



# CloudGuru - Practice Exam - 3rd attempt

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## Practice Exam

AWS Certified Machine Learning - Specialty


3 hours  
65 questions

**You scored 86%**

You answered **56** of **65** questions correctly in **01:18:06**

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**QUICK TIPS**

 **You finished early**  
You had an extra 101 minutes. We recommend using all of the available time to double check your answers, especially those you are uncertain of.

**DOMAIN BREAKDOWN**

Modeling	<div><div></div></div>	83%
Machine Learning Implementation and Operations	<div><div></div></div>	92%
Data Engineering	<div><div></div></div>	85%
Exploratory Data Analysis	<div><div></div></div>	87%

Questions I did not get right:

83%

DOMAIN

Modeling

3.1 Frame business problems as machine learning problems 3.2 Select the appropriate model(s) for a given machine learning problem 3.3 Train machine learning models 3.4 Perform hyperparameter optimization 3.5 Evaluate machine learning models Questions for this domain comprise **36% of the total questions** for this exam.

QUESTIONS

16	21	41	52	1
4	10	11	13	15
19	23	24	25	26
27	31	34	45	47
53	58	61	63	

**QUESTION 16**

A company is building an application that allows high school students to view programming videos to learn more about coding. The instructors upload videos directly to the platform. You have been tasked with designing a model to determine whether the videos uploaded are safe for viewing by high school students. It is critical that no inappropriate videos make it onto the platform. Which is the MOST important metric to evaluate during the machine learning process for this task?

- ☐ Accuracy
- ☐ AUC/ROC
- ☒ Precision **Selected**
- ☒ Recall

**EXPLANATION**

The most important metric to evaluate is going to be the recall metric. Since it's extremely important we find all the explicit cases, then this will be our positive class. If the model predicts a video is NOT explicit and the video is explicit, this is the most expensive case. We want to minimize these. This means we want to minimize the False Negatives, which makes Recall the most important metric. [Precision and recall - Wikipedia](#)

Rate this question

I put the question is: Is video safe? Y/N as the question refers to "safe".  
 We want to limit false positives, where we say a video is safe but it is not =>  
 Precision

But the other way to ask the question I: IS the video explicit? Y/N  
 In that case, we want to limit false negatives, where we way a video is not explicit  
 but it is => Recall

So it all comes down the the formulation of the binary classifier problem

#### QUESTION 21

You are consulting with a large educational organization on a ML model using the built-in BlazingText SageMaker algorithm. They have asked for help deciding which metric to use in an automatic model tuning job. What can you recommend to help them get started?

- ✓ The metrics to use for optimization can vary depending on how you are using the algorithm.
- ✗ Metrics with a prefix of validation: are the ones to always use for optimization jobs. Selected
- ✗ The proper metric for BlazingText optimization is validation:accuracy.
- ✗ Metrics with a prefix of train: are the ones to always use for optimization jobs.
- ✗ BlazingText is not supported with hyperparameter tuning.

#### EXPLANATION

BlazingText optimization is an example of where we would use different metrics depending on how we are using the algorithm. You should consult the documentation for the algorithm you are using to determine the proper metric. [Tune a BlazingText Model - Amazon SageMaker](#)

I agree with that as I knew we could use BlazingText in Word2Vec mode or Text Classification.

But what I selected is correct too.

#### QUESTION 41

You are trying to follow an old family recipe for making sourdough bread. The recipe states that you should add enough water to the flour such that it is slightly sticky. Which of the following best characterizes this instruction?

- ☒ Algorithm Selected
- ☐ Supervised Learning
- ☒ Heuristic
- ☐ Unsupervised Learning
- ☐ Reinforcement Learning
- ☐ Metric

#### EXPLANATION

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A heuristic technique, often called simply a heuristic, is any approach to problem solving or self-discovery that employs a practical method, not guaranteed to be optimal, perfect, or rational, but instead sufficient for reaching an immediate goal. Where finding an optimal solution is impossible or impractical, heuristic methods can be used to speed up the process of finding a satisfactory solution. A heuristic is an educated guess or intuition that usually does not ensure an optimal outcome. By asking the chef to evaluate the quantity of water needed based on individual perception best embodies a heuristic. [ALGORITHMS AND HEURISTICS](#)

#### QUESTION 52

A binary classification model has been created to sort parts on an assembly line into acceptable or unacceptable, based on a complex array of readings. The model incorrectly decides that some flawed parts are acceptable when they should have been marked as unacceptable. Which of the following correctly defines this type of result?

