

Name: .....

Student ID#: .....

**Statistical Pattern Recognition (CE-725)**  
**Department of Computer Engineering**  
**Quiz #4 (Classification – Introduction) - Spring 2012**

**1. (20 points)** For each of the following statements, write “True” if it is mostly true, or “False” if it is mostly false. Then, explain why or how the statement is true or false:

- a) Cross-validation can reveal overfitting.
- b) Overfitting is a danger when learning a classifier, but not when doing unsupervised learning.

**2. (30 points)** You are reviewer for the international Conference on Algorithms and you read papers with the following experimental setups. Would you accept or reject each paper? Provide a one sentence justification.

- a) “My algorithm is better than yours. Look at the test error rates! (Footnote: reported results for parameter  $L=1.7894898783$ .)”
- b) “My algorithm is better than yours. Look at the test error rates! (Footnote: reported results for best value of  $L$ .)”
- c) “ My algorithm is better than yours. Look at the test error rates! (Footnote: reported results for best value of  $L$ , Chosen with 10-fold cross validation.)”