



GUGC ONLINE APTITUDE TEST

Testing Requirements and Guidelines



Guidelines for GUGC Online Aptitude Test

The admissions at the Ghent University Global Campus (GUGC) request applicants to take an aptitude test. The test reflects the minimum level of knowledge of first-year students' needs to cope with the educational programs at GUGC. In addition, the aptitude test gives the admissions office an idea of the academic level of applicants.

The aptitude test composes of 20 questions in Mathematics and Chemistry. The time limit to take the test is **two hours**. To check the sample test, you can download it on admissions.ghent.ac.kr.

As there are no limited numbers of test-taking, applicants can take the test more than multiple times. Each trial costs **\$65** and allows you to submit the best score with the online application. The accumulated test-taking will not affect admissions.

The test is conducted online, and all test procedures will be recorded to prevent cheating.
For GUGC admissions, the test score must be higher or equal to 14/20 on the online aptitude test.

Here is the list of preparation for the GUGC Online Aptitude Test

- Passport
- Computer with an operational web camera
- The Internet must be connected appropriately
- A passport must be prepared to verify your identification
- Cost: **\$65** for each test
- A credit card (Master, Visa, Amex) for the registration - test fee

✂ Important Notes:

- 20 questions: 10 mathematics questions + 10 chemistry questions
- Exam Hour: 120 min
- Permitted to use books, note-taking materials, and a calculator during the exam
- Using a cell phone or other electric devices is strictly prohibited
- The final test result is ready to download after the exam. (*not able to check right/wrong answers)
- The test scores are valid for two years

If you have any queries, please contact GUGC Admissions Office.

+82-32-626-4114 / admission@ghent.ac.kr

Prep: the list of topics – Mathematics

A. Calculus

- Basic properties (such as increasing/decreasing, positive/negative, zeros) and graphs of polynomial functions, rational functions, irrational (root) functions
- Absolute value function
- One-to-one functions and their inverses
- Basic properties (such as increasing/decreasing, positive/negative, zeros) and graphs of exponential and logarithmic functions
- Limits and continuity
- Vertical, horizontal, and oblique asymptotes
- Definition of a derivative, intuitive definition of derivative derivatives of basic functions, chain rule
- Applications of derivatives: extreme values, concave upward/downward, l'Hospital rule
- Equation of the tangent line to the curve of a graph at a certain point
- Definition of an antiderivative, antiderivatives of basic functions
- The connection between derivatives and antiderivatives
- Definite integrals
- Techniques of integration: substitution rule, integration by parts, partial fractions

B. Algebra

- Division of polynomials
- Binomial of Newton
- Solving of equations and inequalities involving polynomial, rational, irrational, exponential, logarithmic functions
- Solving systems of equations

C. Trigonometry

- Degrees and radians
- Trigonometric functions sine, cosine, tangent, cotangent, and their graphs
- Fundamental identity, addition and subtraction formulas, double-angle formulas, half-angle formulas, product-to-sum formulas, sum-to-product formulas
- Proving trigonometric identities
- Trigonometric equations
- Trigonometry of right triangles

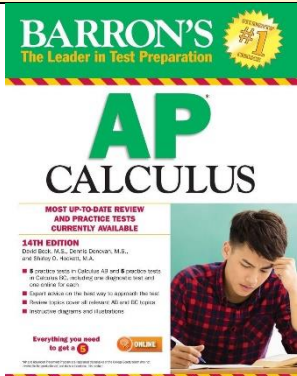
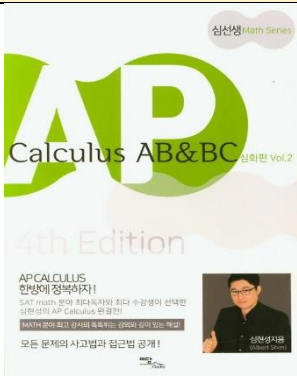
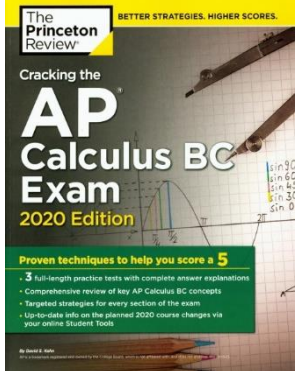
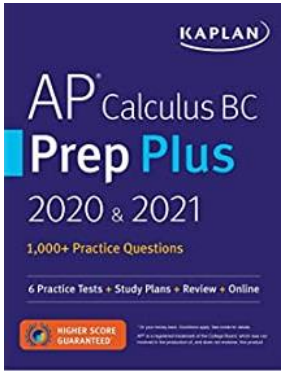
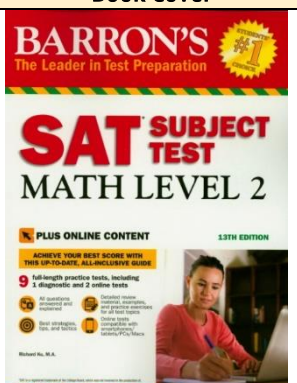
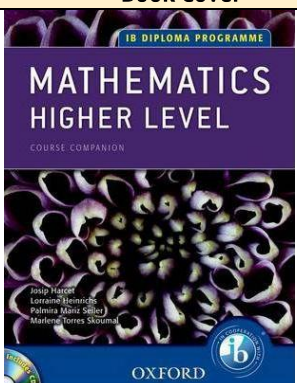
D. Geometry

