

SUPPLEMENT
TO THE
CEYLON GOVERNMENT GAZETTE

No. 7,556 — FRIDAY, NOVEMBER 19, 1926.

**REGULATIONS FOR THE CAMBRIDGE JUNIOR AND SENIOR SCHOOL
CERTIFICATE EXAMINATIONS, DECEMBER, 1927.**

AN Examination will be held at Batticaloa, Colombo*, Galle, Jaffna*, Kandy, Manipay, Mount Lavinia†, Negombo, Panadure, Point Pedro, Uduvil‡, and Vaddukkoddai on December 9, 1927, and following days, for the purpose of awarding Junior and Senior School Certificates, under the conditions set forth below, to candidates who are presented for Examination from schools accepted for this purpose.

2. In order to be accepted, a school must be inspected by the Education Department, Ceylon, and the report of such inspection must be satisfactory.

3. Government and Assisted Schools will not be accepted unless they have been registered by the Department as secondary schools or higher grade schools with courses of work leading up to the examination offered. Schools which are not Government or grant-in-aid schools will not be accepted, unless the Department is satisfied that their staff and equipment enable them to prepare classes for the examination offered.

4. Only those candidates will be admitted to the examination who are members of a class which is going through the course of work prescribed for it. If any member of the class has attended another recognized school since January, 1925 (in the case of Juniors since January, 1926), dates of admission to and departure from such schools should also be given. Pupils who were born after December 15, 1914, will not be accepted for the Junior School Examination, nor those born after December 15, 1911, for the Senior School Examination. But candidates who were born not later than December 15, 1912, will be admitted to the Senior School Examination, if they are specially recommended by the Principals of their schools and the recommendations are endorsed by the Inspector.

5. A Junior School Certificate will be awarded to any candidate who (a) shall have attended one or more schools accepted for the purpose of that certificate for at least *two years continuously* up to the time of the examination; and (b) shall have passed the Junior Examination under the conditions which are set forth below.

6. A Senior School Certificate will be awarded to any candidate who (a) shall have attended one or more schools accepted for the purpose of that certificate for at least *three years continuously* up to the time of the examination; and (b) shall have passed the Senior Examination under the conditions which are set forth below.

7. In the case of candidates who have passed the E. S. L. C. Examination from elementary schools, the period of their attendance at such schools will be accepted as satisfying the requirements in paragraph 6 (a) above. They will be eligible for admission to the Senior Certificate Examination when they have continuously attended a school or schools accepted for the purpose of that certificate for two years up to the time of the examination.

8. Students *who already hold a Senior (or Junior) Certificate* and desire to pass in one or more additional subjects may enter at a subsequent Senior (or Junior) Examination for less than the minimum number of subjects necessary for a certificate, provided they continue to attend an accepted school. The names of such students will not appear in the Class Lists, but if, in the Junior Examination they pass in any subject, or, in the Senior Examination, they obtain a Pass with Credit in any subject, (or, having previously passed with Credit in subject 16, in a portion of subject 17) they will receive Supplementary Certificates. § The entrance fee in either case will be Rs. 19 provided that not more than six papers in all are taken. Supplementary Certificates will not be awarded to candidates who have not stated in their forms of entry that they are candidates for Supplementary Certificates only.

9. Applications for the acceptance of a school for the School Certificate Examinations of December, 1927, must be made to the Director of Education not later than December 1, 1926.

10. Forms of entry may be had from the Director of Education in the first week in June. It is requested that Principals of schools will apply only for such number of forms of each kind (C, D, E, or F) as they *actually* require.

The names of candidates must be sent by the Principal of the school on these forms to the Director of Education so as to reach him not later than June 30, 1927. The forms must be accompanied by—

(i.) Bank receipt for the fees credited¶ to the account of the Director of Education in the Chartered Bank of India, &c., Colombo, at the rate of Rs. 26 for each Junior and Rs. 31 for each Senior candidate entered. No separate fee is charged for detailed results.

N.B.—This amount should not, under any circumstances, be remitted to this office; only bank receipts will be accepted.

(ii.) The complete list of pupils in the Junior and Senior Certificate Classes referred to in paragraph 4 above.

(iii.) A certificate of birth or of baptism for every candidate. (In the case of certificates sent to the Education Office in and after 1923 and returned to schools reference may be given to the registered number on such certificates.) Affidavits or certificates from the Register of Past Births will not be accepted *under any circumstances*.

If the name appearing in the Register of Births differs, either by alteration or addition, from the name by which the candidate is known, the parent or guardian should, before obtaining a certificate, apply to the Registrar-General for such alterations in the manner set forth in section 7 of Ordinance No. 23 of 1900.

A certificate of baptism should be a proper extract of the Baptismal Register, *i.e.*, an exact copy of the entry of the register with a certificate at the foot of the copy as to its correctness by the incumbent of the church issuing it. Baptismal certificates will only be accepted if the candidate's baptism was within six months of his date of birth.

(iv.) Special recommendations, if any—*vide* paragraph 4 above.

* At Colombo there will be Centres at Ananda College, Royal College, St. Benedict's College, St. Joseph's College, and Wesley College, and at Jaffna at Central College, Parameshwara College, St. John's College, and St. Patrick's College, mainly for the convenience of boys from those schools. Girls and adult private candidates will be accommodated at other centres.

† For boys only.

‡ For girls only.

§ A Senior candidate passing with Credit in a portion of a subject only will not receive a Supplementary Certificate, but information will be furnished on request for the use of any Public Body.

¶ Remittances to Bank should accompany the form giving particulars of the payment. This form may be had on application to this Office.

It is requested that the Principals of schools will see that the instructions with regard to the filling up of the forms are complied with particularly with regard to the subjects taken by the candidates, as it is possible that incorrectly filled forms may have to be rejected and the candidates concerned excluded from the examination. The candidate's name must be given in full on both sides of the entry form; initials are not sufficient.

Principals should also examine carefully all certificates of birth or baptism, and should not forward any certificate which is not a proper and reliable document.

Note.—All letters and parcels should be addressed: "The Director of Education, Colombo."

11. Candidates are recommended to enter for the examination at the Centre nearest to their schools. Schools presenting pupils for Practical Science Examinations must provide themselves with properly equipped laboratories sufficient for all their candidates, who should not be entered at any other Centre. Private candidates offering Science subjects involving practical work must satisfy themselves beforehand that satisfactory laboratory accommodation is available at the Centre at which they propose to sit for the examination.

A candidate entered for examination at one Centre will, under no circumstances, be allowed to sit at another Centre.

12. Forms of entry will be accepted from July 1 to July 7, inclusive, on the Director's account being credited with an additional fee of Rs. 5 for each candidate so entered.

All entry forms received at the Education Office not accompanied by the Bank receipt and other necessary documents (*vide* paragraph 10) will be rejected.

13. Fees cannot be returned. If notice of withdrawal is received by the Director of Education more than sixteen days before the commencement of the examination, a voucher will be sent entitling the student, or (on application from an approved school) another pupil of the school, if entered on a subsequent occasion as a candidate for any of the Syndicate's examinations, to be credited with the amount of the University fee already paid. The Syndicate do not undertake to grant a voucher if the full sixteen days' notice has not been given. Applications made later will, however, be considered if accompanied by a certificate from a qualified doctor stating that the candidate is physically unfit to take the examination, provided that they reach this office by Wednesday of the examination period. Candidates holding vouchers* must apply for fresh forms of entry and return the vouchers to the Director of Education on or before June 30, together with the Bank receipt and other necessary documents. No voucher may be presented on more than one occasion, nor can a second voucher be issued in respect of the same fee.

14. Candidates from schools which are suffering from any infectious disorder cannot be allowed to present themselves for examination.

15. Candidates should note that if any of the regulations made for the conduct of the examination are disobeyed, the certificate may be refused.

16. Candidates are warned that if they be found resorting to unfair means at the examination, they will be summarily expelled from the Examination Hall, and further will be debarred from entering for any public examination for a period of two years.

SCHOLARSHIPS.

Three free scholarships to the University College will be awarded on the results of the Senior School Certificate Examination, two for boys and one for girls, who pass highest in the examination, provided—

- (i.) The pass qualifies the candidates for exemption from the London Matriculation Examination;
- (ii.) The candidate is under 19 years of age at the date of the examination, and has not sat for the London Intermediate or the Matriculation Examination; and
- (iii.) The candidate's parents are not in receipt of an annual income exceeding Rs. 6,000 from all sources.

These scholarships shall be tenable for two years, but may be extended over a third year if the conduct and progress of the holder have been satisfactory.

N.B.—No candidate shall be allowed to hold a free scholarship in addition to an open scholarship or exhibition at the University College.

PRIZES.

