

*University Junior Matriculation.*

PART I.

ENGLISH GRAMMAR AND RHETORIC.

The main facts in the development of the language. Etymology and Syntax, including the inflection, classification, and elementary analysis of words, and the logical structure of the sentence. Rhetorical structure of the sentence and paragraph. As far as possible the questions shall be based on passages from authors not prescribed.

ARITHMETIC AND MENSURATION.

ARITHMETIC:—Proofs of Elementary Rules; Fractions (Theory and Proofs); Commercial Arithmetic.

MENSURATION:—Rectilinear figures, right parallelepiped, prisms, and pyramids; the circle, sphere, cylinder, and cone.

HISTORY OF GREAT BRITAIN AND CANADA.

Great Britain and Canada from 1763 to 1871, with the outline of the prescribed periods of British History.

The Geography relating to the History prescribed.

PHYSICS.

An experimental course defined as follows:—

Metric system of weights and measures. Use of the balance. Phenomena of gravitation. Matter attracts matter. Laws of attraction. Cavendish experiment. Attraction independent of condition. Illustration of weight of gases, liquids, and solids. Specific gravity.

Meaning of the term "a form of matter." All matter may be subjected to transmutation; "Chemistry"; application of measurement by weight (mass) to such transmutation leads to the theory of elements. Matter indestructible.

Meaning of "Force." Various manifestations of force, with illustrations from the phenomena of electricity, magnetism, and heat. Force measured in gravitation units; consequent double meaning of the terms expressing units of weight as mass, and units of weight as force.

Meaning of "Work." Measurement of work in gravitation units. Meaning of "Energy."

Effects of force continuously applied to matter. Laws of matter in motion. Velocity. Acceleration. Statement of Newton's Laws of Motion. Definition of "Mass." Meaning, value, and application of "g." Mass a measure of matter.

Conservation of Energy. Energy, like matter, indestructible and transmutable.

Study of the three states of matter. Properties and laws of gases, liquids, and solids. Laws of diffusion.

Elementary laws of heat. Mechanical equivalent. Latent heat. Specific heat, caloric.