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1. A data professional uses tree-based learning for an operations project. Currently, they are interested in the nodes at which the trees split. What type of nodes do they examine? 1 / 1 point

- ○ Branch
- ◉ Decision
- ○ Leaf
- ○ Root

Correct

2. What are some benefits of decision trees? Select all that apply. 1 / 1 point

- ☑ Decision trees enable data professionals to make predictions about future events based on currently available information.

Correct

- ☐ When working with decision trees, overfitting is unlikely.
- ☑ Decision trees require no assumptions regarding the distribution of underlying data.

Correct

- ☑ When preparing data to train a decision tree, very little preprocessing is required.

Correct

3. In a decision tree, what type(s) of nodes can decision nodes point to? Select all that apply. 1 / 1 point

- ☐ Root node
- ☑ Decision node

Correct

- ☐ Split
- ☑ Leaf node

Correct

4. In a decision tree model, which hyperparameter sets the threshold below which nodes become leaves? 1 / 1 point

- ○ Min child weight
- ○ Min samples leaf
- ◉ Min samples split
- ○ Min samples tree

Correct

5. What process uses different "folds" (portions) of the data to train and evaluate a model across several iterations? 1 / 1 point

- ○ Model validation
- ◉ Cross validation
- ○ Grid search
- ○ Proportional verification

Correct

6. Which of the following statements correctly describe ensemble learning? Select all that apply. 1 / 1 point

- ☐ If a base learner's prediction is equally effective as a random guess, it is a strong learner.
- ☑ Ensemble learning involves building multiple models.

Correct

- ☑ It's possible to use the same methodology for each contributing model, as long as there are numerous base learners.

Correct

- ☑ It's possible to use very different methodologies for each contributing model.

Correct

7. Fill in the blank: Each base learner in a random forest model has different combinations of features available to it, which helps prevent correlated errors among _____ in the ensemble. 1 / 1 point

- ○ splits
- ○ nodes
- ○ roots
- ◉ learners

Correct

8. What are some benefits of boosting? Select all that apply. 1 / 1 point

- ☑ Boosting can improve model accuracy.

Correct

- ☑ Because no single tree weighs too heavily in the ensemble, boosting reduces the problem of high variance.

Correct

- ☐ The models used in boosting can be trained in parallel across many different servers.
- ☑ Boosting reduces bias

Correct

9. Which of the following statements correctly describe gradient boosting? Select all that apply. 0.5 / 1 point

- [ ] Gradient boosting machines build models in parallel.
- [x] Gradient boosting machines do not require the data to be scaled.

Correct

- [x] Gradient boosting machines tell you the coefficients for each feature.

This should not be selected
Review the video about gradient boosting machines.

- [ ] Gradient boosting machines work well with missing data.