The following prizes will be awarded on the results of the Senior School Certificate Examination:—

- (1) A prize of Rs. 100 offered by Mudaliyar W. Daniel Fernando of Panadure to the *school* candidate under the age of 19 years who does best in *Sinhalese* at the Cambridge Senior Examination.
- (2) A prize of Rs. 50 offered by the Society for the Encouragement of the Study of Pali Literature, Colombo, to the *school* candidate who does best in *Pali*, provided he gains a distinction in the subject.
- (3) A prize of Rs. 60 entitled "The Manning Agricultural Prize" offered by the Committee appointed to deal with "Governor Manning's Reception Fund" in Batticaloa, to the candidate from a school in Batticaloa District who obtains the highest marks in *Botany*.

Education Office,
Colombo, November 3, 1926.

L. MC. D. ROBISON,
Acting Director of Education.

JUNIOR SCHOOL CERTIFICATE EXAMINATION.

No one born before December 15, 1911, can be admitted to the examination for Junior Students under the ordinary conditions. Those born before December 15, 1911, may be admitted to the examination, but they can obtain a pass certificate only, and are not eligible for marks of distinction.

Every candidate for a certificate will be required at one and the same examination to satisfy the Examiners in—

- (1) Writing from Dictation.
- (2) Arithmetic†. The use of algebraical symbols and processes is permitted. Questions will not be set on recurring decimals, on the process of obtaining G. C. M. by alternate division or of extracting cube root, on present worth or true discount. Questions will be set on elementary mensuration; these may involve the use of formulæ for the right-angled triangle, circle, cylinder, cone, sphere, right prism, pyramid. Candidates will be expected to give from memory only the formulæ for the triangle and the circle.

* All private students whether they hold vouchers or not, must, if they intend to enter for the Cambridge Examinations of December, 1927, obtain permission of the Director of Education on or before May 1, 1927 (*vide* page 27).

† Candidates will be expected to know the following tables of weights and measures, namely, avoirdupois, linear measure, square measure, capacity (pints, quarts, gallons); and in the metric system, the metre, the gramme, and the litre, with their multiples and submultiples. Questions may be set involving the franc and the centime, the dollar and the cent.

(3) English Language and Literature (see below), together with at least (a) *three* of the twenty subjects of Groups I.-IV., one of which must be from Groups III. or IV.; or (b) four subjects from Groups I.-V., provided that not more than two subjects are from any one group.

Group I.—(1) Religious Knowledge.
(2) History of England, or History of the British Empire, or Roman History.
(3) Geography.

Group II.—(4) Latin.
(5) Greek.
(6) French.
(7) German.
(8) Spanish.
(9) Dutch.
(10) Sinhalese.
(11) Tamil.

Group III.—(12) Geometry and Algebra.
(13) Plane Trigonometry.
(14) Elementary Mechanics.
Group IV.—(15) Elementary Experimental Science.
(16) Chemistry (Theoretical and Practical).
(17) Physics (Theoretical and Practical).
either (18) Botany
or (19) Natural History of Animals.
(20) Hygiene.
Geography.
Group V.—(21) Bookkeeping.
(22) Drawing.
(23) Music.
(24) Needlework

N.B.—Except in English Literature no student can take two papers included in the same bracket in the Time Table. Candidates should pay special attention to **handwriting** and to the neatness of their work; they are warned that illegible writing and untidy answers involve a loss of marks. Composition will be taken into account.

ENGLISH LANGUAGE AND LITERATURE.

(a) *English Composition*.—Exercises, including the composition of an Essay, will be set with the object of testing the power of the candidates to write clear and grammatical English.

(b) *Shakespeare, The Tempest*.*

(c) *Scott, Lady of the Lake*.*

(d) *Scott, Anne of Geierstein*.

(e) *English Authors*: a paper of questions of a simple character, on *Tennyson, Select Poems** (ed. George and Hadow: Macmillan) and either *Addison, The Coverley Papers from the Spectator* (ed. K. Deighton: Macmillan) or *Defoe, Robinson Crusoe*, Part I.

(f) *English Grammar*, including parsing and the analysis of sentences.

To pass in the subject candidates must satisfy the Examiners in two subdivisions of which (b) or (c) or (d) or (e) must be one. They cannot gain the mark of distinction unless they satisfy the Examiners in three subdivisions. They may not be examined in more than two of the papers (b), (c), (d), (e), or in more than three papers altogether.

Throughout the subject, importance will be attached to clearness and correctness of style.

No candidate may enter for subjects in more than seven of the following subdivisions in addition to Writing, Arithmetic, and English viz. :—(i.) Religious Knowledge; (ii.) History and Geography; (iii.) Latin; (iv.) Greek; (v.) French; (vi.) German; (vii.) Spanish; (viii.) Dutch; (ix.) Sinhalese; (x.) Tamil; (xi.) Mathematics—Geometry and Algebra, Plane Trigonometry, Elementary Mechanics; (xii.) Experimental Science; (xiii.) Chemistry; (xiv.) Physics; (xv.) Botany or Natural History of Animals; (xvi.) Bookkeeping and Hygiene; (xvii.) Drawing; (xviii.) Music; and (xix.) Needlework.

GROUP I.

(1) **RELIGIOUS KNOWLEDGE**: (N.B.—The Revised Version of the Bible will be used.)

Questions will be set on (a) the Gospel of *St. Matthew*, credit being given for a satisfactory knowledge of the original Greek; (b) I. Kings; (c) Old Testament History from the descent of Jacob into Egypt to the election of Saul; (d) the *Acts of the Apostles*, i.-xv.; (e) the Church Catechism and the Offices for Baptism and Confirmation in the Book of Common Prayer. In New Testament subjects special papers in which the Douay version is used will be prepared for those who have been accustomed to the use of that version†.

To pass in this subject, candidates must satisfy the Examiners in (a), and in one of the divisions (b), (c), (d), (e), to each of which the same credit is given. No candidate will be examined in more than one of the divisions (b), (c), (d), (e).

(2) **HISTORY**:

(a) Outlines of the **HISTORY OF ENGLAND**.—The paper will consist of three divisions on the periods (i.) 1066–1603; (ii.) 1485–1714; (iii.) 1714–1900 respectively. Candidates may answer questions from any one or two of these divisions.

(b) Outlines of the **HISTORY OF THE BRITISH EMPIRE**.—The paper will consist of two sections on the periods—(a) A.D. 1600–1763, (b) 1763–1906. Candidates may select questions from either or both of these sections.

(c) Outlines of **ROMAN HISTORY** from B.C. 133 to B.C. 44.

To pass in this subject, students must satisfy the Examiners in either (a), (b), or (c). No student will be examined in more than one of the three divisions (a), (b), (c).

(3) **GEOGRAPHY** (see page 10).

Geography may be taken either in Group I. or Group IV.

GROUP II.

(4) **LATIN**:

Two papers will be set. Paper I. will include (1) questions on grammar and parsing; (2) one or more easy unprepared passages for translation into English, a vocabulary of the less familiar words being given; (3) simple sentences for translation into Latin; (4) an easy continuous passage for translation into Latin.

Paper II. will contain (a) passages for translation from selected books, with questions, and (b) *as alternatives*, to either or both of the portions of set books, unprepared passages for translation into English, with questions.

The selected books for 1927 are *Caesar, de Bello Gallico I.* and *Virgil, Aeneid VIII.* Candidates may take any two, but not more than two, of the following portions of these books:—(i.) *de Bello Gallico I.*, Chapters 1–29; (ii.) *de Bello Gallico I.*, Chapters 30–54; (iii.) *Aeneid VIII.*, 1–368; (iv.) *Aeneid VIII.*, 369–731.

* Candidates may be asked to write out a short passage by heart.

† Candidates wishing to avail themselves of this arrangement must make a statement to that effect in their forms of entry, if they omit to do so, they cannot be allowed to take the special papers.

Candidates must reach a certain standard in the subject as a whole, and must also satisfy the Examiners separately in Paper I. To gain the mark of distinction they must reach a higher standard, both in the subject as a whole and in Paper I.

(5) GREEK :

Two papers will be set. Paper I. will include (1) questions on grammar and parsing ; (2) one or more easy unprepared passages for translation into English, a vocabulary of the less familiar words being given ; (3) simple sentences for translation into Greek.

Paper II. will contain (a) passages for translation from selected books, with questions, and (b) as alternatives, to either or both of the portions of set books, unprepared passages for translation into English, with questions.

The selected books for 1927 are : *Xenophon, Anabasis II.*, and *Euripides, Medea*. Candidates may take any two, but not more than two of the following portions of these books :—(i.) *Anabasis II.*, 1–3 ; (ii.) *Anabasis II.*, 4–6 ; (iii.) *Medea* 1–753 (omitting 96–212, 410–444, 626–657) ; (iv.) *Medea* 658–end (omitting 819–860, 971–996, 1076–1110, 1246–1287).

Candidates must reach a certain standard in the subject as a whole, and must also satisfy the Examiners separately in Paper I. To gain the mark of distinction they must reach a higher standard, both in the subject as a whole and in Paper I.