- Points, coordinates, and equations
- Equation of a circle
- Equation of a line

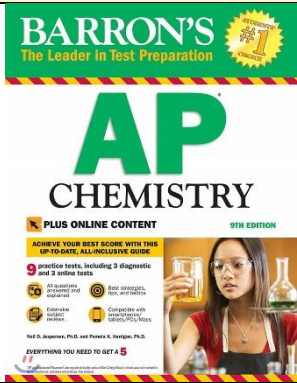
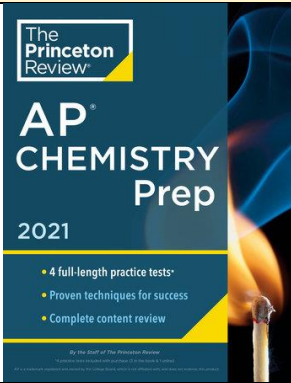
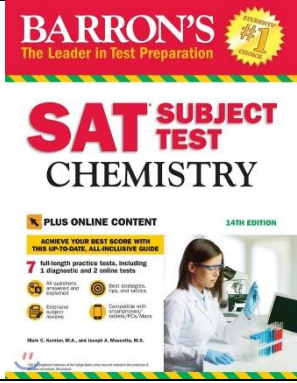
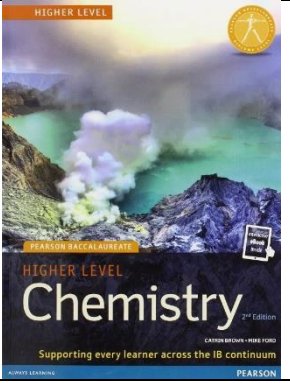
Prep: the list of topics – Chemistry

- Elements, mixtures
- Lavoisier Law
- Symbolic representation of atoms and molecules, atomic mass, unit of atomic mass, electrons, and nucleons (protons and neutrons)
- Oxidation number, ion, and ion charge
- Reactions between bases and acids
- Reaction equations: ion-exchange reactions, precipitation reactions, combustion reactions, synthesis reactions
- pH calculations, titration, and titration reactions
- Bohr atom model, Bohr-Sommerfeld model, electron spin, Pauli rule
- Energy levels: s, p, d, f, and orbital (basic knowledge)
- Electronegativity, electron pairs
- Covalent and ionic bonds, metal bonds
- Lewis notation from binary compounds and polyatomic compounds
- Polar and apolar compounds
- Intermolecular forces
- Nomenclature of inorganic and organic compounds and ions (basic level)
- Stoichiometry: molar mass, molar volume, Avogadro constant, ideal gas law, mass density
- Concentration and concentration units, calculation of masses, volumes, concentrations, excess and limiting reagentia
- Reaction rate: factors influencing reaction rate, explanation via collision theory model
- Chemical equilibrium: equilibrium constant, factors influencing chemical equilibrium, calculations with equilibrium data
- Redox reactions: completion of redox reactions and interpretation of oxidators and redactors Sigma and pi bonds
- Solubility of ionic compounds

List of Recommended Study Guides Books - Mathematics

AP Calculus			
Book Cover	Title	Book Cover	Title
	Barron's AP Calculus Level of Difficulty: Advanced		AP Calculus AB & BC Level of Difficulty: Basic
	Princeton Review AP Calculus BC Level of Difficulty: Basic		KAPLAN AP Calculus BC Level of Difficulty: Intermediate
SAT		IB	
Book Cover	Title	Book Cover	Title
	BARRON's SAT MATH Level 2 Subject Test Level of Difficulty: Basic		IB Math HL Textbook – OXFORD Level of Difficulty: Basic

List of Recommended Study Guides Books - Chemistry

AP Chemistry			
Book Cover	Title	Book Cover	Title
	Barron's AP Chemistry Level of Difficulty: Advanced		Princeton Review AP Chemistry Level of Difficulty: Basic
SAT		IB	
Book Cover	Title	Book Cover	Title
	Barron's SAT Subject Test Chemistry Level of Difficulty: Advanced		IB Chemistry HL – Pearson Level of Difficulty: Basic