100
May	140
June	110
July	150
August	120
September	160

What is this month's forecast using the naive approach?

130) _____

A) 100
B) 160
C) 130
D) 140
E) 120

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Question Details
Accessibility : Keyboard Navigation
Difficulty : 1 Easy
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-07 Use a naive method to make a forecast.
Bloom's : Apply
AACSB : Analytical Thinking

131) The owner of Darkest Tans Unlimited in a local mall is forecasting this month's (October's) demand for the one new tanning booth based on the following historical data:

Month	Number of Visits
April	100
May	140
June	110
July	150
August	120
September	160

What is this month's forecast using a four-month weighted moving average with weights of 0.4, 0.3, 0.2, and 0.1?

131) _____

A) 120
B) 129
C) 141
D) 135
E) 140

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-09 Prepare a weighted-average forecast.
Bloom's : Apply
AACSB : Analytical Thinking

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132) The owner of Darkest Tans Unlimited in a local mall is forecasting this month's (October's) demand for the one new tanning booth based on the following historical data:

Month	Number of Visits
April	100
May	140
June	110
July	150
August	120
September	160

What is this month's forecast using exponential smoothing with alpha = 0.2, if August's forecast was 145?

132) _____

A) 144
B) 140
C) 142
D) 148
E) 163

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Learning Objective : 03-10 Prepare an exponential smoothing forecast.
Topic : Forecasts Based on Time-Series Data
Bloom's : Apply
AACSB : Analytical Thinking

133) The owner of Darkest Tans Unlimited in a local mall is forecasting this month's (October's) demand for the one new tanning booth based on the following historical data:

Month	Number of Visits
April	100
May	140
June	110
July	150
August	120
September	160

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What is the monthly rate of change (slope) of the least squares trend line for these data?

133) _____

A) 320
B) 102
C) 8
D) −0.4
E) −8

Question Details
Accessibility : Keyboard Navigation
Topic : Forecasts Based on Time-Series Data
Difficulty : 3 Hard
Bloom's : Apply
AACSB : Analytical Thinking
Learning Objective : 03-11 Prepare a linear trend forecast.

134) The owner of Darkest Tans Unlimited in a local mall is forecasting this month's (October's) demand for the one new tanning booth based on the following historical data:

Month	Number of Visits
April	100
May	140
June	110
July	150
August	120
September	160

What is this month's forecast using the least squares trend line for these data?

134) _____

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A) 1,250
B) 128.6
C) 102
D) 158
E) 164

Question Details
Accessibility : Keyboard Navigation
Topic : Forecasts Based on Time-Series Data
Difficulty : 3 Hard
Bloom's : Apply
AACSB : Analytical Thinking
Learning Objective : 03-11 Prepare a linear trend forecast.

135) Which of the following mechanisms for enhancing profitability is most likely to result from improving short-term forecast performance?

135) _____

A) increased inventory
B) reduced flexibility
C) higher-quality products
D) greater customer satisfaction
E) greater seasonality

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Bloom's : Understand
Learning Objective : 03-16 Describe the key factors and trade-offs to consider when choosing a foreca
Topic : Operations Strategy
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

136) Which of the following changes would tend to shorten the time frame for short-term forecasting?

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136) _____

A) bringing greater variety into the product mix
B) increasing the flexibility of the production system
C) ordering fewer weather-sensitive items
D) adding more special-purpose equipment
E) investing in the production system to make it more task-specific

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Bloom's : Understand
Learning Objective : 03-16 Describe the key factors and trade-offs to consider when choosing a foreca
Topic : Operations Strategy
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

137) Which of the following helps improve supply chain forecasting performance?

137) _____

A) contracts that require supply chain members to formulate long-term forecasts
B) penalties for supply chain members that adjust forecasts
C) sharing forecasts or demand data across the supply chain
D) increasing lead times for critical supply chain members
E) increasing the number of suppliers at critical junctures in the supply chain

Question Details
Accessibility : Keyboard Navigation
Difficulty : 1 Easy
Bloom's : Understand
Learning Objective : 03-03 List the elements of a good forecast.
Topic : Forecasting and the Supply Chain
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

138) Which of the following would tend to decrease forecast accuracy?