(6) FRENCH. (7) GERMAN.* (8) SPANISH. (9) DUTCH :

In each language the paper will include (1) questions on grammar ; (2) unprepared passages for translation into English, a vocabulary of the less familiar words being given ; (3) easy English sentences for translation into the language ; (4a) one or more continuous passages for translation into the language ; and (4b) as an alternative, subjects on one of which candidates are to write a short composition in the language.

No candidate may take both (4a) and (4b).

In order to pass in French or German or Spanish or Dutch, candidates must reach a certain standard in the subject as a whole. In order to gain the mark of distinction they must reach a higher standard in the subject as a whole, and must also reach a certain standard in (2) and in (4).

For the examination in Spoken French and Spoken German and Spoken Spanish, see page 10.

(10) SINHALESE :

Two papers will be set. Paper I. will include questions on the set books.

Paper II. will include questions in grammar, unprepared translation from Sinhalese into English and translation into Sinhalese (composition).

The selected books for 1927 are : (1) *Sravakacharita*, *Annakondanna*, *Saritaputta*, *Moggallana*, and *Mahakasyapa Charitas*, and *Budugunadlankaraya*, verses 78 to 180.

Candidates must reach a certain minimum in Paper II. taken as a whole, and a higher minimum in Papers I. and II. taken together. To gain the mark of distinction they must reach a higher standard in the subject as a whole, and must also reach a certain standard in translation and composition.

(11) TAMIL :

Two papers will be set. Paper I. will include questions on the set books.

Paper II. will include questions in grammar, unprepared translation from Tamil into English and translation into Tamil (composition).

The selected books for 1927 are : POETRY ; *Brarata Venba-Udyogaparvam*, stanzas 71 to 220. Published by A. Gopala Iyer, Bradie's road, Mylapore, Madras. (Price One Rupee, 6 Annas.)

PROSE : "*Virumpiya Vithamay*" (As you like it). Published by Longmans Green & Co., Madras. (Price 6 Annas.)

Candidates must reach a certain minimum in Paper II. taken as a whole, and a higher minimum in Papers I. and II. taken together. To gain the mark of distinction they must reach a higher standard in the subject as a whole, and must also reach a certain standard in translation and composition.

GROUP III.**(12) GEOMETRY AND ALGEBRA †**

(a) GEOMETRY (see page 11).

(b) ALGEBRA.—The paper will consist of two parts. Candidates can pass in Algebra by doing sufficiently well in Part I.

PART I.—Questions may be set on elementary algebraic operations ; simple equations ; simple simultaneous equations containing not more than two unknown quantities ; easy problems leading to such equations ; resolution into factors ; easy fractions ; quadratic equations containing only one unknown quantity, problems leading to such equations. Simple questions may be set on fractional and negative indices (formal proofs not being required), and on the elementary theory of logarithms. Calculation by means of logarithms to base 10, with the use of four-figure tables, may be required. Questions may be set on graphs and their applications. (Credit will be given for arithmetical solutions of any questions not necessarily requiring algebraical work.)

PART II.—Questions may be set on the solution of two simultaneous equations, one being linear and one being quadratic ; variation ; the gradient of a graph ; arithmetical progression and finite geometrical progression.

To pass in this subject candidates must satisfy the Examiners in (a) and in (b).

Candidates will be provided in the examination room with squared paper. They should bring graduated rulers.

(13) PLANE TRIGONOMETRY †, including the solution of triangles and the use of logarithms. Addition theorems. Questions will not be set involving angles greater than 360 degrees. Some of the questions will be limited to easy numerical Trigonometry. Candidates should bring graduated rulers and protractors.

(14) ELEMENTARY MECHANICS. †—Questions may be set on the composition and resolution of forces acting in one plane at a point, including their graphical representation ; parallel forces ; moments of forces about a point ; the properties of the centre of gravity ; simple applications to the lever, the common balance, the inclined plane, and the block-and-tackle ; the composition and resolution of velocities and accelerations in one plane ; rectilinear motion with uniform acceleration, including motion under gravity ; mass, momentum, dynamical measure of force. Candidates should bring graduated rulers and protractors. Formal proof of the parallelogram of forces, of the parallelogram of velocities, and of the method of obtaining the resultant of two parallel forces will not be required.

* In writing German in the examination, candidates will not be required to use German characters, but credit will be given for the use of German characters, provided that the writing is well formed and legible.

† For all subjects in Mathematics, except Geometry, candidates will be provided in the examination with four-figure tables of logarithms. Tables of logarithms of numbers will be printed on the back of the question paper in Algebra.

The tables which will be provided for the examination in other subjects are the Cambridge Four-Figure Mathematical Tables containing logarithms of numbers of sines and cosines of tangents and cotangents, sines and cosines, tangents and cotangents. Copies can be obtained from Syndicate Buildings, Cambridge, price three pence, post free.

GROUP IV.

(15) * ELEMENTARY EXPERIMENTAL SCIENCE (see page 13).†

Candidates will be expected to show that they have acquired a practical acquaintance with the elements of physical and chemical measurement, and with the properties of common substances as ascertained by simple experiments. Three papers will be set, one of which (Paper III.) will be a practical examination.

(16) * CHEMISTRY (see page 13).†

(a) THEORETICAL CHEMISTRY.

(b) PRACTICAL CHEMISTRY.

To pass in this subject, candidates must satisfy the Examiners in the two papers taken together, provided that a certain standard is attained in (a) and in (b).

(17) * PHYSICS (see pages 14, and 15).†

(a) HEAT.

(b) SOUND AND LIGHT.

(c) ELECTRICITY AND MAGNETISM.

(d) PRACTICAL PHYSICS.

In this subject the questions will be principally such as will test the candidates' knowledge of it as gained from a course of experimental instruction.

To pass in this subject, candidates must satisfy the Examiners in two of the three divisions (a), (b), (c), and in (d).

(18) BOTANY† (see pages 15 and 16).

(19) NATURAL HISTORY OF ANIMALS† (see page 17).

No candidate may take both the subjects (18) and (19).

(20) HYGIENE (see pages 18 and 19).

GEOGRAPHY (see page 10).

This subject may be taken either in Group I. or Group IV.

GROUP V.

(21) BOOKKEEPING.—Questions will be set on Bookkeeping by double entry. Candidates are required not only to post items to the ledger but also to attempt a balance sheet and profit and loss account. Ruled forms will be provided for the candidates. *Alternative papers will be set (see the Time Table).*

(22) DRAWING :

(a) OBJECT DRAWING.—The group will consist of one or two of the following solids:—The cube, square prism, cylinder cone, triangular prism, square pyramid, hexagonal prism, and ring; together with some common object (or objects) and a drawing board. The group is to be drawn in outline with pencil and may be lightly shaded in pencil.

(b) MEMORY DRAWING.—An object will be shown to candidates for three minutes in the Examination Room and then removed. Candidates will be required to draw this object from memory in any medium, *Alternative papers will be set (see the Time Table).*

(c) FLAT DRAWING.—A print of some historical object or ornament will be given for candidates to copy on either an enlarged or a reduced scale.

(d) ELEMENTARY DESIGN OR SPACE FILLING.—Candidates will be supplied with a print of some characteristic portion of a plant, and will be required to fill a given space with a coloured design based thereon. Credit will be given for good lettering in any writing that appears on the sheet.

(e) MECHANICAL DRAWING.—The Drawing to scale from given data, in plan, elevation, and section of tools and simple parts of machinery such as Hammerheads, Spanners, Callipers, Rivets, and Riveted joints, Nuts and Bolts, Pipes and Pipe joints, Lubricators, Shaft couplings, Bearings, and Connecting rods.

(f) PLANT DRAWING FROM MEMORY.—Three plants will be set from the following list:—Anemone, Bluebell, Daffodil, Daisy, Foxglove, Fuchsia, Geranium, Ivy, Kingcup, Laurel, Lily of the Valley, Rose. Candidates will be required to draw one of these three from memory in any medium.

To pass in Drawing, candidates must take (a) and two other subjects. Not more than four subjects in all may be taken.

(23) MUSIC :

(a) Questions will be set on Notation; Scales, Clefs, Keys, Intervals, Time; the Marks and Terms generally employed in Music; Cadences.

(b) Exercises will be set, in not more than two voice parts, in which the lower or higher part will be given. The added part should be melodious and should form (with the given part) good two-part writing. Passing notes should be used freely.

(c) AURAL TESTS.—Candidates will be required—

(i.) To write down from dictation a short melodic phrase, the key of which will be given and the keynotes sounded, and to add bar lines;

(ii.) To reproduce examples of musical rhythm which will be played or tapped, the answers to be written on one note (the same pitch) throughout;

(iii.) To recognize common chords and their inversions.

To pass in Music, candidates must satisfy the Examiners both in the Aural Tests and in the written work, including (b).

(24) NEEDLEWORK (see pages 19 and 20).

SENIOR SCHOOL CERTIFICATE EXAMINATION.

