

**MQM Comprehensive Examination
Measurement Major**

Day 1

Answer both of the following two questions. Begin each response on a new page, and clearly number the question to which you are responding.

1. Define the concepts of (a) error score and (b) true score within the framework of classical test theory. Give examples of their substantive interpretation within empirical contexts of your choice. How does the true score relate to the score on an unobserved dimension of actual interest, in case of (a) systematic and random error and (b) random error only?
2. Define the notion of local independence. How is it related to the concept of unidimensionality of a given set of items? Discuss how the local independence notion is used in the frameworks of factor analysis and item response theory. Use specific models in your discussion to support your discussion.

**MQM Comprehensive Examination
Measurement Major**

Day 2

Answer two of the following four questions. Begin each response on a new page, and clearly number the question to which you are responding.

3. Define the concept of construct validity. Discuss ways of its possible empirical assessment. Be specific in your account and provide empirical examples.

4. Assessment Blueprints
 - A. What is an assessment blueprint and what are its parts?
 - B. What is the purpose of each part?
 - C. How would you indicate on the blueprint the emphasis that should be placed on each learning target to be assessed?

5. Is it possible that the lengthening of an already existing scale (multiple-component/item measuring instrument) can decrease reliability and/or validity? Justify your answer and give examples to support your claims.

6. A psychometrician for a testing company performed a DIF analysis for a test and found several items with significant uniform DIF and several others with non-uniform DIF. Explain what these two terms mean so that policy makers can understand what they mean. Explain the steps that you would follow to determine if the items should be removed from the test. What results would you have to obtain to recommend removal of the items from the test?