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138) _____

A) a reduction in demand variability
B) a shortening of the forecast time horizon
C) an attempt to forecast demand for a group of similar items rather than an individual item
D) a change in the underlying causal system
E) an increase in the flexibility of the production system

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Bloom's : Understand
Topic : Forecasting and the Supply Chain
Learning Objective : 03-02 Explain why forecasts are generally wrong.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

139) Which of the following is the most valuable piece of information the sales force can bring into forecasting situations?

139) _____

A) what customers are most likely to do in the future
B) what customers most want to do in the future
C) what plans customers are considering for the future
D) whether customers are satisfied or dissatisfied with their performance in the past
E) what the salesperson's appropriate sales quota should be

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Bloom's : Understand
Learning Objective : 03-06 Describe four qualitative forecasting techniques.
Topic : Qualitative Forecasts
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

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140) Which of the following is not an example of forecasts being used in a business organization?

140) _____

A) how the organization should be structured
B) equipment replacement needs
C) timing and amount of funding needs
D) hiring activities
E) pricing and promotion

Question Details
Accessibility : Keyboard Navigation
Learning Objective : 03-01 List features common to all forecasts.
Difficulty : 2 Medium
Bloom's : Understand
Topic : Introduction
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

141) Inaccurate _____ can lead to excess and/or shortages throughout the organization and the supply chain.

141) _____

A) planning
B) forecasts
C) ordering
D) capacity
E) deliveries

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Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-01 List features common to all forecasts.
Topic : Introduction
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

142) Which forecast uses opinions gathered from consumer surveys, managers, sales staff, experts, and executives?

142) _____

A) associative
B) time-series
C) judgmental
D) capacity
E) quantitative

Question Details
Accessibility : Keyboard Navigation
Bloom's : Remember
Difficulty : 1 Easy
Learning Objective : 03-04 Outline the steps in the forecasting process.
Topic : Approaches to Forecasting
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

143) Data in a time-ordered sequence will not be in measurements of?

143) _____

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A) demand
B) accidents
C) productivity
D) months
E) consumer price index

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Bloom's : Understand
Learning Objective : 03-06 Describe four qualitative forecasting techniques.
AACSB : Reflective Thinking
Accessibility : Screen Reader Compatible

144) The owner of Yummy Yummy Catering needs to ensure she has enough employees scheduled for the upcoming week to assist with cooking. She needs to forecast the number of clients that will book her services. She has the following historical data:

Week	#Clients
6 Weeks ago	42
5 Weeks ago	19
4 Weeks ago	37
3 Weeks ago	56
2 Weeks ago	44
Last Week	31

What is this week's forecast using a three-week simple moving average?

144) _____

A) 51
B) 29
C) 48
D) 44
E) 37

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Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-08 Prepare a moving average forecast.
Bloom's : Apply
AACSB : Analytical Thinking

145) The owner of Yummy Yummy Catering needs to ensure she has enough employees scheduled for the upcoming week to assist with cooking. She needs to forecast the number of clients that will book her services. She has the following historical data:

Week	#Clients
6 Weeks ago	42
5 Weeks ago	19
4 Weeks ago	37
3 Weeks ago	56
2 Weeks ago	44
Last Week	31

What is the forecast for this week using weighted moving average with weights of 0.5, 0.3, and 0.2?

145) _____

A) 51
B) 29
C) 48
D) 40
E) 37

Question Details
Accessibility : Keyboard Navigation
Difficulty : 2 Medium
Topic : Forecasts Based on Time-Series Data
Learning Objective : 03-09 Prepare a weighted-average forecast.
Bloom's : Apply
AACSB : Analytical Thinking

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Operations Management 14th Edition by Stevenson CH04

Answer Key

Test name: CH03

1) TRUE
Forecasts depend on the rules of the game remaining reasonably constant.

2) FALSE
If growth is strong, alpha should be large so that the model will catch up more quickly.

3) FALSE
4) FALSE
Forecasting for an individual item is more difficult than forecasting for a number of items.

5) TRUE
Both planning and using the system are shaped by forecasts.

