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1. A data analytics team uses tree-based learning for a research and development project. Currently, they are interested in the parts of the decision tree that represent an item's target value. What are they examining? **1 / 1 point**

- (•) Leaves
- ( ) Roots
- ( ) Splits
- ( ) Branches

Correct

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

- [x] Decision trees require no assumptions regarding the distribution of underlying data.

Correct

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

Correct

- [x] 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.

3. What is the only section of a decision tree that contains no predecessors? **1 / 1 point**

- ( ) Leaf node
- ( ) Decision node
- ( ) Split based on what will provide the most predictive power.
- (•) Root node

Correct

4. In a decision tree ensemble model, which hyperparameter controls how many decision trees the model will build for its ensemble? **1 / 1 point**

- (•) n_estimators
- ( ) max_depth
- ( ) n_trees
- ( ) max_features

Correct

5. What **tool** is used to confirm that a model achieves its intended purpose by systematically checking combinations of hyperparameters to identify which set produces the best results, based on the selected metric? **1 / 1 point**

- (•) `GridSearchCV`
- ( ) Cross validation
- ( ) Model validation
- ( ) Hyperparameter verification

Correct

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

- [x] It's possible to use very different methodologies for each contributing model.

Correct

- [x] Ensemble learning involves building multiple models.

Correct

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

Correct

- [ ] If a base learner's prediction is equally effective as a random guess, it is a strong learner.

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**

- [x] Boosting does not require the data to be normalized.

Correct

- [x] Boosting is robust to outliers.

Correct

- [ ] The models used in boosting can be trained in parallel across many different servers.
- [x] Boosting functions well even with multicollinearity among the features.

Correct

9. Which of the following statements correctly describe gradient boosting? Select all that apply. **0.75 / 1 point**

- [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.

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

Correct

- [ ] Gradient boosting machines build models in parallel.