



THE DEPARTMENT OF EDUCATION OF THE CITY OF NEW YORK
TOWNSEND HARRIS HIGH SCHOOL AT QUEENS COLLEGE
A BLUE RIBBON SCHOOL OF EXCELLENCE

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The Physical Setting/Physics Core Curriculum

1. **Mechanics**
 - A. Kinematics (study of motion without regard to force)
 - B. Statics (study of forces acting on a body at rest)
 - C. Dynamics (study of forces changing motion)
 - D. Momentum
2. **Energy**
 - A. Work
 - B. Power
 - C. Energy
3. **Electricity & Magnetism**
 - A. Static Electricity
 - B. Electric Current
 - C. Magnetism
 - D. Electromagnetic Induction
4. **Wave Phenomena**
 - A. Wave Characteristics
 - B. Periodic Wave Phenomena
 - C. Light
5. **Modern Physics**
 - A. Dual Nature of Light
 - B. Quantum Theory
 - C. Models of the Atom
6. **Motion in a Plane**
 - A. Two-Dimensional Motion & Trajectories
 - B. Circular Motion
 - C. Kepler's Laws
 - D. Satellite Motion
7. **Internal Energy**
 - A. Temperature
 - B. Internal Energy & Heat
 - C. Kinetic Theory of Gases
 - D. Laws of Thermodynamics
8. **Electromagnetic Applications**
 - A. Torque on a Current Carrying Loop
 - B. Electron Beams
 - C. Induced Voltage
 - D. The LASER
9. **Geometric Optics**
 - A. Images
 - B. Images from Reflection (mirrors)
 - C. Images from Refraction (lenses)
10. **Solid State Physics**
 - A. Conduction in Solids
 - B. Semiconductor Devices
11. **Nuclear Energy**
 - A. The Nucleus
 - B. Nuclear Reactions

The Physics Regents consists of three parts that must be completed in three hours.

***Part I** - Core Units 65 points 55 multiple choice questions on the 5 core subject areas: Mechanics, Energy, Electricity and Magnetism, Wave Phenomena, Modern Physics.*

***Part II** - Extended Units 20 points Multiple choice and Open ended question from any of these: Motion In A Plane (projectile and circular), Internal Energy, Electromagnetic Applications, Geometric Optics, Solid State, Nuclear Energy.*

***Part III** - Core Units 15 points This is known as the free response section of the exam. These are similar to the complete calculation problems. There are typically three questions with several parts to them.*