6) TRUE
If an organization can react more quickly, its forecasts need not be so long term.

7) FALSE
Because focus forecasting models depend on historical data, they're not so attractive for newly introduced products or services.

8) TRUE
All of these considerations are shaped by what the forecast will be used for.

9) FALSE

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Forecasts based on time-series data are referred to as time-series forecasts.

10) FALSE
Associative forecasts involve identifying explanatory variables.

11) FALSE
Most people do not enjoy participating in surveys. Surveys can be expensive and time consuming; and actual consumer behavior may not match their survey responses

12) TRUE
A consensus among divergent perspectives is developed using questionnaires.

13) FALSE
Exponential smoothing adds a percentage of the last period's forecast error.

14) TRUE
Long-term forecasting is much more difficult to do accurately.

15) FALSE
Time-series forecasts assume that future patterns in the series will mimic past patterns in the series.

16) FALSE
Trend-adjusted smoothing smoothes both random and trend-related variation.

17) TRUE
Averaging is a way of smoothing out random variability.

18) FALSE

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The naive approach uses a single previous value of a time series as the basis of a forecast.

19) FALSE
When a trend or seasonality is present, the naive forecast uses the most recent observation of trend and/or the most recent observation from the most recent similar season.

20) TRUE
Often the naive forecast performs reasonably well when compared to more complex techniques.

21) FALSE
More data points reduce a moving average forecast's responsiveness.

22) TRUE
The oldest value in the average must be dropped before updating the moving average when a new data value becomes available.

23) TRUE
Capacity decisions are made for the future and therefore depend on forecasts.

24) TRUE
Weighted moving averages can be adjusted to make more recent data more important in setting the forecast.

25) TRUE
26) FALSE
Smaller smoothing constants result in less responsive forecast models.

27) FALSE
The T represents the trend dimension.

28) TRUE

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One is for the trend and one is for the random error.

29) TRUE
A linear trend equation assumes a constant trend; trend-adjusted smoothing allows for changes in the underlying trend.

30) TRUE
Seasonal relatives are used when the seasonal effect is multiplicative rather than additive.

31) TRUE
Computing seasonal relatives depends on past data being available.

32) TRUE
Deseasonalized data points have been adjusted to remove seasonal influences in order to obtain a clearer picture of the nonseasonal (trend and average) components.

33) TRUE
Patterns reflect influences such as trends or seasonality that go against regression analysis assumptions.

34) TRUE
Regression analysis can be used in a variety of settings, even when the relationship between variables is nonlinear or when multiple predictor variables are involved

35) TRUE
The MSE is an estimate of the sample variance of the forecast error.

36) TRUE
The association between two variables is summarized in the correlation coefficient.

37) FALSE

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MAD is the mean absolute deviation while MSE is the mean squared error.

38) TRUE
With alpha equal to 1 we are using a naive forecasting method.

39) FALSE
Forecast methods are generally considered to be performing adequately when the errors appear to be randomly distributed.

40) FALSE
Control charts set action limits for the individual observations of forecast error.

41) TRUE
Large absolute values of the tracking signal suggest a fundamental change in the forecast model's performance.

42) TRUE
Over time, a forecast model's errors should fluctuate randomly about a mean of zero.

43) TRUE
A tendency in one direction is defined as bias.

44) TRUE
Bias would result in the ratio of the cumulative sum of forecast errors to MAD being large in absolute value.

45) TRUE
Seasonal relatives are used to deseasonalize data to forecast future values of the underlying trend, and they are also used to reseasonalize deseasonalized forecasts.

46) TRUE

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More accuracy often comes at too high a cost to be worthwhile.

47) D
Customers themselves may be unclear regarding what they'd like to do versus what they'll actually do.

48) B
The forecast will be (0.1 × 380) + (0.2 × 410) + (0.3 × 390) + (0.4 × 400) = 397.

49) D
The forecast for will be (0.2 × 2,200) + (0.3 × 1,950) + (0.5 × 2,050) = 2,050.

50) E
The trade-off between cost and accuracy is the critical consideration when choosing a forecasting technique.

51) A
New products and services lack historical data, so forecasts for them must be based on subjective estimates.

