

## Sample Questions

*The following sample questions are not inclusive and do not necessarily represent all of the types of questions that comprise the exams. The questions are not designed to assess an individual's readiness to take a certification exam.*

### SAS® Viya® 3.5 Natural Language Processing and Computer Vision exam

#### Question 1:

Which statement is **FALSE** regarding the loadImages action?

- A. All images are represented in a single table after loading.
- B. Images can be 3-dimensional.
- C. Images from multiple sources can be loaded in a single call.
- D. Encoded images must be decoded prior to loading.

Answer: D

#### Question 2:

Which statements are **TRUE** regarding the creation of automatic custom concept rules from textual elements in the Concept node? *(Choose two.)*

- A. Text Parsing node must precede a Concept node in the pipeline when creating automatic custom concept rules from textual elements.
- B. The automatic custom concept rules generated from textual elements in the Concept node is the PREDICATE\_RULE type only.
- C. The textual elements available for writing concept rules are comprised of all terms generated by the Text Parsing node.
- D. The automatic custom concept rules generated from textual elements in the concept node is CONCEPT\_RULE type only.

Answer: A, D

**Question 3:**

Which statement is **TRUE** regarding encoding??

- A. Latin encoding is an extension of ASCII encoding with specific extensions.
- B. Asian languages (i.e. Japanese) are typically encoded in ASCII.
- C. UTF-8 is a subset of ASCII encoding.
- D. A UTF-8 character is 4 bytes long.

Answer: A

**Question 4:**

When you test the text string "SAS VISUAL TEXT ANALYTICS" using the concept rule:

```
CLASSIFIER:Visual Text Analytics
```

Which entities will be highlighted in the text string?

*Enter your answer in the field above.*

Answer: VISUAL TEXT ANALYTICS

**Question 5:**

A concept is defined using two rules:

```
PREDICATE_RULE:(airplane,airport):(SENT, "_airplane{cessna}", "_airport{john wayne airport}")
```

```
PREDICATE_RULE:(make,model):(DIST_1, "_make{piper}", "_model{warrior}")
```

Which result shows the text highlighting produced by this concept??

- A. I flew a **Cessna 172 from John Wayne Airport** to Lindbergh Field.  
I left my **Piper Warrior** 2,216 miles away at my home base, Raleigh Executive Jetport.
- B. I flew a **Cessna 172 from John Wayne Airport to Lindbergh Field.**  
I left my **Piper Warrior** 2,216 miles away at my home base, Raleigh Executive Jetport.
- C. I flew a **Cessna 172 from John Wayne Airport** to Lindbergh Field.  
I left my **Piper Warrior** 2,216 miles away at my home base, Raleigh Executive Jetport.
- D. I flew a **Cessna** 172 from John Wayne Airport to Lindbergh Field.  
I left my **Piper** Warrior 2,216 miles away at my home base, Raleigh Executive Jetport.

Answer: A

**Question 6:**

Complete the concept rule by adding appropriate rule modifiers to extract two wild card terms that start with

CONCEPT:Visual

*Enter your answers in the fields above.*

Answers: \_cap, \_cap

**Question 7:**

A documents data set has a document ID, a text variable, and 3 category variables. There is a total of 13 topics. A unique ID (`__uniqueid__`) has been added to the output data set.

How many columns are in the output data set obtained from the results window of the Topics node??

- A. 29
- B. 32
- C. 19
- D. 16

Answer: B

**Question 8:**

Given the category rule:

```
(SENT, (OR, "mortgage", "refinance", (NOTIN, "home", "home equity")), "[InterestRateValue]")
```

Which document would **NOT** be selected based on the text strings in the answer options??

- A. I was able to refinance my home loan at a 4% interest rate last month.
- B. Currently 2.8%, the refinance interest rate was lower than the home equity line of credit rate.
- C. The refinance was lower than the original mortgage, which had an 8 percent rate.
- D. The current refinance home mortgage rate is 5%.

Answer: B

**Question 9:**

Complete the category rule COMPLETE\_NAME by adding the correct Boolean Operator that should be used to enforce a first name followed by the last name in the category rule.

```
(, _tmac:"@NAME/FIRST", _tmac:"@NAME/LAST")
```

Enter your answer in the field above.