The examination will comprise the subjects included in the following four groups. Every candidate will be required at one and the same examination to satisfy the requirements of Groups I., II., III., and to reach a certain standard either in two additional subjects from among those included in these three groups or in one such additional subject, together with (1) one of the subjects 27 to 29 (Art, Music, Needlework) or (2) the two subjects 24 and 26 (Bookkeeping and Shorthand).

* To pass in any Science section, candidates must satisfy the Examiners in both the theoretical and practical parts of the subject. The Science subjects can be taken at those Centres only at which a suitable laboratory and apparatus can be provided. A special local fee may be charged.

† Candidates will be provided with mathematical tables in all papers in Chemistry and Physics; they may bring their slide rules in the practical examination in Chemistry and Experimental Science.

‡ Credit will be given for knowledge shown by candidates at Centres Overseas of the flora and fauna of their own country.

§ Candidates may substitute the following list:—Fuchsia, Geranium, Hibiscus, Lemon, Orange, Orchid, Tomato.

Candidates have to reach the standard of a pass with credit in each of their five subjects in order to obtain a certificate.

Candidates may be admitted to the examination for a pass certificate without limitation as to age, but those born before December 15, 1909, will not be eligible for Honours or for marks of distinction.

No candidate may enter for papers in more than 8 subjects. Except in subjects 1 and 2 no student may take two papers set at the same time in the Time Table.

Candidates may take (a) Arithmetic alone in Subject 16,* (b) a single paper in subject 17*. Apart from these, no single paper may be taken in a subject comprising two or more papers.

GROUP I.

(To satisfy the requirements for Group I., Candidates must satisfy the Examiners in the English section.)

1. RELIGIOUS KNOWLEDGE: † (N.B.—The Revised Version of the Bible will be used.)

The Examination will consist of questions on (a) the Gospel of *St. Matthew*, credit being given for a satisfactory knowledge of the original Greek; (b) the Life and Teaching of Christ as contained in the Synoptic Gospels; (c) the *Acts of the Apostles*, i.—xv.; (d) *I Kings*; (e) Old Testament History from the death of Jeroboam II. to the captivity of Judah, with reference to *II. Kings* xv.—end, *Isaiah* i.—xi., xxviii.—xxxii., *Jeremiah* i.—ix., xviii.—xxxix.; (f) *Galatians* and *St. James* (alternate papers will be set); (g) the Preface to the Book of Common Prayer: "Concerning the Service of the Church": "Of Ceremonies"; and the Order for Morning and Evening Prayer; questions will be set on the history of these portions of the Prayer Book (special attention should be paid to the Apostles' Creed); (h) the Church Catechism and the Office for Holy Communion in the Book of Common Prayer. In New Testament subjects special papers in which the Douay version is used will be prepared; see footnote † on page 3.

Candidates must satisfy the Examiners in two of these papers taken together. They may offer three papers in all, but they will not be required to take more than two papers in order to obtain the mark of distinction. No candidate may take both (a) and (b), or both (d) and (e), or both (g) and (h), or more than two of the papers (a), (b), (c), (d), (e).

2. ENGLISH:

(a) English Composition.

Exercises, including the composition of an Essay, will be set with the object of testing the candidates' power to write clear and grammatical English.

(b) Shakespeare, *The Tempest* or *Hamlet*;

(c) ‡ *Lyrical Ballads*, 1798–1805 (Methuen) or *An Anthology of Modern Verse* (Methuen's English Classics);

(d) Bacon, *Essays* i.—xxviii. or *Ruskin, Selections* (ed. A. C. Benson, Pitt Press);

(e) *General English Literature*.—A paper containing twelve questions, of which candidates should attempt only five, will be set as follows:—

(i.) Two questions on Shakespeare, one of which will be set more especially with reference to particular plays or characters.

(ii.) Questions which will give opportunity to candidates to show first-hand knowledge of the most important works of some of the following:—

Poets: Spencer, Milton, Gray, Wordsworth, Coleridge, Byron, Shelley, Keats, Tennyson, Browning.

Prose Writers: Bacon, Addison, Johnson, Lamb, Macaulay, Carlyle, Ruskin, Scott, Jane Austen, Dickens, Thackeray.

(iii.) Questions which candidates will be able to answer from a general knowledge of (a) such poems as are included in well-known anthologies; (b) Elizabethan Drama, (c) Nineteenth Century Fiction.

(iv.) A question containing a number of short passages (some at least of which will be taken from the works of authors mentioned above); candidates answering this question will be required to identify any four of these passages.

Candidates must take paper (a) and any two of the papers (b) to (e); they may not take more than three papers in all. To satisfy the Examiners in English they must reach a certain standard in the three papers taken together, and must also reach a certain minimum standard in paper (a). To obtain the mark of distinction they must reach a higher standard in the subject as a whole.

Importance will be attached to clearness and correctness of style.

3. HISTORY:

(a) HISTORY OF ENGLAND.—The paper will consist of three sections on the periods (i.) 1066 to 1603; (ii.) 1485 to 1714; (iii.) 1714 to 1900, respectively. Candidates may select questions from any one or two of the sections. Questions may be set involving some knowledge of the Social History and Architecture of the period studied.

(b) HISTORY OF THE BRITISH EMPIRE.—The paper will consist of two sections on the periods (a) A.D. 1600–1763, (b) 1763–1906. Candidates may select questions from either or both of these sections.

(c) OUTLINES OF MODERN EUROPEAN HISTORY, 1815 A.D. to 1878 A.D., with questions on the most important events in the periods 1789 to 1814 and 1879 to 1914.

(d) ROMAN HISTORY, B.C. 266 to A.D. 14.

(e) GREEK HISTORY, B.C. 510 to B.C. 323.

Only one of the above five papers may be taken.

A wide choice of questions will be given in all papers.

4. GEOGRAPHY (see page 10).

Geography may be taken either in Group I. or in Group III. Candidates are not required to specify on their entry form the group in which they desire to count the subject.

GROUP II.

(To satisfy the requirement for Group II., Candidates must reach a certain standard in one of the subjects 5 to 15 or a certain lower standard in two of the subjects 5 to 15, provided that one of them is Latin or Greek.)

5. LATIN:

Two papers will be set. Paper I. will include (1) questions on grammar; (2) one or more easy unprepared passages for translation into English, a vocabulary of unfamiliar words being given; (3) easy sentences for translation into Latin; (4) a continuous passage for translation into Latin.

* No mention of a single paper in any of these subjects will be made on the certificate, except in subject 17. See note † on page 8.

† In 1928 and 1929 papers will be set on the Scripture subjects given below:—

1928: (a) *St. Mark*; (c) *the Acts of the Apostles* xiii.—xxviii.; (d) *II. Kings*; (e) *The Captivity and Return*, with reference to *Ezra*, *Nehemiah*, *Isaiah* xl.—lv., *Ezekiel* i.—iii., xxxiii.—xxxviii., *Haggai*; (f) *I. Corinthians*.

1929: (a) *St. Luke*; (c) *The Acts of the Apostles* i.—xv.; (d) *Genesis* xii.—xxiv., xxvii.—xxxv., xxxvii., xxxix. to end; (e) *Old Testament History* from the birth of Samuel to the death of David, with reference to *I. and II. Samuel* and *I. Kings* i., ii.; (f) *Philippians* and *I. Peter*.

‡ A paper will be set on *Chaucer, Prologue* and *Nonne Prestes Tale* for those candidates only who indicate clearly on the entry form their desire to take it.

Paper II. will contain (a) passages for translation from selected books, with questions, and (b) unprepared passages for translation into English.

Candidates will be required to attempt the unprepared translation in Paper II. and to offer one of the following selected books:—*Cicero, Pro Milone*; *Livy V.*, 1-40; *Virgil, Aeneid VIII.*; *Horace, Epistles, I.*, 1, 2, 6, 7, 10, 13-17.

Candidates must reach a certain standard in the subject as a whole, and must also satisfy the Examiners separately in Paper I. To gain the mark of distinction they must reach a higher standard both in the subject as a whole and in Paper I., and must also reach a certain standard in the unprepared translation of Paper II.

6. GREEK :

Two papers will be set. Paper I. will include (1) questions on grammar; (2) one or more easy unprepared passages for translation into English, a vocabulary of unfamiliar words being given; (3) easy sentences for translation into Greek.

Paper II. will contain (a) passages for translation from selected books, with questions, and (b) unprepared passages for translation into English.

Candidates will be required to attempt the unprepared translation in Paper II. and to offer one of the following selected books:—*Thucydides III.*, 1-50; *Xenophon, Memorabilia II.*; *Homer, Iliad IX., X.*, 1-298; *Euripides Medea.*

Candidates must reach a certain standard in the subject as a whole, and must also satisfy the Examiners separately in Paper I. To gain the mark of distinction they must reach a higher standard both in the subject as a whole and in Paper I., and must also reach a certain standard in the unprepared translation of Paper II.

7. FRENCH :

Two papers will be set. Paper I. will consist of passages for translation into English. Paper II. will contain (a) one passage of English for translation into French; (b) an outline in French of a story for expansion.