52) C
Second opinions generally refer to medical diagnoses, not demand forecasting.

53) E
Demand forecasts are direct inputs into capacity, sales, and production plans.

54) C
In some forecasting situations historical data are not available.

55) B
We cannot eliminate all assumptions.

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56) D
Least squares estimations minimize the sum of squared deviations around the estimated regression function.

57) B
Forecast approaches are either quantitative or qualitative.

58) E
Time series analysis is a quantitative approach.

59) A
MSE is mean squared error.

60) C
Members of the sales force should be the organization's tightest link with its customers.

61) C
The questionnaires are a way of fostering a consensus among divergent perspectives.

62) C
Anonymity is important in Delphi efforts.

63) A
Since responses are anonymous, there is less risk that a domineering personality can push potentially inaccurate viewpoints to drown out other important considerations.

64) C
Control charts graphically depict the statistical behavior of forecast errors.

65) D
Trends move the time series in a long-term direction.

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66) A
Seasons happen within time periods; cycles happen across multiple time periods.

67) B
Smoothing helps forecasters see past random error.

68) B
MAPE depicts the forecast error relative to what was being forecast.

69) B
Only one piece of information is needed for a naive forecast.

70) D
Period 5's forecast would be period 4's demand.

71) C
Variation is smoothed out in moving average forecasts.

72) D
Simple moving averages can require several periods of data.

73) A
Fewer data points result in more responsive moving averages.

74) D
Exponential smoothing uses the previous forecast error to shape the next forecast.

75) B
The most recent period of demand is given the most weight in exponential smoothing.

76) E
An alpha of 1.0 leads to a naive forecast.

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77) C
A previous period's forecast error of 4 units would lead to a change in the forecast of 0.6 if alpha equals 0.15.

78) D
Multiply the previous period's forecast error (−5) by alpha and then add to the previous period's forecast.

79) C
Multiply the previous period's forecast error (8) by alpha and then add to the previous period's forecast.

80) E
Larger values for alpha correspond with greater responsiveness.

81) A
July would be period 3, so the forecast would be 40,000 + 150(3).

82) A
Both random variation and the trend the forecast error and the error in the trend estimate are smoothed in TAF models.

83) A
The additive model simply adds a seasonal adjustment to the deseasonalized forecast. The multiplicative model adjusts the deseasonalized forecast by multiplying it by a season relative or index.

84) D
The centered moving average serves as the basis point for computing seasonal relatives.

85) A
Bias is a tendency for a forecast to be above (or below) the actual value.

86) A

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Leading variables, such as births in a given year, can correlate strongly with cyclic demand for diapers, baby food, children's clothing, education, and other goods and services in subsequent years.

87) B
Regression analysis is an associative forecasting technique for fitting a line to a set of points.

88) E
Associative techniques use predictor variables.

89) C
Demand is the typical dependent variable when forecasting with simple linear regression.

90) C
MAD is one way of evaluating forecast performance.

91) C
Convert each error into an absolute value and then average.

92) B
Convert each error into an absolute value and then average.

93) B
Sum the forecast errors and divide the total by the mean absolute deviation. The mean absolute deviation is the sum of the absolute deviations divided by the number of observations.

94) B
The mean squared error leads to an estimate for the sample forecast standard deviation.

95) C

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More accurate forecasts cost more but may not be worth the additional cost.

96) B
Short-range forecasting tends to be fairly routine.

97) D
A good forecast can be quite costly if necessary as long as the benefits outweigh the costs.

98) B
Forecasting techniques generally assume that the same underlying causal system that existed in the past will continue to exist in the future.

99) B
Simply responding to demand is a reactive approach.

100) C
101) D
Average demand from periods 3 through 5.

102) B
Multiply period 4 (144) by 0.5, period 3 (148) by 0.3, and period 2 (142) by 0.2, then sum these products.

103) B
That deviations conform to the normal distribution is a very important assumption underpinning simple linear regression.

104) B
Convert these errors into absolute value, then average.

105) D

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There is a clear trend with continuously increasing enrollments, so this year's forecast would be last year's enrollment plus the difference between last year's enrollment and the enrollment two years ago.
21,000+ (21,000− 20,000) = 22,000

106) A
Average enrollment from the last four years.