Answer: ORD

**Question 10:**

Given the CASL code:

```
BuildModel/model={name='seqlabel', replace=1} type = 'RNN';  
AddLayer/model='seqlabel' name='data' layer={type='input'};  
AddLayer/model='seqlabel' name='rnn11' layer={type='recurrent'  
    n=10 rnnType='GRU' outputtype='samelength'  
    reverse=r1} srcLayers={'data'};  
AddLayer/model='seqlabel' name='rnn12' layer={type='recurrent'  
    n=10 rnnType='GRU' outputtype='samelength'  
    reverse=r2} srcLayers=src1;  
AddLayer/model='seqlabel' name='outlayer' layer={act='softmax'  
    type='output'} srcLayers=src2;
```

Which statement would assign the correct values to build a bi-directional recurrent neural network capable of sequence labeling?

- A. r1 = True, r2= True, src1={'rnn11'}, src2={'data','rnn12'}
- B. r1 = False, r2= True, src1={'rnn11'}, src2={'rnn11','rnn12'}
- C. r1 = True, r2= False, src1={'data'}, src2={'rnn11','rnn12'}
- D. r1 = False, r2= True, src1={'data'}, src2={'rnn11','data'}

Answer: C

**Question 11:**

Given the code adding 3 layers to a convolutional network:

```
deepLearn.addLayer / layer={type="INPUT"
                      nchannels=1 width=10 height=10}
                      modelTable={name="simple"} name="data";

deepLearn.addLayer / layer={type="CONVO"
                      nFilters=10 width=5 height=5 includeBias=True}
                      modelTable={name="simple"} name="conv1"
                      srcLayers={"data"};

deepLearn.addLayer / layer={type='POOL'
                      width=2 height=2 stride=2 pool='max' }
                      modelTable={name="simple"} name="pool1"
                      srcLayers={"conv1"}
```

How many parameters do the three layers add to the convolutional neural network?

- A. 259
- B. 260
- C. 250
- D. 274

Answer: B

**Question 12:**

Assume a feature set defined by a 244\*244\*12 tensor. This is layer A.  
A 7\*7 filter with stride of 1 is applied to layer A resulting in layer B. Another 7\*7 filter with stride of 1 is applied to layer B resulting in layer C.

What padding must would SAS apply as the default value in layer B??

- A. 1
- B. 2
- C. 3
- D. 4

Answer: C

**Question 13:**

What is a criticism of the pooling operation?

- A. Complicates the loss (cost) function.
- B. Increases the model parameters.
- C. Overemphasizes the tails of the input distribution.
- D. Increases the degradation of spatial information.

Answer: D

**Question 14:**

Given the code specifying the three initial layers of a convolutional network:

```
deepLearn.addLayer / layer={type="INPUT"  
                           nChannels=1 width=20 height=20}  
                           modelTable={name="simple"} name="data";
```

```
deepLearn.addLayer / layer={type="CONVOLUTION"  
                           nFilters=1 width=9 height=9}  
                           modelTable={name="simple"} name="conv1"  
                           srcLayers={"data"};
```

```
deepLearn.addLayer / layer={type='FULLCONNECT' n=5 includeBias=True}  
                           modelTable={name="simple"} name="fc1"  
                           srcLayers={"conv1"};
```

How many parameters are estimated for layer "fc1"?

- A. 105
- B. 725
- C. 905
- D. 2005

Answer: D

**Question 15:**

The output for a particular neuron in the hidden layer is -0.001.

What activation function is used in this hidden layer?

- A. ReLU
- B. TanH
- C. Logistic
- D. Softmax

Answer: B

**Question 16:**

Which statement is **FALSE** when you use dITune to tune the hyperparameters of CNN?

- A. It tunes model architecture.
- B. It tunes miniBatchSize.
- C. It tunes learning rate.
- D. It tunes momentum rate.

Answer: A

**Question 17:**

When scoring new images with a neural network using dlScore, which statement is **TRUE** about the weights?

- A. The weights change due to backpropagation.
- B. The weights do not change.
- C. The weights change due to covariate shift of the distribution of new images.
- D. The weights change only when there is a new image that is significantly different from the training images.

Answer: B



**Question 18:**

Given the code to add a convolution layer:

```
AddLayer(model='myModel' name="conv2"  
          layer={type='convolution' nFilters=32 width=1 height=1 stride=1}  
          includeBias=True  
          srcLayers={"conv1"});
```

Assume the output data dimension of the “conv1” layer is 100\*100\*10 (width\*height\*depth)

What is the number of trainable parameters for the layer “conv2”?

- A. 320
- B. 32
- C. 42
- D. 352

Answer: D

**Question 19:**

Which is **NOT** a useful method of regularization when training a Convolutional Neural Network?

- A. Adding a dropout layer
- B. Adding fully connected layers
- C. Penalizing the cost function
- D. Early stopping

Answer: B