

I. MECHANICAL AND NATURAL PHILOSOPHY.

The following subjects are to be treated Experimentally, and also Mathematically so far as the subjects of the FIRST B. A. EXAMINATION are applicable to them.

STATICS.

Elementary Statics, including the Resolution of Forces, the Mechanical Powers, the Centre of Gravity, and simple cases of Equilibrium of bodies or systems of bodies under the action of Gravity.

DYNAMICS.

Elementary Dynamics, including the Laws of Motion, and Proportions required for determining the Rectilinear Motion of a body whether free or along inclined planes.

Direct Impact of Spheres.

Motion of Projectiles, and the simple cases of motion round Centres of Force.

Elementary Propositions relating to Mechanical Work.

HYDROSTATICS, HYDRAULICS, AND PNEUMATICS.

Elementary Propositions respecting the nature, transmission and intensity of Third Pressure; and the Conditions of Equilibrium of Floating Bodies.

Nature and simple properties of Elastic Fluids; and the Pressures produced by them.

Specific Gravity, and the modes of determining it.

The Common Pump and Forcing Pump.

The Barometer.

The Air Pump.

The Steam Engine.

OPTICS (Geometrical).

Laws of Reflexion and Refraction; Reflexion at Plane Mirrors; Reflexion at Spherical Mirrors, and Refraction through Lenses, the incident pencils being direct.

Separation of Solar Light into rays of different colours; Description of the Solar Spectrum;

Description of the Eye; Simple Optical Instruments; Camera Obscura; Reflecting and Refracting Telescopes.

ACOUSTICS.

Nature of Sounds; Mode of Propagation; Musical Tones, and simple propositions respecting them.

OPTICS (Physical).

Fundamental Hypotheses of the Undulatory Theory respecting the Origin and Propagation of Light.

General explanation of Interferences; Formation of Newton's Rings, with descriptions of simple experiments which elucidate the effects of Interference.

Polarized Light, with the description of simple experimental modes of producing it.

ASTRONOMY.¹

Systems of Great Circles, to which the positions of the Heavenly Bodies are referred.

Principal phenomena depending on the Motion of the Earth round the Sun, and its Rotatory Motion round its own axis.

General description of the Solar System.

General Explanation of Lunar and Solar Eclipses.

II.

THE FRENCH OR THE GERMAN LANGUAGE.

Translation from English into French or German.

III.

CLASSICS.

THE GREEK AND LATIN LANGUAGES.

One Greek subject and one Latin Prose subject, to be selected two years previously by the Senate from the works of the following authors:—

Homer.....Six Books.

Æschylus.....One Play.

Sophocles.....One Play.

Euripides.....One Play.

Herodotus.....One Book.

Thucydides.....One Book.

Plato.....Apology of Socrates, and Crito.

Xenophon.....Two Books, from any of his larger works.

Demosthenes.....One of the longer or three of the shorter public Orations; or two of the private Orations.

Cicero.....One of the Orations; or one Book from any of the Philosophical or Rhetorical works.

Livy.....One Book.

Tacitus.....One Book of either the Annals or the Histories.

¹ The Mathematical treatment of this subject will require the application of the Elements of Spherical Trigonometry: viz.: Orbits of the Sphere—Measures of the sides and angles of Spherical Triangles—Supplemental Triangle.

² The Classical subjects for 1878 are: *Demosthenes*, Orations against Lucritus and Dionysodorus. *Tacitus*, Annals, Book VI.