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## I. INTRODUCTION

This manual provides information concerning two general-content, multi-aspect<sup>1</sup>, critical thinking ability tests, *Cornell Critical Thinking Test, Level X*, and *Cornell Critical Thinking Test, Level Z* (henceforth Level X and Level Z). Level X is aimed at students in grades 4-14, Level Z at advanced and gifted high school students, college students, graduate students, and other adults.

Level X is a 71-item, Level Z a 52-item, multiple-choice test. Each is intended to be taken within a 50-minute period (except for the use of Level X in the elementary school), but either can be taken in two or more parts to accommodate scheduling problems, provided that appropriate security measures are employed. Each item on each test has three choices and one keyed answer.

The tests are part of our continuing research work in the area of critical thinking, which is concerned not only with critical thinking testing, but also with conceptualizing critical thinking and with critical thinking instruction and curriculum development. The tests were designed for evaluation and have been used in curriculum and teaching experiments for appraisal of the critical thinking ability of a group and as criteria for program admission and employment. The tests have also been used as teaching materials.

This manual includes discussion of our conception of critical thinking, its relation to the tests, administration and scoring of the tests, user norms, consistency (reliability), item analysis, validity, and explanations of the keying of answers.

<sup>1</sup> A “general-content” critical thinking test uses content from a number of subject matter areas and/or everyday life experiences, content with which most people at the target level of sophistication can be expected to be familiar. A “subject-specific” critical thinking test uses content from one subject-matter area. A “multi-aspect” critical thinking test assesses more than one aspect of critical thinking, usually the ones that the test maker feels are the most basic and important for the target level of sophistication. An “aspect-specific” critical thinking test assesses only one aspect of critical thinking, such as the ability to judge the credibility of sources.

## II. THE CONCEPTUAL BASIS OF THE CORNELL CRITICAL THINKING TESTS

In this section, we shall discuss our conception of critical thinking, the coverage of this conception by Level X and Level Z, the interdependence of aspects of critical thinking (making descriptions of coverage inevitably somewhat vague), and the differences between Level X and Level Z.

### CRITICAL THINKING CONCEPTUALIZED: THE CORNELL/ILLINOIS MODEL

The two critical thinking tests described in this manual are based upon a conception of critical thinking described in various stages of refinement and emphasis by Robert H. Ennis (1962; 1964; 1969, Part IV; 1980; 1981a; 1981b; 1982, 1987, 1991, 1996, 2001a, and 2001b). We shall call this conception “the Cornell/Illinois model,” because Ennis developed it when at Cornell University and The University of Illinois, and received much help and support in this development from his colleagues at these two institutions. This conception springs from the basic idea advanced by B. Othanel Smith (1953, p. 130): “Now if we set about to find out what ... [a] statement means and to determine whether to accept or reject it, we would be engaged in thinking which, for lack of a better term, we shall call critical thinking.”

We have made adjustments to Smith’s ideas, because the term “critical thinking” as defined by Smith is not a term of approval, and because the act of formulating the statement (and other rational creative activity) seems to be left out of Smith’s conception. The working definition of “critical thinking” under which we are operating is this:

“Critical thinking is reasonable and reflective thinking focused on deciding what to believe or do.” This definition is an attempt to capture the main thrust of the term ‘critical thinking’ as it is used these days.

There are many ways to dissect and subcategorize critical thinking ability. Our approach sees three types of inferences to beliefs (induction, deduction, and value judging); and four types of bases for