

Geography.—(1.) General questions in industrial and physical geography, including the elements of physiography. (2.) The geography of the United Kingdom. (3.) The following sections, of which each candidate may select one only—(a) The colonies and dependencies; (b) Europe; (c) Asia, Africa, and America.

History.—(1.) General questions on English history. (2.) More detailed questions on the following periods of English history, of which each candidate may select one only: (a) The earliest historic times until 1485; (b) 1485–1688; (c) 1689 to the date of the examination.

Drawing.—(1.) Freehand—Outlines of generally symmetrical but not rigidly balanced designs for ornament. (2.) Geometry—Plane geometry up to and including the construction of polygons from given data, and problems on the straight line and circle. The representation of simple solids by plan, elevation, and section.

Elementary Mathematics.—Algebra up to and including easy quadratic equations. Geometry, covering the subjects of the first book of Euclid, with easy riders.

II. Optional Subjects.

Group I.—English Literature.—A general paper testing knowledge of classical and current literature, followed by questions on certain selected books, of which each candidate may select the questions relating to one, and only one, subject. The selected subjects for June, 1898, are—(1) Shakespeare, “Julius Cæsar”; (2) Shakespeare, “Merchant of Venice”; (3) Shakespeare, “Tempest”; (4) Milton, “Samson Agonistes”; (5) Scott, “Lady of the Lake”; (6) Chaucer, “Prologue.” In the general paper full marks will be given for correct answers to about one-half of the questions.

French, German, Italian, Spanish.—(1.) Translation of passages by classical authors from and into the language. (2.) Knowledge of the accidence and of the fundamental rules of syntax. (3.) Dictation. A simple extract to be read by the examiner and taken down by the candidates.

Latin.—Translations from the easier classical authors; questions on accidence, parsing, and syntax; short English sentences and short piece of connected prose to be turned into Latin.

Group II.—Pure Mathematics.—Algebra, up to and including the progressions, with the use of logarithms. Geometry, covering the subjects of Euclid, Books II., III., IV., and VI., with riders. Trigonometry, up to and including the solution of plane triangles.

*Applied Mathematics, including Dynamics and Statics.**—The elements of dynamics and statics, including the fundamental laws and principles of dynamics and their experimental verification; uniformly accelerated motion; impulses, including simple problems on collision, composition, and resolution of forces, the mechanical powers as employed in practical work, and the theory of the equilibrium of a system of forces in one plane.

*Experimental Mechanics, including Hydrostatics.**—In this subject some knowledge will be expected of practical methods of measuring lines, areas, and volumes, including the use of the vernier, callipers, squared paper, micrometer-screws, &c. Candidates will also be expected to be familiar with the actual construction of simple workshop appliances, such as pulley-tackle, screw-jacks, crabs, &c., and of the method of determining the actual relation between the “power” and the “weight” with such apparatus, and the determination of the loss of power through friction; simple methods of verifying in the mechanical laboratory the elementary laws and principles of mechanics and the laws of friction; the determination of specific gravities; the verification of Boyle’s law and other elementary experiments in hydrostatics.

Groups III. and IV.—Elementary Experimental Science, including Practical Work.—Measurements of lengths, areas, and volumes; the chemical balance; weighings; comparison of English and French systems of weights and measures; finding the capacities of different vessels; calibration; determination of specific gravities; principle and construction of thermometer and barometer; changes of volume of gases with alterations of temperature and pressure; distillation, solution, evaporation; elementary calorimetry; chemical and physical study of the atmosphere; behaviour of different bodies on heating in air; combustion, the chemistry of a burning candle; indestructibility of matter; elements, compounds and mixtures; the chemical and physical properties of water; determination of composition by weight and volume. Experimental study of the following bodies: hydrogen, oxygen, nitrogen, carbon, carbonic acid, chalk, quicklime, hydrochloric acid, nitric acid, and sulphuric acid. Construction of apparatus for simple experiments in connection with the above, including the preparation of gases. Determination of volumes of gas given off on treatment of common metals and carbonates with the above acids.

Experimental Physics (two separate subjects): Heat and Light, including Practical Work; Electricity and Magnetism, including Practical Work.—In addition to a general acquaintance with the fundamental laws and phenomena of experimental physics, candidates will be expected to know something of the construction of the more common physical instruments, and to show that they are practically acquainted with laboratory methods of carrying out the more simple physical measurements, such as the measurement of temperature, quantity of heat, co-efficients of expansion of solids, liquids, and gases, thermal conductivity (relative), the refractive index and angle of a prism, the focal length of convex and concave lenses, the curvature of lenses, the wave length of homogeneous light, current, resistance, electromotive force, &c.; and a practical examination extending over three hours will be given, to which only those candidates will be admitted who have satisfied the examiners in their paper-work. [No candidate can take these subjects who does not also take elementary experimental science.]

Chemistry, including Practical Work.—The conservation of matter; the laws of chemical combination, elements, and compounds; formulæ and equations; determination of the exact proportion

* Alternative subjects.