(21,000+ 20,000+ 18,000+ 16,000) ÷ 4 = 18,750

107) B
Multiply the forecast error two years ago by the smoothing constant, then add that to the forecast from two years ago to get last year's forecast. Then multiply last year's forecast error by the smoothing constant, and add that to last year's forecast to get this year's forecast.

$F_{\text{Last Year}}$= 16,000+ 0.5 × (20,000 − 16,000) = 18,000

$F_{\text{This Year}}$= 18,000+ 0.5 × (21,000 − 18,000) = 19,500

108) E
Treat 5 years ago as period 0 and this year as period 5. The coefficients of the trend line are:

b = [5 × ((0 × 15,000) + (1 × 16,000) + (2 × 18,000) + (3 × 20,000) + (4 × 21,000)) – (0 + 1 + 2 + 3 + 4) × (15,000 + 16,000 + 18,000 + 20,000 + 21,000)]÷ [5 × (0 ^{2} + 1 ^{2} + 2 ^{2} + 3 ^{2} + 4 ^{2}) – (0 + 1 + 2 + 3 + 4) ^{2}] = 1,600 a = [(15,000 + 16,000 + 18,000 + 20,000 + 21,000) – 1,600 × (0 + 1 + 2 + 3 + 4)]÷ 5 = 14,800

F_5 = 14,800 + 1,600 × 5 = 22,800

109) D

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Smooth both the trend and the forecast to get this year's forecast. $S_{\text{Last Year}} = 21{,}000 + 0.5 \times (21{,}000 - 21{,}000) = 21{,}000$

$T_{\text{Last Year}} = 1{,}500 + 0.3 \times (21{,}000 - 19{,}000 - 1{,}500) = 1{,}650$

$TAF_{\text{This Year}} = 21{,}000 + 1{,}650 = 22{,}650$

110) A

There is a clear trend with continuously decreasing demand, so this year's forecast is last year's demand plus the difference between last year's demand and the demand two years ago. $300 + (300 - 500) = 100$

111) D

Multiply last year (300) by 0.5, 2 years ago (500) by 0.3, and 3 years ago (600) by 0.2, then sum these products. $0.5 \times 300 + 0.3 \times 500 + 0.2 \times 600 = 420$

112) E

Multiply the forecast error two years ago by the smoothing constant, then add that to the forecast from two years ago to get last year's forecast. Then multiply last year's forecast error by the smoothing constant, and add that to last year's forecast to get this year's forecast.

$F_{\text{Last Year}} = 750 + 0.4 \times (500 - 750) = 650$

$F_{\text{This Year}} = 650 + 0.4 \times (300 - 650) = 510$

113) B

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Treat 5 years ago as period 0 and this year as period 5. The coefficients of the trend line are:

$b = [5 \times ((0 \times 900) + (1 \times 700) + (2 \times 600) + (3 \times 500) + (4 \times 300)) - (0 + 1 + 2 + 3 + 4) \times (900 + 700 + 600 + 500 + 300)] \div [5 \times (0^2 + 1^2 + 2^2 + 3^2 + 4^2) - (0 + 1 + 2 + 3 + 4)^2] = -140$

$a = [(900 + 700 + 600 + 500 + 300) - (-140) \times (0 + 1 + 2 + 3 + 4)] \div 5 = 880$

$F_5 = 880 + (-140) \times 5 = 180$

114) A

Smooth both the trend and the forecast to get this year's forecast.

$S_{\text{Last Year}} = 310 + 0.3 \times (300 - 310) = 307$

$T_{\text{Last Year}} = -150 + 0.2 \times (310 - 430 - (-150)) = -144$

$TAF_{\text{This Year}} = 307 + (-144) = 163$

115) A

Other than the original data point 6 weeks ago, there is a clear trend over the last 5 weeks with continuously decreasing demand, so this week's forecast is last week's demand plus the difference between last week's demand and the demand two weeks ago. $50 + (50 - 65) = 35$

116) D

Average the three most recent weeks of demand. $(50 + 65 + 80) \div 3 = 65$

117) E

Formulate the forecast for last week, then use that to get this week's forecast.

