

2. **[20 points] Short answers please**

- (a) Give one method for extending Logistic Regression to be used in multiple class problems.
- (b) Give one advantage of decision trees over Perceptrons.
- (c) Give one advantage of Perceptrons over decision trees.
- (d) Give one major difference between aggregating the input and aggregating the output for multi-instance learning problems.

3. **[20 points] Short answers please**

- (a) Give one advantage to using the 1R classifier over the decision tree classifier.
- (b) Give one advantage to using ball trees over kD-trees for nearest neighbor learning.
- (c) How does the Nearest Neighbor classifier deal with missing values?
- (d) The K-nearest Neighbor rule assigns a new instance the most common classification among its K closest instances from the training set. Give one advantage and one disadvantage to using the K-nearest neighbor rule over the (single) Nearest Neighbor rule for classification.