

WHAT is the TCPE (Toledo Chemistry Placement Exam)?

The TCPE is the ACS Toledo Test. This American Chemical Society (ACS) Toledo Test is a placement exam designed to evaluate how well the student is prepared for Freshman Chemistry class as taught here at NJIT.

The purpose of this placement exam is to make sure that the student's background in chemistry and math is adequate for the student to succeed in either Chem 121 or Chemistry 125 as taught here at NJIT.

The TCPE evaluates the students general math and algebra skills as well as the student's overall knowledge of chemistry. The TCPE has 60 multiple choice questions which the student answers in 55-60 minutes. The student is permitted to use a calculator.

What is on the TCPE?

There are 20 math questions and 40 chemistry questions. The math questions cover math skills up to and including college level algebra. The chemistry questions cover material including these major topics: measurements, elements, ions, compounds, the periodic table, writing chemical formulas and equations, chemical reactions, states of matter, pressure/volume/temperature relationships, quantum theory, ionic and covalent bonding, solutions, acids and bases, and thermodynamics.

The TCPE consists of 60 questions:

- 20 basic algebra questions.
- 20 general chemistry questions, such as the following (generalized so as not to give away exact questions):
 - How does an element become an ion?
 - Chemical vs. physical changes.
 - The form of an equilibrium constant expression.
 - Activity of elements vs. position on the periodic table.
 - Isotopes.
- 20 specific chemistry questions, such as the following:
 - Names and formulas of simple compounds.
 - Balancing Equations.
 - Simple stoichiometry.
 - Mass %.

- Density.

The test is in the multiple-choice format. However, with such tests, the student should be able to work out the problem just as if there were no answers given. Then, match up the answer the student obtained with one of the choices. It is not in the students best interest to start out by looking at the choices and guessing which one looks best.

If the student wishes to study and prepare for the TCPE, we advise the student to just use their high-school chemistry book (or any such text) -- the test is at a high school level.