$F_{\text{Last Week}} = 90 + 0.2 \times (65 - 90) = 85$

$F_{\text{This Week}} = 85 + 0.2 \times (50 - 85) = 78$

118) A

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Treat 6 weeks ago as period 0 and this week as period 6. The coefficients of the trend line are: $b = [6 \times ((0 \times 83) + (1 \times 110) + (2 \times 95) + (3 \times 80) + (4 \times 65) + (5 \times 50)) - (0 + 1 + 2 + 3 + 4 + 5) \times (83 + 110 + 95 + 80 + 65 + 50)] \div [6 \times (0^2 + 1^2 + 2^2 + 3^2 + 4^2 + 5^2) - (0 + 1 + 2 + 3 + 4 + 5)^2] = -9$

$a = [(83 + 110 + 95 + 80 + 65 + 50) - (-9) \times (0 + 1 + 2 + 3 + 4 + 5)] \div 6 = 103$

$F_6 = 103 + (-9) \times 6 = 49$

119) C

Smooth both the trend and the forecast to get this year's forecast.

$S_{\text{Last Week}} = 65 + 0.5 \times (50 - 65) = 57.5$

$T_{\text{Last Week}} = -5 + 0.1 \times (65 - 75 - (-5)) = -5.5$

$TAF_{\text{This Week}} = 57.5 + (-5.5) = 52$

120) A

There is a clear trend with continuously increasing attendance, so this year's forecast would be last year's attendance plus the difference between last year's attendance and the attendance two years ago. 20,000 + (20,000 – 18,000) = 22,000

121) A

Multiply last year (20,000) by 0.7 and 2 years ago (18,000) by 0.3, then sum these products. 0.7 × 20,000 + 0.3 × 18,000 = 19,400

122) D

Multiply last year's forecast error by the smoothing constant, then add that product to last year's forecast to get this year's forecast. 15,000 + 0.2 × (20,000 – 15,000) = 16,000

123) E

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Treat 4 years ago as period 0 and this year as period 4. The coefficients of the trend line are:

$b = [4 \times ((0 \times 10{,}000) + (1 \times 12{,}000) + (2 \times 18{,}000) + (3 \times 20{,}000)) - (0 + 1 + 2 + 3) \times (10{,}000 + 12{,}000 + 18{,}000 + 20{,}000)] \div [4 \times (0^2 + 1^2 + 2^2 + 3^2) - (0 + 1 + 2 + 3)^2] = 3{,}600$

$a = [(10{,}000 + 12{,}000 + 18{,}000 + 20{,}000) - 3{,}600 \times (0 + 1 + 2 + 3)] \div 4 = 9{,}600$

$F_4 = 9{,}600 + 3{,}600 \times 4 = 24{,}000$

124) C

Convert each period's forecast error into absolute value, then average.

$(|\ 18{,}000 - 18{,}500\ | + |\ 20{,}000 - 19{,}700\ |) \div 2 = 400$

125) E

There is a clear trend with continuously increasing enrollments, so this year's forecast would be last year's enrollment plus the difference between last year’s enrollment and the enrollment two years ago. 3,000 + (3,000 – 2,800) = 3,200

126) A

Average the most recent periods of enrollment. (3,000 + 2,800 + 2,200) ÷ 3 = 2,667

127) B

Multiply last year's forecast error by the smoothing constant. Add the product to last year's forecast to get this year's forecast. 2,600 + 0.4 × (3,000 – 2,600) = 2,760

128) E

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Treat 4 years ago as period 0 and this year as period 4. The slope of the trend line is:

$b = [4 \times ((0 \times 2{,}000) + (1 \times 2{,}200) + (2 \times 2{,}800) + (3 \times 3{,}000)) - (0 + 1 + 2 + 3) \times (2{,}000 + 2{,}200 + 2{,}800 + 3{,}000)] \div [4 \times (0^2 + 1^2 + 2^2 + 3^2) - (0 + 1 + 2 + 3)^2] = 360$

