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## Exam Professional Machine Learning Engineer All Questions

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### EXAM PROFESSIONAL MACHINE LEARNING ENGINEER TOPIC 1 QUESTION 167 DISCUSSI...

Actual exam question from Google's Professional Machine Learning Engineer

Question #: 167

Topic #: 1

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You are working with a dataset that contains customer transactions. You need to build an ML model to predict customer purchase behavior. You plan to develop the model in BigQuery ML, and export it to Cloud Storage for online prediction. You notice that the input data contains a few categorical features, including product category and payment method. You want to deploy the model as quickly as possible. What should you do?

- A. Use the TRANSFORM clause with the ML.ONE\_HOT\_ENCODER function on the categorical features at model creation and select the categorical and non-categorical features.
- B. Use the ML.ONE\_HOT\_ENCODER function on the categorical features and select the encoded categorical features and non-categorical features as inputs to create your model.
- C. Use the CREATE MODEL statement and select the categorical and non-categorical features.
- D. Use the ML.MULTI\_HOT\_ENCODER function on the categorical features, and select the encoded categorical features and non-categorical features as inputs to create your model.

Show Suggested Answer

by [b1a8fae](#) at Jan. 8, 2024, 3:31 p.m.

## Comments

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  **YushiSato** 2 months, 1 week ago

**Selected Answer: A**

TRANSFORM is used to transform the input for both learning and inference.  
ONE\_HOT\_ENCODER can also be used within TRANSFORM.  
The other options require conversion on the input in prediction.  
A is correct.

   upvoted 1 times

  **YushiSato** 2 months, 1 week ago

Sorry, BlehMaks is correct.  
In this case, we don't use TRANSFORM, we need to do the conversion in the forecast as well.

   upvoted 1 times

  **bobjr** 4 months, 2 weeks ago

**Selected Answer: A**

```
CREATE OR REPLACE MODEL `project.dataset.model_name`  
OPTIONS(model_type='logistic_reg') AS  
SELECT  
*,  
TRANSFORM(  
product_category,  
payment_method  
USING  
ML.ONE_HOT_ENCODER(product_category) AS encoded_product_category,  
ML.ONE_HOT_ENCODER(payment_method) AS encoded_payment_method  
)  
FROM  
`project.dataset.table_name`;
```



   upvoted 2 times

  **BlehMaks** 9 months, 2 weeks ago

**Selected Answer: B**

When the TRANSFORM clause is present, only output columns from the TRANSFORM clause are used in training. Any results from query\_statement that don't appear in the TRANSFORM clause are ignored.  
<https://cloud.google.com/bigquery/docs/reference/standard-sql/bigqueryml-syntax-create#transform>  
so if you want TRANSFORM then use TRANSFORM for both categorical and non-categorical features



   upvoted 4 times

  **pikachu007** 9 months, 2 weeks ago

**Selected Answer: B**

Given the goal of quickly deploying the model for predicting customer purchase behavior while handling categorical features, option B - "Use the ML.ONE\_HOT\_ENCODER function on the categorical features and select the encoded categorical features and non-categorical features as inputs to create your model" seems to be the most appropriate. This approach directly handles the encoding of categorical features using one-hot encoding and selects the necessary features for model creation, ensuring efficient utilization of categorical data in the BigQuery ML model.

   upvoted 1 times

  **b1a8fae** 9 months, 2 weeks ago

**Selected Answer: B**

Only B and D make sense. Between the two, after reading the use case of multi-hot encoding (<https://cloud.google.com/bigquery/docs/auto-preprocessing#feature-transform>), I would tend towards B, since one-hot encoding is preferred over in case of using non-numerical, non-array features (product category and payment methods are often represented as such); multi-hot encoding is preferred in case of non-numerical, array features, which is not the case here.

   upvoted 1 times

  **b1a8fae** 9 months, 2 weeks ago

Also I understand it cannot be A because it says "take the categorical features" as opposed to the more specific "take the encoded categorical features" in B

   upvoted 1 times

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