

DM-Quiz-2020-Q7

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- ✓ 1. Decision Tree Decision Boundaries
- ☐ A are a step-wise constant function
 - ☐ B I do not know
 - ☐ C continuous function
 - ☒ D are axis-parallel rectangles
- ✗ 2. Root Node has
- ☐ A no incoming edges and zero or more outgoing edges
 - ☒ B one incoming edge and two or more outgoing edges
 - ☐ C one incoming edge and no outgoing edges
 - ☐ D I do not know
- ✓ 3. Pruning the tree means
- ☒ A Simplify the tree
 - ☐ B Split the tree's nodes
 - ☐ C Merge the tree's nodes
 - ☐ D I do not know
- ✗ 4. Gini index equals to
- ☐ A $1 - \sum (p_i^2)$
 - ☐ B $1 + \sum (p_i^2)$
 - ☒ C $\sum (p_i * \log(p_i))$
 - ☐ D $-\sum (p_i * \log(p_i))$
 - ☐ E I do not know



5. Entropy starts with 0

- ☐ A True
- ☒ B False
- ☐ C I do not know



6. Overall impurity measure can be obtained by

- ☐ A a weighted average of individual rectangles
- ☒ B majority voting
- ☐ C I do not know



7. At each stage, we choose the split with

- ☒ A the lowest Gini index
- ☐ B the lowest Chi-square value
- ☐ C the highest entropy
- ☐ D I do not know



8. We can perform the Decision Trees in r using

- ☐ A rpart()
- ☒ B decisiontree()
- ☐ C destree()
- ☐ D reg.tree()
- ☐ E I do not know



9. minsplit in R means

- ☒ A the minimum number of observations that must exist in a node in order for a split to be attempted
- ☐ B the minimum number of observations in any terminal node
- ☐ C the minimum number of splits
- ☐ D I do not know

✗ 10. Bagging is a technique used to reduce

- ☐ A the variance of our predictions
- ☒ B the bias of our predictions
- ☐ C both
- ☐ D I do not know

✓ 11. Bootstrap aggregation allows sampling

- ☒ A with replacement
- ☐ B without replacement
- ☐ C I do not know
- ☐ D both

✗ 12. How can Ensemble methods be constructed?

- ☐ A By manipulating the training set
- ☐ B By manipulating the input features
- ☒ C By manipulating the class labels
- ☐ D By manipulating the learning algorithm
- ☐ E All of them
- ☐ F None
- ☐ G I do not know

✗ 13. Repeatedly sampling observations are taken

- ☒ A from general population
- ☐ B original sample data set
- ☐ C I do not know
- ☐ D None

✗ 14. Random Forest differs from bagging

- ☐ A by a random sample of m predictors
- ☐ B by bootstrapped training samples
- ☒ C by adaptive sampling
- ☐ D I do not know

- ✗ 15. Boosting differs from bagging
- ☒ A by a random sample of m predictors
 - ☐ B by bootstrapped training samples
 - ☐ C by adaptive sampling
 - ☐ D I do not know

- ✓ 16. Averaging many highly correlated quantities
- ☐ A lead to as large of a reduction in variance
 - ☒ B does not lead to as large of a reduction in variance
 - ☐ C lead to as large of a reduction in bias
 - ☐ D I do not know

- ✗ 17. We can perform a Random forest in R using the function
- ☐ A randomForest()
 - ☐ B rf()
 - ☐ C randomF()
 - ☐ D boot()
 - ☒ E I do not know

- ✗ 18. Random Forest works
- ☒ A for classification
 - ☐ B for regression
 - ☐ C both
 - ☐ D I do not know