129) C

Treat 4 years ago as period 0 and this year as period 4. The coefficients of the trend line are: $b = [4 \times ((0 \times 2{,}000) + (1 \times 2{,}200) + (2 \times 2{,}800) + (3 \times 3{,}000)) - (0 + 1 + 2 + 3) \times (2{,}000 + 2{,}200 + 2{,}800 + 3{,}000)] \div [4 \times (0^2 + 1^2 + 2^2 + 3^2) - (0 + 1 + 2 + 3)^2] = 360$

$a = [(2{,}000 + 2{,}200 + 2{,}800 + 3{,}000) - 360 \times (0 + 1 + 2 + 3)] \div 4 = 1{,}960$

$F_4 = 1{,}960 + 360 \times 4 = 3{,}400$

130) B

There is no obvious trend or seasonality, so this month's forecast is last month's demand.

131) C

Multiply September (160) by 0.4, August (120) by 0.3, July (150) by 0.2, and June (110) by 0.1, then sum these products. $0.4 \times 160 + 0.3 \times 120 + 0.2 \times 150 + 0.1 \times 110 = 141$

132) A

First calculate September's forecast, then use that to calculate this month's forecast.

$F_{\text{September}} = 145 + 0.2 \times (120 - 145) = 140$

$F_{\text{October}} = 140 + 0.2 \times (160 - 140) = 144$

133) C

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Treat April as period 0 and October as period 6. The slope of the trend line is:

$b = [6 \times ((0 \times 100) + (1 \times 140) + (2 \times 110) + (3 \times 150) + (4 \times 120) + (5 \times 160)) - (0 + 1 + 2 + 3 + 4 + 5) \times (100 + 140 + 110 + 150 + 120 + 160)] \div [6 \times (0^2 + 1^2 + 2^2 + 3^2 + 4^2 + 5^2) - (0 + 1 + 2 + 3 + 4 + 5)^2] = 8$

134) D

Treat April as period 0 and October as period 6. The coefficients of the trend line are:

$b = [6 \times ((0 \times 100) + (1 \times 140) + (2 \times 110) + (3 \times 150) + (4 \times 120) + (5 \times 160)) - (0 + 1 + 2 + 3 + 4 + 5) \times (100 + 140 + 110 + 150 + 120 + 160)] \div [6 \times (0^2 + 1^2 + 2^2 + 3^2 + 4^2 + 5^2) - (0 + 1 + 2 + 3 + 4 + 5)^2] = 8$

$a = [(100 + 140 + 110 + 150 + 120 + 160) - 8 \times (0 + 1 + 2 + 3 + 4 + 5)] \div 6 = 110$

$F_6 = 110 + 8 \times 6 = 158$

135) D

Short-term forecast performance won't necessarily improve product quality, but it does allow firms to better satisfy their customers.

136) B

An increasingly flexible system permits more rapid responses to changing conditions, which allows firms to reduce their forecast time horizon.

137) C

Sharing forecasts and/or demand data is a means of ensuring that the supply chain's overall forecast is as accurate as it can be.

138) D

Forecasting techniques generally assume that the same underlying causal system that existed in the past will continue to exist in the future.

139) A

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Knowledge about what customers are likely to do is much more valuable than information regarding what customers plan or want to do.

140) A
How the organization should be structured may be helpful to efficiency and communication within an organization; however, it is not an example of forecasts being used in a business organization.

141) B
Accurate forecasts are critical to the supply chain. Inaccurate forecasts can lead to an increase in costs due to excess materials and/or capacity or cause missed deliveries, work disruption and poor customer service due to a shortage of materials, parts, and services.

142) C
Judgmental forecasts rely on the analysis of subjective inputs that is obtained from various sources such as consumer services, managers, sales staff, experts, and executives.

143) D
Data from a time series or time-ordered sequence is often seen in measurements of demand, sales, earnings, profits, shipments, accidents, output, precipitation, productivity, or the consumer price index.

144) D
Average the three most recent weeks of demand. (31 + 44 + 56) ÷ 3 = 44

145) D
Multiply last week (31) by 0.5, 2 weeks ago (44) by 0.3, and 3 weeks ago (56) by 0.2, then sum these products. 0.5 × 31 + 0.3 × 44 + 0.2 × 56 = 40

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