- ✓ False Negative
- ✗ False Positive Selected
- ✗ Type I Error Selected
- ✗ True Negative
- ✓ Type II Error
- ✗ True Positive

#### EXPLANATION

A false negative is when a model does not properly flag something that it should have. In this case, the flawed parts that got through as good parts were incorrectly identified as ok when they were bad. A false negative is also known as a Type II error. [Type I and type II errors - Wikipedia](#)

Same here, formatting the question is key.

It should be: is a part "unacceptable"?

In that case Type II makes sense with False negatives (not this part is acceptable when it is not)

I had formulated as: is a part "acceptable?"

92%

## DOMAIN

## Machine Learning Implementation and Operations

4.1 Build machine learning solutions for performance, availability, scalability, resiliency, and fault tolerance 4.2 Recommend and implement the appropriate machine learning services and features for a given problem 4.3 Apply basic AWS security practices to machine learning solutions 4.4 Deploy and operationalize machine learning solutions Questions for this domain comprise **20% of the total questions** for this exam.

## QUESTIONS

64	2	7	12	22
36	39	43	46	50
54	55	60		

## QUESTION 64

You have been asked to help design a customer service bot that can help answer the most common customer service questions posed on a public chat service. Which of the following might meet the need and do so with the minimum overhead?

- ☐ SageMaker Object2Vec
- ☐ SageMaker BlazingText
- ☒ SageMaker Seq2Seq **Selected**
- ☒ Amazon Lex
- ☐ Amazon Polly
- ☐ SageMaker BotOps

## EXPLANATION

Amazon Lex can be used to create a chat bot that can understand natural language. As a service, it does not require any EC2 instances or models to be deployed before using and therefore has less overhead than a customized model using SageMaker. [Amazon Lex – Build Conversation Bots](#)

Rate this question

That one was obvious - I misread it and should have focused on "bot"

85%

## DOMAIN

## Data Engineering

1.1 Create data repositories for machine learning 1.2 Identify and implement a data-ingestion solution 1.3 Identify and implement a data-transformation solution Questions for this domain comprise **20% of the total questions** for this exam.

## QUESTIONS

14	30	3	8	17
29	33	35	37	40
42	56	65		

## QUESTION 14

You work for a manufacturing company who has hundreds of conveyor belts with built-in IoT sensors. These sensors stream data into AWS using Kinesis Data Streams. The features associated with the data is belt\_id, building\_number, belt\_temp, outside\_temp, and power\_consumption. During the processing of the data, you need to transform the data and store it in a data store. Which combination of services can you use to achieve this?

- ☒ Use Kinesis Data Streams to immediately write the data into S3. Next, setup a Lambda function that fires anytime an object is PUT onto S3. Transform the data from the Lambda function, then write the transformed data into S3 **Selected**
- ☒ Immediately send the data to Lambda from Kinesis Data Streams. Transform the data in Lambda and write the transformed data into S3
- ☒ Setup Kinesis Data Analytics to ingest the data from Kinesis Data Stream, then run real-time SQL queries on the data to transform it. After the data is transformed, ingest the data with Kinesis Data Firehose and write the data into S3 **Selected**
- ☐ Use Kinesis Data Analytics to run real-time SQL queries to transform the data and immediately write the transformed data into S3.
- ☒ Setup Kinesis Firehose to ingest data from Kinesis Data Streams, then send data to Lambda. Transform the data in Lambda and write the transformed data into S3 **Selected**

## EXPLANATION

[Kinesis Data Streams and Kinesis Data Analytics cannot write data directly to S3.](#) Kinesis Data Firehose is used as the main delivery mechanism for outputting data into S3. You can also use Lambda to write data into S3. [Amazon Kinesis Data Analytics for SQL Applications: How It Works - Amazon Kinesis Data Analytics for SQL Applications Developer Guide](#)

### QUESTION 30

A machine learning model is being created using Amazon's Factorization Machines algorithm to help make click predictions and item recommendations for new customers. Which of the following would be candidates during the training process?

