1. If you have 10,000,000 examples, how would you split the train/dev/test set?   **1 / 1 point**

    ◯ 60% train . 20% dev . 20% test

    ◉ 98% train . 1% dev . 1% test

    ◯ 33% train . 33% dev . 33% test

    ✓ **Correct**

2. The dev and test set should: **1 / 1 point**

    ◯ Have the same number of examples

    ◯ Come from different distributions

    ◯ Be identical to each other (same (x,y) pairs)

    ◉ Come from the same distribution

    ✓ **Correct**

3. If your Neural Network model seems to have high variance, what of the following would be   **1 / 1 point**
    promising things to try?

    ☐ Make the Neural Network deeper

    ☑ Add regularization

✓ **Correct**

☑ Get more training data

✓ **Correct**

☐ Get more test data

☐ Increase the number of units in each hidden layer

4. You are working on an automated check-out kiosk for a supermarket, and are building a classifier for apples, bananas and oranges. Suppose your classifier obtains a training set error of 0.5%, and a dev set error of 7%. Which of the following are promising things to try to improve your classifier? (Check all that apply.)

1 / 1 point

☑ Increase the regularization parameter lambda

✓ **Correct**

☐ Decrease the regularization parameter lambda

☑ Get more training data

✓ **Correct**

☐ Use a bigger neural network

5. What is weight decay?   **1 / 1 point**

○ Gradual corruption of the weights in the neural network if it is trained on noisy data.

◉ A regularization technique (such as L2 regularization) that results in gradient descent shrinking the weights on every iteration.

○ The process of gradually decreasing the learning rate during training.

○ A technique to avoid vanishing gradient by imposing a ceiling on the values of the weights.

✓ **Correct**

6. What happens when you increase the regularization hyperparameter lambda?   **1 / 1 point**

○ Doubling lambda should roughly result in doubling the weights

◉ Weights are pushed toward becoming smaller (closer to 0)

○ Gradient descent taking bigger steps with each iteration (proportional to lambda)

○ Weights are pushed toward becoming bigger (further from 0)

✓ **Correct**

7. With the inverted dropout technique, at test time: **1 / 1 point**

○ You apply dropout (randomly eliminating units) but keep the 1/keep_prob factor in the calculations used in training.

◉ You do not apply dropout (do not randomly eliminate units) and do not keep the 1/keep_prob factor in the calculations used in training

○ You apply dropout (randomly eliminating units) and do not keep the 1/keep_prob factor in the calculations used in training

○ You do not apply dropout (do not randomly eliminate units), but keep the 1/keep_prob factor in the calculations used in training.

✓ **Correct**

8. Increasing the parameter keep_prob from (say) 0.5 to 0.6 will likely cause the following: (Check the two that apply)

1 / 1 point

☐ Increasing the regularization effect

☑ Reducing the regularization effect

✓ **Correct**

☐ Causing the neural network to end up with a higher training set error

☑ Causing the neural network to end up with a lower training set error

✓ **Correct**

9. Which of these techniques are useful for reducing variance (reducing overfitting)? (Check all that apply.)

1 / 1 point

☑ Dropout

✓ **Correct**

☑ Data augmentation

✓ **Correct**

☐ Xavier initialization

☑ L2 regularization

✓ **Correct**

☐ Exploding gradient

☐ Gradient Checking

☐ Vanishing gradient

10. Why do we normalize the inputs x?

1 / 1 point

○ Normalization is another word for regularization--It helps to reduce variance

○ It makes the parameter initialization faster

○ It makes it easier to visualize the data

⦿ It makes the cost function faster to optimize

✓ **Correct**