

PRACTICE QUESTIONS

SAS

A00-407

Forecasting and Optimization Using SAS Viya

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EDITION Free Set 1

QUESTIONS 10

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EXAM SAS A00-407, Forecasting and Optimization Using SAS Viya

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10 practice questions for the SAS A00-407 exam, Forecasting and Optimization Using SAS Viya, each followed by its answer and a short explanation. More free sets and the full practice exam: www.aiexamcerts.com/sas/a00-407. Spotted a mistake? Email support@aiexamcerts.com with the exam code A00-407 and the question number.

1. Before fitting an ARIMA model, an analyst suspects the series has a stochastic trend. Which transformation is the usual first step?

- A Squaring each observation
- B Differencing the series
- C Sorting the series by value
- D Replacing every value with the overall mean

Answer: B

Differencing removes a stochastic trend and yields a series closer to stationary, which ARIMA estimation requires. Squaring the values does not remove the trend and can distort the series, which makes it a weak alternative. Sorting by value destroys the time order, and replacing values with the mean erases the dynamics the model must capture.

2. After differencing, the series is checked for a unit root with the augmented _____ test, whose null hypothesis is that a unit root is present.

Answer: Dickey-Fuller (also accepted: Dickey Fuller, ADF)

The augmented Dickey-Fuller test is a formal unit root test, and rejecting its null supports stationarity. The ACF and PACF are visual diagnostics rather than formal tests, which makes them a tempting alternative. The Ljung-Box test checks residual autocorrelation rather than stationarity.

3. Which seasonal method suits a series whose seasonal swings grow in proportion to its level?

- A Additive Holt-Winters
- B Simple exponential smoothing
- C Multiplicative Holt-Winters
- D Linear trend regression with no season

Answer: C

Multiplicative seasonality scales the seasonal effect with the level, which fits series whose swings widen as values rise. Additive seasonality keeps a constant seasonal size, which makes it the tempting distractor for growing series. Simple smoothing has no seasonal component, and a trend regression without a season does not capture the repeating pattern.

4. Simple exponential smoothing models a linear trend, provided the smoothing weight is set high enough.
- A True
 - B False

Answer: B (False)

Simple exponential smoothing carries only a level component, so it does not model a trend, and raising the smoothing weight does not add one. Holt's linear method or a damped trend model is used for trending series. The statement is false.

5. Which two statements about forecast accuracy measures are correct? (Choose two.)
- A RMSE penalizes large errors more heavily than MAE does
 - B MAE is always larger than RMSE
 - C MAPE is scale-free and can be used when actual values are zero
 - D Holdout error should be computed on the training window
 - E Mean error shows whether forecasts are systematically high or low

Answer: A, E

Squaring errors in RMSE gives large misses extra weight, and mean error shows whether forecasts are systematically high or low. MAE can never exceed RMSE, which makes the claim that it is always larger wrong. MAPE is not defined for zero actuals, and holdout error must come from data not used in training.

6. In PROC ARIMA, which statement fits the model with the specified AR, MA and differencing terms and reports the parameter estimates?
- A IDENTIFY
 - B FORECAST
 - C MERGE
 - D ESTIMATE

Answer: D

The ESTIMATE statement fits the specified model and reports the parameter estimates. IDENTIFY examines the series and its correlations before any model is fitted, which makes it the tempting distractor. FORECAST produces predictions after estimation, and MERGE is a DATA step statement rather than a statement of PROC ARIMA.

7. An ARIMA(1,1,0) model is fitted to a series. What does the first 1 indicate?

- A One autoregressive term
- B One differencing step
- C One moving average term
- D One seasonal period

Answer: A

In the (p,d,q) notation the first number is the autoregressive order, so one lagged value enters the model. The middle 1 is the differencing order, which is the tempting confusion. The last number is the moving average order, and seasonal periods are specified separately.

8. The most recent observations withheld from model fitting and used to judge forecasts are called the _____ period.

Answer: holdout (also accepted: test, validation)

The holdout or test period contains the most recent observations withheld from fitting, so it measures out-of-sample accuracy. The training period is used to estimate the model, which is the tempting confusion. The forecast horizon is the length of time ahead being predicted, which is a separate definition.

9. A series of intermittent demand has many periods with zero sales. Which problem makes standard percentage error measures unsuitable?

- A Too many decimal places in the data
- B The series is too long to store
- C Division by zero when actual values are zero
- D Forecasts cannot be produced for any horizon

Answer: C

Percentage errors divide by the actual value, which is zero in many periods of intermittent demand, so the measure breaks down. Decimal places and storage size do not affect the measure's validity, which makes them irrelevant distractors. Forecasts can still be produced for intermittent series, using methods suited to sparse demand.

10. Which level of a product hierarchy is usually the noisiest when forecast on its own?

- A The top-level national total
- B The annual total across all years
- C The average of all regions
- D The lowest level of individual store and product combinations

Answer: D

Individual store and product series have small counts and irregular patterns, so their forecasts tend to be noisy. Top-level totals average out this noise, which is why they are usually more stable. Annual totals and regional averages are aggregates as well, which makes the lowest level the clear answer.