

PRACTICE QUESTIONS

SAS

A00-480

Applied Statistics for Machine Learning

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EDITION	Free Set 1
QUESTIONS	10
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EXAM	SAS A00-480, Applied Statistics for Machine Learning

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10 practice questions for the SAS A00-480 exam, Applied Statistics for Machine Learning, each followed by its answer and a short explanation. More free sets and the full practice exam: www.aiexamcerts.com/sas/a00-480. Spotted a mistake? Email support@aiexamcerts.com with the exam code A00-480 and the question number.

1. A predictor has 4% missing values, and the analyst wants every record kept for a regression model. Which SAS procedure creates several completed copies of the dataset so that uncertainty about the missing values carries into the analysis?

A PROC MEANS
B PROC MI
C PROC FREQ
D PROC SORT

Answer: B

PROC MI performs multiple imputation, producing several completed datasets whose differences reflect uncertainty about the missing values, and PROC MIANALYZE then combines the estimates. PROC MEANS is the most tempting distractor because analysts use it to count missing values, but it only summarizes and never fills them in. PROC FREQ and PROC SORT do not impute anything.

2. The error of rejecting a true null hypothesis is called a Type I error, and the probability of making it is denoted by the symbol _____.

Answer: alpha (also accepted: α)

The probability of a Type I error is set in advance as the significance level alpha. Beta denotes the probability of a Type II error, failing to reject a false null, and is the most tempting alternative. Power equals one minus beta and describes the chance of detecting a real effect.

3. Two events A and B have $P(A) = 0.3$ and $P(B) = 0.5$, and they are independent. What is the probability that both occur?

- A** 0.80
- B** 0.20
- C** 0.50
- D** 0.15

Answer: D

For independent events the joint probability is the product of the marginal probabilities, so 0.3 times 0.5 gives 0.15. Adding the probabilities to get 0.80 is the most tempting mistake, and it describes the probability that at least one of the events occurs under the assumption that they are mutually exclusive. The value 0.20 comes from subtracting the probabilities, and 0.50 simply repeats the probability of B.

4. A 95% confidence interval for a mean means that there is a 95% probability that the true mean lies inside the one interval computed from the current sample.
- A True
 - B False

Answer: B (False)

The interval either contains the true mean or it does not, so the 95 percent describes the long-run coverage of the procedure across repeated samples. The statement confuses the procedure with a single realized interval, which is the most common misreading of confidence intervals. The statement is false.

5. Which two measures describe the spread of a numeric variable in the same units as the variable itself? (Choose two.)
- A Standard deviation
 - B Coefficient of variation
 - C Interquartile range
 - D Variance of the variable
 - E Pearson correlation

Answer: A, C

The standard deviation and the interquartile range are both expressed in the units of the variable, since the standard deviation is the square root of the variance and the interquartile range is a difference between two quantiles. The variance is expressed in squared units, which makes it the most tempting distractor. The coefficient of variation is unitless, and the Pearson correlation is not a measure of spread at all.

6. Which PROC is the standard SAS choice for fitting an ordinary least squares regression with model diagnostics such as influence statistics and variance inflation factors?
- A PROC LOGISTIC
 - B PROC LIFETEST
 - C PROC CLUSTER
 - D PROC REG

Answer: D

PROC REG fits ordinary least squares models and provides diagnostics such as influence measures and the VIF option for collinearity. PROC LOGISTIC fits models for binary outcomes, which makes it the most tempting distractor for analysts who think of regression as one family. PROC LIFETEST estimates survival curves, and PROC CLUSTER performs hierarchical clustering.

7. In a logistic regression model, a coefficient of 0.69 for a binary predictor is reported. Which statement interprets it correctly?
- A The odds of the event are about two times higher when the predictor is present
 - B The probability of the event rises by 0.69 when the predictor is present
 - C The event happens 69% of the time when the predictor is present
 - D The log odds of the event fall by 0.69 when the predictor is present

Answer: A

The exponential of 0.69 is about 2, so the odds of the event roughly double when the predictor is present, holding other variables fixed. The statement about the probability rising by 0.69 treats a log odds coefficient as a probability change, which is the most tempting misreading. The event rate and the sign of the coefficient are both misinterpreted in the other options.

8. The area under the receiver operating characteristic curve summarizes how well a classifier ranks positive cases above negative cases, and a value of 0.5 corresponds to a _____ classifier.

Answer: random (also accepted: chance)

An AUC of 0.5 means the model ranks a random positive above a random negative only half the time, the performance of random guessing. A perfect classifier scores 1.0 rather than a value near 0.5. A value below 0.5 indicates a model that ranks in the wrong direction and can be fixed by flipping its scores.

9. Which procedure in SAS is designed to fit a random forest classification model in SAS Viya?
- A PROC LIFEREG
 - B PROC FOREST
 - C PROC TRANSREG
 - D PROC PHREG

Answer: B

PROC FOREST fits random forests and is part of the SAS Viya machine learning procedures for classification and regression. PROC LIFEREG fits parametric survival models, which makes it the most tempting distractor for analysts who associate parametric modeling with prediction. PROC TRANSREG transforms variables for regression, and PROC PHREG fits proportional hazards models.

10. In k-fold cross-validation with k equal to 5, how many times is each observation used for validation, and how many times is it used for training?
- A Five times for validation and never for training
 - B Once for validation and four times for training
 - C Four times for validation and once for training
 - D Once for validation and once for training

Answer: B

Each observation sits in exactly one of the five folds, so it is used once for validation, and it is part of the training data in the other four rounds. The option with four validation rounds and one training round reverses the roles and is the most tempting mistake. The remaining options do not match the scheme of partitioning the data into folds.