SAS A00-406

SAS VIYA SUPERVISED MACHINE LEARNING PIPELINES CERTIFICATION QUESTIONS & ANSWERS

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A00-406

SAS Certified Specialist - Machine Learning Using SAS Viya

50-55 Questions Exam – 62% Cut Score – Duration of 90 minutes

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Discover More about the A00-406 Certification

Are you interested in passing the SAS A00-406 exam? First discover, who benefits from the A00-406 certification. The A00-406 is suitable for a candidate if he wants to learn about Advanced Analytics. Passing the A00-406 exam earns you the SAS Certified Specialist - Machine Learning Using SAS Viya title.

While preparing for the A00-406 exam, many candidates struggle to get the necessary materials. But do not worry; your struggling days are over. The A00-406 PDF contains some of the most valuable preparation tips and the details and instant access to useful **A00-406 study materials just at one click.**

A00-406 SAS Viya Supervised Machine Learning Pipelines Certification Details:

Exam Name	SAS Viya Supervised Machine Learning Pipelines
Exam Code	A00-406
Exam Duration	90 minutes
Exam Questions	50-55
Passing Score	62%
Exam Price	$180 (USD)
Books	**Machine Learning with SAS Viya**
Exam Registration	**Pearson VUE**
Sample Questions	**SAS Viya Supervised Machine Learning Pipelines Certification Sample Question**
Practice Exam	**SAS Viya Supervised Machine Learning Pipelines Certification Practice Exam**

A00-406 Syllabus:

Objective	Details
Data Sources (30 - 36%)	
Create a project in Model Studio	- Bring data into Model Studio for analysis • Import data from a local source (Import tab) • Add data from a stored data source (Data Sources tab) • Use an in-memory data source (Available tab) - Create Model Studio Pipelines with the New Pipeline window • Automatically generate pipelines • Pipeline templates - Advanced Advisor options • Maximum class level • Maximum % missing • Interval cut-off - Partition data into training, validation, and test • Explain why partitioning is important • Explain the different methods to partition data (stratified vs simple random) - Use Event Based Sampling for rare events. - Set up Node Configuration
Explore the data	- Use the DATA EXPLORATION node - Profile data during data definition - Preliminary data exploration using the data tab - Save data with the SAVE DATA node
Modify data	- Explain concepts of replacement, transformation, imputation, filtering, outlier detection - Modify metadata within the DATA tab - Modify metadata with the MANAGE VARIABLES node - Use the REPLACEMENT node to update variable values - Use the TRANSFORMATION node to correct problems with input data sources, such as variables distribution or outliers - Use the IMPUTE node to impute missing values and create missing value indicators - Prepare text data for modeling with the TEXT MINING node - Explain common data challenges and remedies for supervised learning
Use the VARIABLE SELECTION node to identify	- Unsupervised Selection - Fast Supervised Selection - Linear Regression Selection

Objective	Details
important variables to be included in a predictive model	- Decision Tree Selection - Forest Selection - Gradient Boosting Selection - Create Validation from Training - Use multiple methods within the same VARIABLE SELECTION node
Building Models (40 - 46%)	
Describe key machine learning terms and concepts	- Data partitioning: training, validation, test data sets - Observations (cases), independent (input) variables/features, dependent (target) variables - Measurement scales: Interval, ordinal, nominal (categorical), binary variables - Supervised vs unsupervised learning - Prediction types: decisions, rankings, estimates - Curse of dimensionality, redundancy, irrelevancy - Decision trees, neural networks, regression models, support vector machines (SVM) - Model optimization, overfitting, underfitting, model selection - Describe ensemble models - Explain autotuning
Build models with decision trees and ensemble of trees	- Explain how decision trees identify split points • Split search algorithm • Recursive partitioning • Decision tree algorithms • Multiway vs. binary splits • Impurity reduction • Gini, entropy, Bonferroni, IGR, FTEST, variance, chi-square, CHAID • Compare methods to grow decision trees for categorical vs continuous response variables - Explain the effect of missing values on decision trees - Explain surrogate rules - Explain the purpose of pruning decision trees - Explain bagging vs. boosting methods - Build models with the DECISION TREE node • Adjust splitting options • Adjust pruning options - Build models with the GRADIENT BOOSTING node • Adjust general options: number of trees, learning rate, L1/L2 regularization • Adjust Tree Splitting options

