Deep convolutional models

Quiz, 10 questions

1			
poin	t		
	of the following do you typically see as you move to layers in a ConvNet?		
	n_H and n_W increases, while n_C also increases		
	n_H and n_W decreases, while n_C also decreases		
	n_H and n_W decrease, while n_C increases		
	n_H and n_W increases, while n_C decreases		
1 point 2. Which of the following do you typically see in a ConvNet? (Check all that apply.)			
	Multiple CONV layers followed by a POOL layer		
	Multiple POOL layers followed by a CONV layer		
	FC layers in the last few layers		
	FC layers in the first few layers		

3.

In order to be able to build very deep networks, we usually only use pooling layers to downsize the height/width of the activation volumes while convolutions are used with "valid" padding. Otherwise, we would downsize the input of the model too quickly.

True

False

1 point

4.

Training a deeper network (for example, adding additional layers to the network) allows the network to fit more complex functions and thus almost always results in lower training error. For this question, assume we're referring to "plain" networks.

True

False

1 point

5.

The following equation captures the computation in a ResNet block. What goes into the two blanks above?

 $a^{[l+2]} = g(W^{[l+2]}g(W^{[l+1]}a^{[l]} + b^{[l+1]}) + b^{l+2} +$ _____) + _____

igcup 0 and $z^{[l+1]}$, respectively

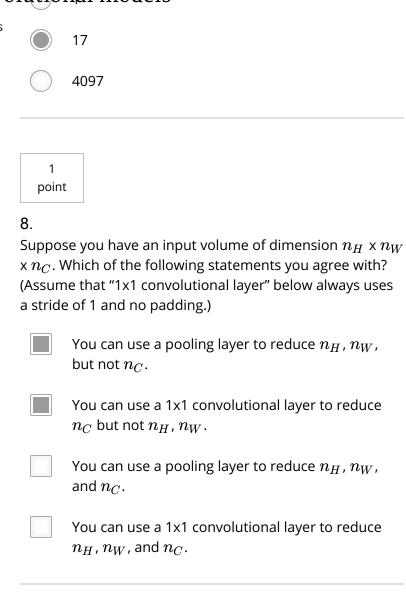
Deep convo	0 and $a^{[l]}$, respectively $z^{[l]}$ and $a^{[l]}$, respectively.	-
	$igcap a^{[l]}$ and 0, respec	tively
	1 point	
	ភិ. Which ones of the follow Networks are true? (Ched	ing statements on Residual k all that apply.)
	A ResNet with L l of L^2 skip conne	ayers would have on the order ctions in total.
	•	ions compute a complex non- the input to pass to a deeper ork.
	network to learn	ion makes it easy for the an identity mapping between e output within the ResNet
		nection helps the gradient to nd thus helps you to train
	1 point	
	7 . Suppose you have an inp	out volume of dimension

64x64x16. How many parameters would a single 1x1

convolutional filter have (including the bias)?

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1 point

9.

Which ones of the following statements on Inception Networks are true? (Check all that apply.)



A single inception block allows the network to use a combination of 1x1, 3x3, 5x5 convolutions

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Quiz, 10 questions		Making an inception network deeper (by stacking more inception blocks together) should not hurt training set performance.			
		Inception networks incorporates a variety of network architectures (similar to dropout, which randomly chooses a network architecture on each step) and thus has a similar regularizing effect as dropout.			
		Inception blocks usually use 1x1 convolutions to reduce the input data volume's size before applying 3x3 and 5x5 convolutions.			
	1 point				
	10.				
	Which of the following are common reasons for using open-source implementations of ConvNets (both the model and/or weights)? Check all that apply.				
		Parameters trained for one computer vision task are often useful as pretraining for other computer vision tasks.			
		The same techniques for winning computer vision competitions, such as using multiple crops at test time, are widely used in practical deployments (or production system deployments) of ConvNets.			
		It is a convenient way to get working an implementation of a complex ConvNet architecture.			

A model trained for one computer vision task can usually be used to perform data Deep convolutional madels seven for a different computer vision task.

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