- ✓ Creating a binary classification model where the testing dataset is scored using Binary Cross Entropy (Log Loss), Accuracy, and F1 Score.
- ✗ Using sparse data in CSV format as training data.
- ✗ Making inferences to the model in application/csv format.
- ✓ Using sparse data in recordIO-protobuf format with Float32 tensors as training data. Selected
- ✓ Creating a regression model where the testing dataset is scored using Root Mean Square Error (RMSE). Selected
- ✗ Creating a multi-classification model where the testing dataset is scored using Area Under The Curve (AUC). Selected

### EXPLANATION

The factorization machine algorithm can be run in either in binary classification mode or regression mode. In regression mode, the testing dataset is scored using Root Mean Square Error (RMSE). In binary classification mode, the test dataset is scored using Binary Cross Entropy (Log Loss), Accuracy (at threshold=0.5) and F1 Score (at threshold =0.5). For training, the factorization machines algorithm currently supports only the recordIO-protobuf format with Float32 tensors. CSV format is not a good candidate. For inference, factorization machines support the application/json and x-recordio-protobuf formats. [Factorization Machines Algorithm - Amazon SageMaker](#)

87%

## DOMAIN

## Exploratory Data Analysis

2.1 Sanitize and prepare data for modeling 2.2 Perform feature engineering 2.3 Analyze and visualize data for machine learning Questions for this domain comprise **24% of the total questions** for this exam.

## QUESTIONS

28	32	5	6	9
18	20	38	44	48
49	51	57	59	62

## QUESTION 28

You have been tasked with creating a labeled dataset by classifying text data into different categories depending on the summary of the corpus. You plan to use this data with a particular machine learning algorithm within AWS. Your goal is to make this as streamlined as possible with minimal amount of setup from you and your team. What tool can be used to help label your dataset with the minimum amount of setup?

- ☐ Marketplace AMI for NLP problems
- ☐ Amazon Neural Topic Modeling (NTM) built-in algorithm
- ☐ Amazon Latent Dirichlet Allocation (LDA) algorithm
- ☐ AWS Comprehend sentiment analysis
- ☒ AWS SageMaker GroundTruth text classification job
- ☐ AWS Comprehend entity detection Selected

## EXPLANATION

You can use SageMaker Ground Truth to create ground truth datasets by creating labeling jobs. When you create a text classification job, workers group text into the categories that you define. You can define multiple categories but the worker can apply only one category to the text. Use the instructions to guide your workers to make the correct choice. Always define a generic class in addition to your specific classes. Giving your workers a generic option helps to minimize inaccurately classified text. [Amazon SageMaker Ground Truth - Amazon SageMaker](#)

Rate this question

I hesitated on that one between the 2

87%

## DOMAIN

## Exploratory Data Analysis

2.1 Sanitize and prepare data for modeling 2.2 Perform feature engineering 2.3 Analyze and visualize data for machine learning Questions for this domain comprise **24% of the total questions** for this exam.

## QUESTIONS

28	32	5	6	9
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## QUESTION 32

You are preparing plain text corpus data to use in a NLP process. Which of the following is/are one of the important step(s) to pre-process the text in NLP based projects?

- ☒ Stemming Selected
- ☒ Word standardization
- ☐ Congregate all of the plain text corpus data into a single document
- ☐ Add random text noise
- ☒ Stop word removal Selected
- ☐ One-hot encode ordinal n-gram values Selected

## EXPLANATION

Stemming is a rudimentary rule-based process of stripping the suffixes ("ing", "ly", "es", "s" etc) from a word. Stop words are those words which will have no relevance to the context of the data for example is/am/are. **Object Standardization is also one of the good ways to pre-process the text by removing things like acronyms, hashtags with attached words, and colloquial slang that typically are not recognized by search engines and models.** [Natural language processing - Wikipedia](#)

Rate this question