#### Q. 1: Model Variance

How do you measure the variance of a model?

By measuring how much does the estimates of the model change on the test data on changing the training data

Q2:

What is regularization?

It is a technique that is used to strike a balance between model complexity and model accuracy on training data.

**✓ Correct**

**Feedback:**

Regularization does not improve accuracy; it improves the balance between accuracy and complexity.

Q3:

Which of the following is incorrect with respect to creating simpler models?

Simpler models will always have fewer test errors than a complex model.

**✓ Correct**

**Feedback:**

Complex models, assuming that you have enough training data available, can do a quite accurate job of prediction.

Q4:

How would you quantify the simplicity of a model?

By the number of features used in the model

**✓ Correct**

**Feedback:**

If you use more features in your model, it would become more complex and might even overfit with the given data. An overfitted model is not simple enough for prediction purposes.

By the number of nodes and depth of trees in case of a tree model

**✓ Correct**

**Feedback:**

The number of nodes and tree depth determine the complexity of a decision tree. If a decision tree has a higher number of features, it will have more nodes and, hence, will be more complicated.

Q5