Candidates must reach a certain standard in the subject as a whole. To gain the mark of distinction they must reach a higher standard in the subject as a whole, and must also reach a certain standard in Paper I. and in Paper II.

Marks gained for Spoken French by candidates who satisfy the Examiners in this test will be taken into account for the award both of a pass with credit and of the mark of distinction.

8. GERMAN.* 9. SPANISH. 10. ITALIAN. 11. DUTCH :

The paper will consist of (1) passages for translation into English; (2) one passage of English for translation into the language; (3) an outline (given in the language) of a story for expansion.

Candidates must reach a certain standard in the subject as a whole. To gain the mark of distinction they must reach a higher standard in the subject as a whole, and must also reach a certain standard in (1) and in (2).

In each of the subjects, 8-10, marks gained in the Oral Examination (see page 10) by candidates who satisfy the Examiners in this test will be taken into account for the award both of a Pass with credit and of the mark of distinction.

Section 12.—SINHALESE :

Two papers will be set. Paper I. will include questions on the set books.

Paper II. will include questions in grammar, unprepared translation from Sinhalese into English and translation into Sinhalese (composition).

The selected books for 1927 are: (1) *Vimanawastu Prakarana—Pithachitralata and Paricchattaka Vargas*; and (2) *Hansa Sandesa*, verses 1-62.

Candidates must reach a certain minimum in Paper II. taken as a whole, and a higher minimum in Papers I. and II. taken together. To gain the mark of distinction they must reach a higher standard in the subject as a whole, and must also reach a certain standard in translation and composition.

Section 13.—TAMIL :

Two papers will be set. Paper I. will include questions on the set books.

Paper II. will include questions in grammar, unprepared translation from Tamil into English and translation into Tamil (composition).

The selected books for 1927 are: POETRY AND PROSE: *Tirukkural*, Chapters XXXI to XL. Selections from Tamil Poetry and Prose. (By M. V. Ramanuja Chariar.) Part II.—*The Whole book*, omitting selections from *Purananuru* and *Silappathikaram* (poetry) and from *Periyapuramam* (prose). Published by Longmans Green & Co., Madras (Price 9 annas).

Candidates must reach a certain minimum in Paper II. taken as a whole, and a higher minimum in Papers I. and II. taken together. To gain the mark of distinction they must reach a higher standard in the subject as a whole, and must also reach a certain standard in translation and composition.

Section 14.—PALI :

Two papers will be set. Paper I. will include (1) questions on grammar; (2) one or more easy unprepared passages for translation into English; (3) easy sentences for translation into Pali; (4) a continuous passage for translation into Pali, or as an alternative an essay of a simple character to be written in Pali.

Paper II. will contain (a) passages for translation from the selected book, with questions; and (b) as alternatives for the selected book, unprepared passages for translation into English, with questions.

The selected book for 1927 is: *Rasavahini, Nandirajavagga*, and first five stories of *Yakkavanchita Vagga*.

Candidates must reach a certain standard in the subject as a whole, and must also satisfy the Examiners separately in Paper I. To gain the mark of distinction they must reach a higher standard both in the subject as a whole, and in Paper I.

Section 15.—SANSKRIT :

Two papers will be set. Paper I. will include (1) questions on grammar; (2) one or more easy unprepared passages for translation into English; (3) easy sentences for translation into Sanskrit; (4) a continuous passage for translation into Sanskrit.

Paper II. will contain (a) passages for translation from the selected book, with questions; and (b) as alternative for the selected book, unprepared passages for translation into English, with questions.

The selected book for 1927 is: *Hitopadesa, Suhridbheda, and Vigrahakandas*.

Candidates must reach a certain standard in the subject as a whole, and must also satisfy the Examiners separately in Paper I. To gain the mark of distinction they must reach a higher standard both in the subject as a whole and in Paper I.

* Candidates are not required to use German characters, but credit will be given for the use of them, provided that the writing is well formed and legible.

GROUP III.

(To satisfy the requirements for Group III., Candidates must reach a certain standard either in one of the subjects 16 to 20, or in Arithmetic, together with subjects 21 or 22, or with Geography.)

Candidates taking any of the mathematical papers other than Arithmetic* will be provided in the examination room with mathematical tables†; they should bring graduated rulers and protractors for all papers in which these are likely to be required. Slide rules may not be used.

16. ELEMENTARY MATHEMATICS :

(a) ARITHMETIC * † (see the Junior Syllabus for Arithmetic on page 2).

(b) GEOMETRY (see pages 11 and 12), with a few easy questions on Numerical Trigonometry.

(c) ALGEBRA.—The paper will include questions on the Syllabus for Algebra on page 4, both Parts I. and II. Candidates will be provided in the Examination Room with squared paper. They should bring graduated rulers.

Candidates must satisfy the Examiners in the three papers taken together.

N.B.—Marks below a certain minimum in any paper will not be counted.

The mark of distinction in Elementary Mathematics is awarded on the combined results of the three papers included in subject 16.

17. ADDITIONAL MATHEMATICS. † Three papers will be set :

Paper I.—(a) Geometry: harder questions on the syllabus for subject 16 (b), on other properties of triangles and circles, and on the elementary geometry of the plane and sphere. Algebra: harder questions on the syllabus for subject 16 (c), and easy questions on more advanced work, including permutations and combinations and the use of the binomial, exponential, and logarithmic expansions. (b) Trigonometry: to solution of triangles. Graphs of trigonometrical functions; addition theorems; problems in two and three dimensions.

Paper II.—(a) Elements of Analytical Geometry. Easy questions on the straight line, the circle, and the conic sections referred to principal rectangular axes. (b) Elements of Differential Calculus, including the differentiation of simple functions, turning values, tangents and normals; easy physical applications.

Paper III.—APPLIED MATHEMATICS, including the equilibrium of forces acting in one plane; the properties of the centre of gravity; friction; the lever, the common balance, the inclined plane, and the block-and-tackle; the composition and resolution of velocities and accelerations in one plane; rectilinear motion with uniform acceleration; mass, momentum, dynamical measure of force; work, energy, power; the time of flight, greatest height and horizontal range of a projectile. In some simple questions candidates may be required to use graphical methods.

To satisfy the Examiners in Subject 17, candidates must take at least two of the Papers I., II., III. In each of the Papers I. and II. candidates may take either or both of the two sections (a), (b). No marks below a certain minimum for any paper will be counted.

The mark of distinction in Additional Mathematics is awarded solely on Subject 17.

18. CHEMISTRY § (see page 13): Theoretical Chemistry; Practical Chemistry.—Candidates must satisfy the Examiners in the subject as a whole, reaching a certain standard in the theoretical work. Alternative papers will be set.

19. PHYSICS § (see pages 14 and 15): Experimental Mechanics; Heat; Sound and Light; Electricity and Magnetism.—Questions will be set on fundamental laws and the experiments that illustrate them.

Two papers on theory and a practical paper, each containing questions on all the four branches of the subject will be set.

Candidates must show a knowledge of more than one branch of the subject and satisfy the Examiners in the three papers taken together, reaching a certain standard in the theoretical work.

A candidate taking both Chemistry and Physics and coming near the standard of a pass with credit in both these subjects, without actually attaining it in either, will be certified to have passed with credit in "Elementary Chemistry and Physics."

A candidate can satisfy the minimum requirement in Group III. (i.e., in one subject of Group III.) on reaching both in Chemistry and in Physics a slightly lower standard than that required in either of the subjects separately.

20. BOTANY || (see pages 15, 16, 17).—Two papers will be set, of which the first (Botany I.) will contain questions on Elementary Physics and Chemistry and a practical test in Botany. Candidates must satisfy the Examiners in both papers taken together.

21. NATURAL HISTORY OF ANIMALS (see page 17).—The examination will include a practical test.

22. AGRICULTURAL SCIENCE (see page 18).—Two papers will be set. Candidates must satisfy the Examiners in both papers taken together.

23. PHYSIOLOGY AND HYGIENE (see page 19).

GEOGRAPHY (see page 10).

Geography may be taken either in Group I. or in Group III.. Candidates are not required to specify on their entry form the Group in which they desire to count the subject.

GROUP IV.

24. BOOKKEEPING.—Questions will be set on Bookkeeping by double entry. Candidates are required not only to post items to the ledger and draw up a trading account, but also to attempt a balance sheet and profit and loss account. Ruled forms will be provided for the candidates. Alternative papers will be set.

25. MENSURATION AND SURVEYING.—Questions will be set on Mensuration and on the Elements of Land Surveying and Levelling. Tables of logarithms will be provided in the Examination Room with (see footnote † on page 4). Candidates should provide themselves with rulers, scales, &c.

* Tables of Logarithms of Numbers will be printed on the back of the question paper in Arithmetic. Candidates are advised not to use them in attempting to solve any question unless they are satisfied that the answer can be obtained to a sufficient degree of accuracy.

† See note † on page 4.