Objective	Details
	• Adjust early stopping - Build models with the FOREST node • Adjust number of trees • Adjust tree splitting options - Interpret decision tree, gradient boosting, and forest results (fit statistics, output, tree diagrams, tree maps, variable importance, error plots, autotuned results)
Build models with neural networks	- Describe the characteristics of neural network models • Universal approximation • Neurons, hidden layers, perceptrons, multilayer perceptrons • Weights and bias • Activation functions • Optimization Methods (LBFGS and Stochastic Gradient Descent) • Variable standardization • Learning rate, annealing rate, L1/L2 regularization - Build models with the NEURAL NETWORK node • Adjust number of layers and neurons • Adjust optimization options and early stopping criterion - Interpret NEURAL NETWORK node results (network diagram, iteration plots, and output)
Build models with support vector machines	- Describe the characteristics of support vector machines. - Build model with the SVM node • Adjust general properties (Kernel, Penalty, Tolerance) - Interpret SVM node results (Output)
Use Model Interpretability tools to explain black box models	- Partial Dependence plots - Individual Conditional Expectation plots - Local Interpretable Model-Agnostic Explanations plots - Kernel-SHAP plots
Incorporate externally written code	- Open Source Code node - SAS Code node - Score Code Import node
Model Assessment and Deployment Models (24 - 30%)	
Explain the principles of Model Assessment	- Explain different dimensions for model comparison • Training speed

Objective	Details
	• Model application speed • Tolerance • Model clarity - Explain honest assessment • Evaluate a model with a holdout data set - Use the appropriate fit statistic for different prediction types • Average error for estimates • Misclassification for decisions - Explain results from the INSIGHTS tab
Assess and compare models in Model Studio	- Compare models with the MODEL COMPARISON node - Compare models with the PIPELINE COMPARISON tab - Interpret Fit Statistics, Lift Reports, ROC reports, Event Classification chart - Interpret Fairness and Bias plots
Deploy a model	- Exporting score code - Registering a model - Publish a model - SCORE DATA node

Broaden Your Knowledge with SAS A00-406 Sample Questions:

Question: 1

Which statement is true regarding decision trees and models based on ensembles of trees?

a) In the gradient boosting algorithm, for all but the first iteration, the target is the residual from the previous decision tree model.
b) For a Forest model, the out-of-bag sample is simply the original validation data set from when the raw data partitioning took place.
c) In the Forest algorithm, each individual tree is pruned based on using minimum Average Squared Error.
d) A single decision tree will always be outperformed by a model based on an ensemble of trees.

Answer: a

Question: 2

In natural language processing (NLP), what is a common preprocessing step for text data before building models?

a) Standardization
b) Tokenization
c) Principal Component Analysis (PCA)
d) One-Hot Encoding

Answer: b

Question: 3

A project has been created and a pipeline has been run in Model Studio. Which project setting can you edit?

a) Advisor Options for missing values
b) Partition Data percentages
c) Rules for model comparison statistic
d) Event-based Sampling proportions

Answer: c

Question: 4

Given the following properties for a neural network model, which statement is true regrading hidden units in the model? The following SAS program is submitted:


Properties

Property name	Property value
missAsLevl	false
inputStd	STD
nHidden	1
hiddenAll	false
hiddenAllNum	50
actFuncAll	TANH
hidden1	26
actFunc1	TANH

a) There are no hidden units in the model.
b) The number of hidden units is 1.
c) The number of hidden units is 50.
d) The number of hidden units is 26.

Answer: d

Question: 5

Which statements are true for the F1 score?