‡ A pass with credit in a single paper of subject 17 will be stated on the certificate, if the candidate also passes with credit in subject 16. A pass with credit in Arithmetic will not be stated on the certificate.

§ These subjects can be held at Centres only at which a properly equipped laboratory is available for the purpose. A special local fee may be charged. Candidates will be provided with mathematical tables (see footnote † on page 4) in all papers in Chemistry and Physics; they may bring their slide rules in the practical examinations in both subjects.

|| Credit will be given for knowledge shown by candidates of the flora and fauna of their own country.

26. **SHORTHAND.**—Candidates will be required to take down passages read aloud, and afterwards to transcribe them. Passages will be dictated at the rates of seventy words and ninety words per minute. No candidate may take both subject 25 and subject 26.

27. **ART :**

Success or failure will depend on a candidate's performance in the subject as a whole ; but no marks below a certain level in the individual papers will be counted towards the required total.

Candidates may take not less than three nor more than five papers in all ; (a) or (b) must be among the papers taken.

(a) **OBJECT DRAWING.**—The group will consist of common objects and a drawing board, together with one or more of the following solids : the cube, square, prism cylinder, cone, triangular prism, square pyramid, equilateral triangular pyramid (regular tetrahedron), hexagonal prism, skeleton cube, and ring ; it is to be drawn and shaded in any medium that may be selected by the candidates.

(b) **MEMORY DRAWING.**—(1) An object will be shown to the candidates for three minutes in the Examination Room and then removed. Candidates will be required to draw this object from memory. (2) Candidates will also be required to draw from memory a group of simple objects, which may include figures or plants, the drawing to be executed in any medium.

(c) **DRAWING FROM THE FLAT.**—A print of some historical object or ornament will be given for a candidate to copy on either an enlarged or a reduced scale in any medium.

(d) **DESIGN AND DECORATIVE COMPOSITION.**—[(i.) or (ii.) or (iii.)].

Three questions will be set, but only one must be attempted.

(i.) **Space-filling.** Candidates will be required to fill a given space with a design based on a plant (a drawing of which will not be given) to be selected from the following list* : Blackberry, Buttercup, Canterbury Bell, Convolvulus, Fuchsia, Honeysuckle, Lily, Marsh Marigold, Nasturtium, Oak, Rose, Vine. A choice of three plants will be given.

(ii.) A design will be required based on some historical style of ornament, a print of which will be given.

(iii.) A design will be required in relation to one of the following crafts : Needlework, Script-writing and Lettering, Leatherwork, Pottery. Credit will be given for good lettering. If the purpose stated precludes the use of colour, a design in black and white will be accepted : otherwise the design must be coloured. A choice of two crafts will be given.

(e) **FIGURE COMPOSITION.**—Drawings may be executed in any medium and must show one or more figures engaged in ordinary occupations. A choice of subjects will be given.

(f) **PLANT DRAWING FROM MEMORY.**—Three plants will be set from the list* given under (d) (i.), of which only one is to be drawn. The drawing, which may be in any medium, must show characteristic details of structure from an artistic rather than a botanical point of view.

(g) **PAINTING IN WATER-COLOURS.**—On a sheet of paper, or on a Whatman board (size about 14 in. × 10½ in.) supplied by the candidate, a study in water-colours will be required. The group to be copied will be arranged from objects in common use, with a background suitable for a water-colour painting, and may include flowers and fruits.

(h) **PERSPECTIVE DRAWING.**—Geometrical and common objects in parallel and angular perspective, above and below the horizon. A knowledge of oblique planes will not be required.

(i) **MECHANICAL DRAWING.**—The Syllabus is the same as for the Junior Examination (see page 5), with the addition of Pulley Wheels, Eccentrics, Cranks, Pistons, Cylinders, &c.

(j) **HISTORY OF ART AND ARCHITECTURE.**

Candidates may either select questions from the two parts of the paper or confine their attention to one part.

PART I.—An elementary knowledge will be required of—

(a) The development of European painting from the 13th century to the end of the 16th century.

(b) The greatest masters of the Italian and Spanish Schools.†

PART II.—An elementary knowledge will be required of—

(c) European Sculpture (Ancient, Medieval, and Modern).

(d) The development of Western Architecture, together with some acquaintance with the Ancient styles and the leading characteristics of Egyptian, Greek, Roman, Byzantine, and Gothic building.

Questions may be set on Renaissance Architecture, with special reference to work of this period in England.

At least seven questions will be set in each part of the paper, and candidates will be asked to answer not more than five questions in all.

28. **MUSIC.**—Candidates will be required to reach a certain standard on the two papers taken together.

PAPER I.

(a) **AURAL TRAINING.**—Candidates will be required : (i.) To write down from dictation a short melodic phrase the key of which will be given and the keynote sounded and to add bar-lines ; (ii.) to write down, from memory, in any key (or mode) specified by the Examiners, the melody of one of the following twelve National or Folk Songs : " Blow, away the morning dew." " Come lasses and lads." " Dabbling in the dew." " Drink to me only with thine eyes." " Flowers of the Forest." " The Golden Vanity." " Heart of Oak." " John Anderson my Jo." " Land of my Fathers." " The Poacher." " Silent O Moyle." " The Wraggle Taggle Gipsies O " ; (iii.) to reproduce examples of musical rhythm which will be played or tapped, the answers to be written on one note (the same pitch) throughout ; (iv.) to recognize and name simple changes of key in passages played of which the key will be given and the keynote sounded ; such changes being limited to modulations to the dominant, sub-dominant, and relative major or minor keys ; (v.) to recognize common chords and their inversions, and cadences. The names of the chords are to be written down. In cadences, the dominant, sub-dominant, and tonic notes will not necessarily be in the bass part.

(b) **STRUCTURE AND HARMONIZATION OF MELODIES.**—Candidates will be required : (i.) either to comment on the shape and balance of one or more melodies not already announced ; or to compose a melody to a given stanza of verse ; (ii.) to harmonize a given melody, indicating the harmony by means of either a sketch of a pianoforte accompaniment or a figured bass.

PART II.

(c) Candidates will be required to show a general elementary knowledge of the outline of musical history ; a choice of questions will be given.

(d) **STUDY OF SPECIFIED WORKS.‡**

The score of (i.) a work for pianoforte solo ; (ii.) a work for solo instrument with pianoforte ; (iii.) a work for voices in not more than four parts, will be prescribed each year for detailed study. A candidate will be required to select one of these. The questions on the specified work will embody points of construction, context, historical circumstances, and artistic influences. No knowledge of Harmony will be necessary beyond what is required for the Aural Tests.

* Candidates may substitute the following list : Convolvulus, Fuchsia, Honeysuckle, Lily, Orange, Orchid, Rose, Vine.

† In 1928, the Flemish and Dutch Schools will be substituted, and in 1929 the French and English Schools.

‡ Copies with numbered bars will be provided in the examination room for the use of candidates.

The works prescribed for the Examination of 1927 are as follows :—

- (i.) Bach, Prelude and Fugue in G minor (48 Preludes and Fugues, No. 16 of Book I.);
- (ii.) Beethoven, Violin and Pianoforte Sonata in A major, Op. 47, No. 9 (Kreutzer Sonata);
- (iii.) Orlando Gibbons, Madrigal "what is our life?" (ed. Fellowes : Stainer and Bell).

In addition to Papers I. and II., a candidate for distinction may submit before the date of examination an original composition certified to be the unaided work of the candidate; but the mark of distinction can be obtained for work of sufficient merit on the two papers.

29. NEEDLEWORK (see pages 19 and 20). There will be a theoretical and a practical paper. Candidates must satisfy the Examiners in both.

EXAMINATION IN SPOKEN FRENCH, GERMAN, SPANISH, AND ITALIAN.*

Candidates entering for the spoken examination in a language must also enter for that language in the written examination.† The fact of their having satisfied the Examiners in the spoken examination will be entered on their certificate and indicated in the class list, only if they have at the same time passed with credit in the language.

The spoken examination will not be necessary for passing in the language or for the mark of distinction. In the Senior Certificate Examination, high marks gained in the Oral test will be accepted as compensating for a slight deficiency in the written examination in the language, for the award both of a pass with credit and of the mark of distinction. In the Junior Certificate Examination, the result of the Oral test will be taken into account for the award of the mark of distinction in the language.

Candidates will be required (1) to read aloud a passage in the language; (2) to write from dictation a passage in the language; (3) to hold a short conversation in the language with the Examiner.

They may, but are not obliged to, offer a portion of a French or German or Spanish or Italian‡ author, on which, if approved by the Syndicate, the conversation may be partly based. A book or a portion of a book containing less than 6,000 words will not be approved. A list of certain representative books in French and German already approved may be obtained from the General Secretary. Application with regard to books not already approved must be received by the Director of Education not later than May 12, and must be accompanied by a copy of the book.

The oral examination can be held in Colombo only. The fee is Rs. 5 per candidate (the minimum payable by any school or by a private candidate being Rs. 15 for each language).

GEOGRAPHY SYLLABUS.

Questions will be set on the assumption that the principles of Physical Geography form the basis of the teaching. Special attention should be directed to the inter-relationships between the activities of man and his physical environment. Therefore, in each region studied, attention should be drawn to such physical data as position and size, relief, coastlines, annual and seasonal distribution of temperature and rainfall, natural vegetation, mineral wealth, &c. The human and economic geography should be taught in close relationship with this physical basis, and such topics as leading occupations, distribution of population, means of communication, town sites, political boundaries, modes of living, &c., should receive special attention. At the Senior stage the work will naturally be of a more advanced character.

Pupils should be trained to draw sections showing the relief of the regions they study. They should be able to draw sketch maps or diagrams to explain or illustrate the written parts of their answers. They may be required to insert certain geographical features or to indicate distributions (e.g., rainfall, coalfields, population) on outline maps.

JUNIORS.

(A reasonable choice of Questions will be given.)

(i.) *General World Geography, including Map-work.*—Study of the globe. Size, shape, and movements of the earth. Latitude and longitude. The continents and oceans. The narrower seas and straits. Simple studies of the principal highland and lowland regions. Elementary studies of climate. Prevailing winds. The distribution of rainfall and temperature. The distribution of natural forest land, grass land, and desert. Different types of regions, such as tropical forests, hot deserts, tundra, temperate grass lands, &c., with special reference to the life of man.

Map Study: The use and reading of maps, e.g., the one-inch sheet of the local Ordnance Map.

(ii.) India and Ceylon.

(iii.) *The Geography of one of the following* —(a) Europe, (b) Asia, (c) America, South of the United States.

(ii.) and (iii.) are to be treated along the lines broadly indicated in the Introduction to this Syllabus.

SENIORS.

(A reasonable choice of Questions will be given.)

(i.) *General, Physical, and World Geography, including Map-work.*—The size, shape, and movements of the earth. Latitude and longitude. Longitude and time. Standard time. Distribution of land and water. Ocean currents, and a description (not the causes) of tidal phenomena. The general relief of the land. Mountains, plateaus, plains, river systems, lakes, &c. Coastlines and continental shelves. The distribution of atmospheric pressure. The wind systems. Annual and seasonal distribution of rainfall and temperature. Types of climate. The distribution of natural vegetation. The chief types of natural occupations. The major natural regions of the world.

Map Work: Outlines of methods used in the construction of maps. The reading of topographical maps and the preparation, from furnished data, of statistical, climatic, contour, and other similar maps. The variation of the compass.

(ii.) The outlines of the regional and political geography of the world. The methods of treatment will be those broadly indicated in the Introduction to the Syllabus. The same amount of detail will, however, not be required in all parts of the world.

Most attention should be given to the Monsoon Lands of Asia and the East Indies. The general Geography of Asia and Europe should be treated in less detail. The rest of the world in outline.

N.B.—It is realized that the whole of the work set out above for the Senior Examination cannot be taught in one year. It is therefore strongly recommended that schools should frame their geographical courses so that the whole of the work leads up to the World Geography now required by the Syllabus.

* For the Senior School Certificate Examination only.

† Senior candidates, however, who have already obtained a certificate upon which the written examination in any of the languages is recorded, may enter at a subsequent examination for the spoken examination in the same language, and, if successful, they will receive a supplementary certificate to that effect. The fee, as stated above, together with a share of the Examiner's expenses, must be paid. The date with index number when such students gained the certificates must be given on the oral entry forms, and the full name and address must in addition be given on the back of the form.

‡ For the Senior Examination only.

SYLLABUS IN GEOMETRY.

GENERAL INSTRUCTIONS APPLICABLE TO THE JUNIOR AND SENIOR EXAMINATIONS.

The papers in Geometry will contain questions on Practical and on Theoretical Geometry. Every candidate will be expected to answer questions in both branches of the subject.

The questions on Practical Geometry will be set on the constructions contained in the annexed Schedule A, together with easy extensions of them. In cases where the validity of a construction is not obvious, the reasoning by which it is justified may be required. Every candidate must provide himself with a ruler graduated in inches and tenths of an inch, and in centimetres and millimetres, a set square, a protractor, compasses, and a fairly hard pencil. All figures must be drawn accurately and distinctly. Questions may be set in which the use of the set square or of the protractor is forbidden.

The questions on Theoretical Geometry will consist of theorems contained in the annexed Schedule B, together with questions upon these theorems, easy deductions from them, and arithmetical illustrations. Any proof of a proposition will be accepted which appears to the Examiners to form part of a systematic treatment of the subject; the order in which the theorems are stated in Schedule B is not imposed as a sequence of their treatment. In the proof of theorems and deductions from them, the use of hypothetical constructions will be permitted.

JUNIOR EXAMINATION.

Attention is called to the General Instructions above.

The paper will consist of two parts, each containing questions on Practical and on Theoretical Geometry. Candidates can pass in Geometry by doing sufficiently well in Part I. The use of algebraical symbols is permitted.

PART I.—Questions will be set on Schedules A (i.), A (ii.), and B (i.), B (ii.).

Candidates will also be expected to be acquainted with the forms of the simpler solid bodies, namely, the cube, the rectangular block, the tetrahedron, the sphere, the cylinder, the wedge, the pyramid, and the cone.

PART II.—Questions will be set on Schedules A (iii.) and B (iii.).

SENIOR EXAMINATION.

Attention is called to the General Instructions above.

Questions will be set on Schedules A (i.), A (ii.), A (iii.), and B (i.), B (ii.), B (iii.). The use of algebraical symbols and (in the solution of riders) of trigonometrical ratios is permitted.

SCHEDULES.

SCHEDULE A. (PRACTICAL.)

A (i.).

Bisection of angles and of straight lines.

Construction of perpendiculars to straight lines.

Construction of an angle equal to a given angle.

Construction of angles of 60° , 45° , and 30° .

Construction of parallels to a given straight line.

Simple cases of the construction from sufficient data of triangles and quadrilaterals.

Division of straight lines into a given number of equal parts or into parts in any given proportions.

A (ii.).

Construction of a triangle equal in area to a given polygon.

Construction of tangents to a circle and of common tangents to two circles.

Construction of circumscribed, inscribed, and escribed circles of a triangle.

A (iii.).

Simple cases of the construction of circles from sufficient data.

Construction of a square equal in area to a given polygon.

Construction of a fourth proportional to three given straight lines and a mean proportional to two given straight lines.

Construction of regular figures of 3, 4, 6, or 8 sides in or about a given circle.

SCHEDULE B. (THEORETICAL.)

B (i.).

Angles at a Point.

*If a straight line stands on another straight line, the sum of the two angles so formed is equal to two right angles and *the converse.

*If two straight lines intersect, the vertically opposite angles are equal.

Parallel Straight Lines.

*When a straight line cuts two other straight lines, if (i.) a pair of alternate angles are equal, or (ii.) a pair of corresponding angles are equal, or (iii.) a pair of interior angles on the same side of the cutting line are together equal to two right angles, then the two straight lines are parallel; and *the converse.

Straight lines which are parallel to the same straight line are parallel to one another.

Triangles and Rectilinear Figures.

The sum of the angles of a triangle is equal to two right angles.

In a polygon of n sides, the sum of the interior angles is equal to $2n-4$ right angles.

If the sides of a convex polygon are produced in order, the sum of the angles so formed is equal to four right angles.

*If two triangles have two sides of the one equal to two sides of the other, each to each, and also the angles contained by those sides equal, the triangles are congruent.

*If two triangles have two angles of the one equal to two angles of the other, each to each, and also one side of the one equal to the corresponding side of the other, the triangles are congruent.

If two sides of a triangle are equal, the angles opposite to these sides are equal; and the converse.

*If two triangles have the three sides of the one equal to the three sides of the other, each to each, the triangles are congruent.

If two right-angled triangles have their hypotenuses equal, and one side of the one equal to one side of the other, the triangles are congruent.

* Proofs of these theorems will not be required.

If two sides of a triangle are unequal, the greater side has the greater angle opposite to it; and the converse.

Of all the straight lines that can be drawn to a given straight line from a given point outside it, the perpendicular is the shortest.

The opposite sides and angles of a parallelogram are equal, each diagonal bisects the parallelogram, and the diagonals bisect one another.

If a pair of opposite sides of a quadrilateral are equal and parallel, it is a parallelogram.

The straight line drawn through the middle point of one side of a triangle parallel to another side bisects the third side.

The straight line joining the middle points of two sides of a triangle is parallel to the third side, and equal to one-half of it.

If there are three or more parallel straight lines, and the intercepts made by them on any straight line that cuts them are equal, then the corresponding intercepts on any other straight line that cuts them are also equal.

B (ii.)

Areas.

Parallelograms on the same base and of the same altitude are equal in area.

Corollary.—The area of a parallelogram is equal to the area of a rectangle on the same base and of the same altitude.

Parallelograms on equal bases and of the same altitudes are equal in area.