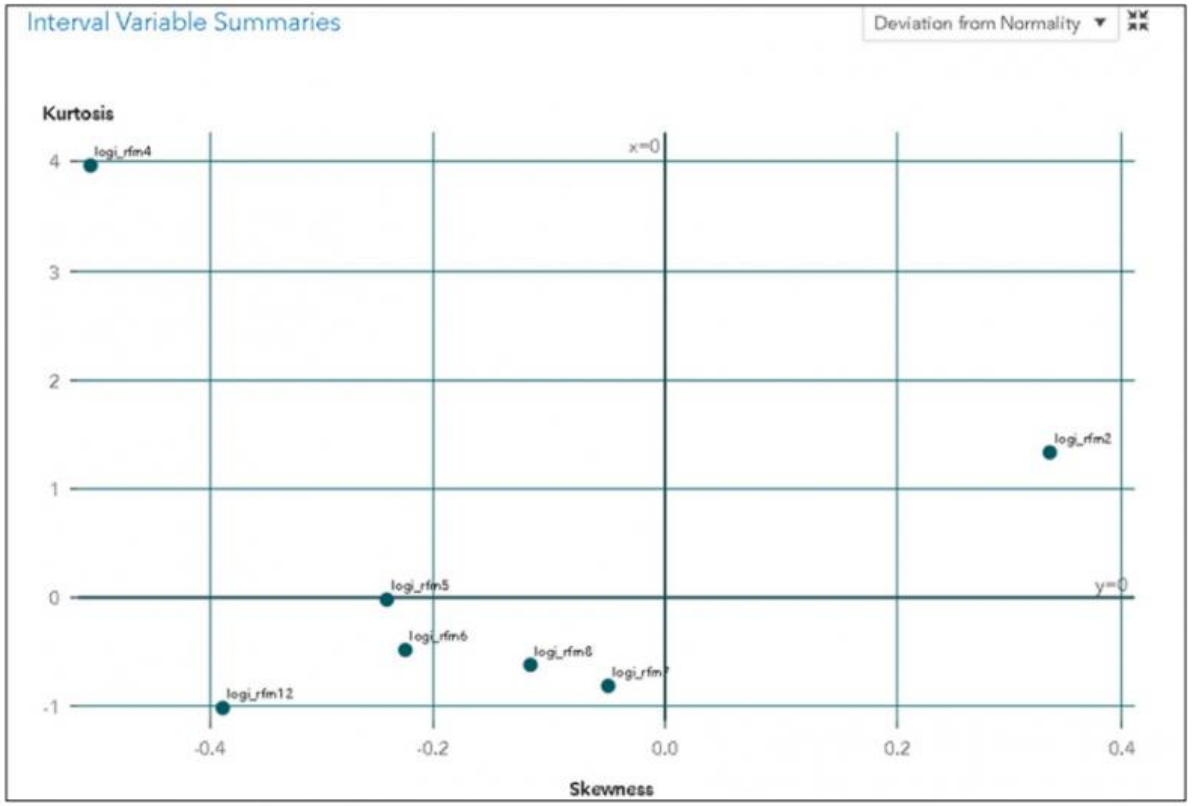
(Choose 2.)

a) F1 score is calculated based on a depth value.
b) F1 score is calculated based on a cut off value.
c) F1 score is applicable to a model with a binary target.
d) F1 score is applicable to a model with an interval target.

Answer: b, c

Question: 6

Refer to the exhibit below:



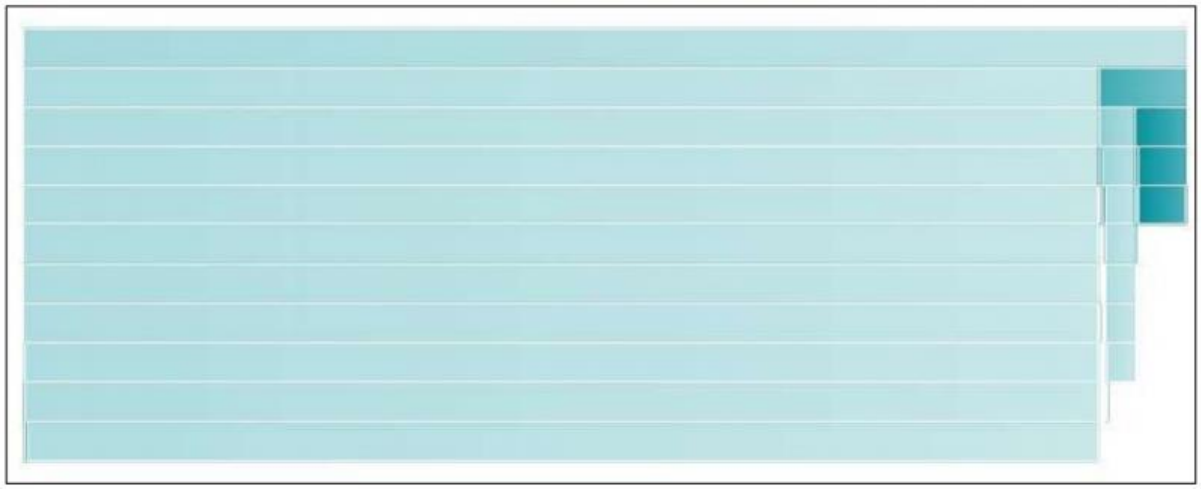
Based on the output from the Data Exploration node shown in the exhibit, which variable has the most thin tails (most platykurtic distribution)?

a) Logi_rfm4
b) Logi_rfm6
c) Logi_rfm8
d) Logi_rfm12

Answer: d

Question: 7

Refer to the treemap shown in the exhibit below:



Which statement is true about the tree map for a decision tree with a binary target?

a) The top bar represents the node with the highest probability of event.
b) The darker bars represent nodes with a lower probability of event.
c) The top bar represents the node with the highest count.
d) The wider bars represent nodes with a higher probability of event.

Answer: c

Question: 8

When building a recommendation system, which type of filtering is based on the user's behavior and preferences?

a) Content-based filtering
b) Collaborative filtering
c) Matrix factorization
d) Singular Value Decomposition (SVD)

Answer: b

Question: 9

Which feature extraction method can take both interval variables and class variables as inputs?

a) Autoencoder
b) Principal component analysis
c) Singular value decomposition
d) Robust PCA

Answer: a

Question: 10

What is the difference between a classification problem and a regression problem in machine learning?

a) Classification predicts categorical outcomes, while regression predicts numeric outcomes.
b) Classification is a type of regression problem.
c) Regression predicts categorical outcomes, while classification predicts numeric outcomes.
d) There is no difference; the terms are used interchangeably.

Answer: a

Avail the Study Guide to Pass A00-406 SAS Viya Supervised Machine Learning Pipelines Exam:

- Find out about the A00-406 syllabus topics. Visiting the official site offers an idea about the exam structure and other important study resources. Going through the syllabus topics help to plan the exam in an organized manner.
- Once you are done exploring the **A00-406 syllabus**, it is time to plan for studying and covering the syllabus topics from the core. Chalk out the best plan for yourself to cover each part of the syllabus in a hassle-free manner.
- A study schedule helps you to stay calm throughout your exam preparation. It should contain your materials and thoughts like study hours, number of topics for daily studying mentioned on it. The best bet to clear the exam is to follow your schedule rigorously.
- The candidate should not miss out on the scope to learn from the A00-406 training. Joining the SAS provided training for A00-406 exam helps a candidate to strengthen his practical knowledge base from the certification.
- Learning about the probable questions and gaining knowledge regarding the exam structure helps a lot. Go through the **A00-406 sample questions** and boost your knowledge
- Make yourself a pro through online practicing the syllabus topics. A00-406 practice tests would guide you on your strengths and weaknesses regarding the syllabus topics. Through rigorous practicing, you can improve the weaker sections too. Learn well about time management during exam and become confident gradually with practice tests.

Career Benefits:

Passing the A00-406 exam, helps a candidate to prosper highly in his career. Having the certification on the resume adds to the candidate's benefit and helps to get the best opportunities.

Here Is the Trusted Practice Test for the A00-406 Certification

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