Triangles on the same or equal bases and of the same altitude are equal in area.

Equal triangles on the same or equal bases are of the same altitude.

In a right-angled triangle, the square described on the hypotenuse is equal to the sum of the squares described on the sides containing the right angle; and the converse.

Loci.

The locus of a point which is equidistant from two fixed points is the perpendicular bisector of the straight line joining the two fixed points.

The locus of a point which is equidistant from two intersecting straight lines consists of the pair of straight lines which bisect the angles between the two given lines.

The Circle.

A straight line drawn from the centre of a circle to bisect a chord which is not a diameter, is at right angles to the chord; conversely, the perpendicular to a chord from the centre bisects the chord.

There is one circle, and one only, which passes through three given points not in a straight line.

Equal chords of a circle are equidistant from the centre; and the converse.

The tangent at any point of a circle and the radius through the point are perpendicular to one another.

If two circles touch, the point of contact lies on the straight line through the centres.

The angle which an arc of a circle subtends at the centre is double that which it subtends at any point on the remaining part of the circumference.

Angles in the same segment of a circle are equal; and, if the line joining two points subtends equal angles at two other points on the same side of it, the four points lie on a circle.

The angle in a semicircle is a right angle; the angle in a segment greater than a semicircle is less than a right angle, and the angle in a segment less than a semicircle is greater than a right angle.

The circle described on the hypotenuse of a right-angled triangle as diameter passes through the opposite vertex.

The opposite angles of any quadrilateral inscribed in a circle are supplementary; and the converse.

B (iii.)

Areas.

Illustrations and explanations of the geometrical theorems corresponding to the following algebraical identities:—

$$k(a + b + c + \dots) = ka + kb + kc + \dots,$$

$$(a + b)^2 = a^2 + 2ab + b^2,$$

$$(a - b)^2 = a^2 - 2ab + b^2,$$

$$a^2 - b^2 = (a + b)(a - b).$$

The square on a side of a triangle is greater or less than the sum of the squares on the other two sides, according as the angle contained by those sides is obtuse or acute. The difference is twice the rectangle contained by one of the two sides and the projection on it of the other.

In any triangle, the sum of the squares on any two sides is equal to twice the square on half the third side together with twice the square on the median which bisects the third side.

The Circle.

In equal circles (or, in the same circle) *(i.) if two arcs subtend equal angles at the centres, they are equal; *(iii) conversely, if two arcs are equal, they subtend equal angles at the centre.

In equal circles (or, in the same circle) *(i.) if two chords are equal, they cut off equal arcs; *(ii.) conversely, if two arcs are equal, the chords of the arcs are equal.

If a straight line touch a circle, and from the point of contact a chord be drawn, the angles which this chord makes with the tangent are equal to the angles in the alternate segments.

If two chords of a circle intersect either inside or outside the circle, the rectangle contained by the parts of the one is equal to the rectangle contained by the parts of the other.

Proportion: Similar Triangles.

(Proofs which are only applicable to commensurable magnitudes will be accepted.)

If a straight line is drawn parallel to one side of a triangle, the other two sides are divided proportionally; and the converse.

If two triangles are equiangular, their corresponding sides are proportional; and the converse.

If two triangles have one angle of the one equal to one angle of the other and the sides about these equal angles proportional, the triangles are similar.

If a perpendicular is drawn from the right angle of a right-angled triangle to the hypotenuse, the triangles on each side of the perpendicular are similar to the whole triangle and to one another.

The internal bisector of an angle of a triangle divides the opposite side internally in the ratio of the sides containing the angle, and likewise the external bisector externally.

The ratio of the areas of similar triangles is equal to the ratio of the squares on corresponding sides.

* Proof of these theorems will not be required.

ELEMENTARY EXPERIMENTAL SCIENCE SYLLABUS FOR JUNIORS.

PART I.

The general properties of matter. Cohesion. States of matter—solid, liquid, and gaseous.

The distinctive properties of solids, including simple experiments on elasticity.

The distinctive properties of liquids. The water level. The characteristic properties of a gas.

The methods of measuring length, area, volume, and time. Experiments with the simple pendulum.

The principle of the lever and of the balance.

Determination of densities and specific gravities.

Experiments on flotation. Hydrometers.

The pressure of the atmosphere. The mercury barometer. The aneroid barometer. The action of a pump. The siphon.

The effects of heat on matter. Expansion. Temperature and its measurement. The use of various kinds of thermometers. Change of state. Fusion. Evaporation and boiling. Conduction of heat. Experiments on good and bad conductors. Heating by convection and radiation.

The simple laws of light. The formation of shadows. Reflexion of light. The properties of plane mirrors.

Refraction through a glass plate and through water. The bending of light through a prism. The properties of a convex lens. The dispersion and recombination of white light. Colour.

Electrification by friction. The properties of magnets and of the electric current.

PART II.

Common laboratory operations, such as evaporation, crystallization, filtration, and distillation.

The changes that occur when substances are heated. The chemistry of air. Oxygen and nitrogen. Rusting and burning.

Qualitative examination of simple chemical changes.

The physical and chemical properties of water. Properties of hydrogen.

Properties of acids and alkalis. Neutralization, common salt, and saltpetre.

Carbon. Carbon dioxide, chalk, and lime.

At the practical part of the examination candidates will be asked to perform easy experiments on the above subjects.

CHEMISTRY SYLLABUS FOR JUNIORS.

Questions will be set requiring an elementary knowledge of the following subjects :—

The distinction between elements, compounds, and mixtures. Equivalent weights. The meaning of chemical equations. The law of definite proportions. The laws of Boyle and Charles. Crystallization and distillation, precipitation and filtration, and the use of these processes in the preparation of pure substances.

The air, its chief constituents; the effects of plants and animals on the air. Combustion. Oxidation and reduction.

Water, its evaporation and distillation; spring water, river water, sea water, hard water, soft water, rain water. The composition of water by volume.

The preparation and properties of hydrogen, oxygen, nitrogen, ammonia, nitrous oxide, nitrogen peroxide, nitric acid; chlorine, hydrochloric acid; carbon, carbon monoxide, carbon dioxide; sulphur, hydrogen sulphide, sulphur dioxide, sulphur trioxide, sulphuric acid.

The properties of sodium hydroxide, sodium chloride, sodium carbonate; calcium oxide, calcium hydroxide, calcium carbonate; lead, lead oxide, lead peroxide, red lead.

The characteristic properties of acids, alkalies, bases, and salts as illustrated by the substances mentioned above.

NOTE.—Candidates will be expected to perform simple calculations concerning the weights and gas volumes of reacting substances, but a knowledge of the atomic and molecular theories will only be required in so far as these theories are needed for the comprehension of chemical symbols, formulae, and equations.

Practical Examination.

Candidates may be asked to observe the effect of heat and of reagents on substances supplied to them, to recognize the substances referred to in the above schedule, and to identify the solid or gaseous products of a reaction, so far as these products are amongst the substances mentioned in the above schedule. They may be asked to perform simple experiments illustrating the preparation, purification, and properties of these substances. They may also be asked to perform quantitative experiments such as the estimation of the loss or gain in weight of a substance on being heated in air, or the determination of the volume of a gas given off when a carbonate or a given weight of a metal is treated with an acid. Acidimetry and alkalimetry as involved in the use of standard solutions of sulphuric acid, nitric acid, sodium hydroxide, sodium carbonate.

[The examination in Junior Practical Chemistry can be held only at centres at which a properly equipped laboratory is available for the purpose. Alternative questions will be set.]

CHEMISTRY* SYLLABUS FOR SENIORS.

N.B.—This schedule is to be taken to include the schedule for the Junior Certificate Examination.

The distinction between elements, compounds, and mixtures. The laws of Boyle, Charles, and Gay-Lussac, and Avogadro's hypothesis. The law of definite proportions. Atoms and molecules. Laws of chemical combination. Simple cases of reversible reactions. The meaning of chemical equations. Equivalent and atomic weights and the methods for their determination in simple cases only. Solution, crystallization, distillation, precipitation, and filtration, and the use of these processes in the preparation of pure substances.

The study of air and water. Oxidation and reduction. Combustion.

The chemistry of the following elements and of their chief compounds: hydrogen; oxygen; chlorine (and its relation to bromine and iodine); sulphur; nitrogen; carbon (including methane, ethylene, acetylene); sodium; calcium; iron; copper, zinc (The details of the metallurgical processes will not be required.) The characteristic properties of acids, alkalies, bases, and salts as illustrated by the above substances.

Practical Examination.

The determination of equivalent weights. The preparation and identification of the simpler substances mentioned in the above schedule. The study of the qualitative and quantitative results of the effect of heat on substances supplied. Qualitative analysis of simple salts of the commoner metals and acids (excluding phosphates).

Simple problems in volumetric analysis involving the use of standard solutions of acids, alkalies, silver nitrate, and potassium permanganate.

Alternative questions will be set, so that candidates will not necessarily be required to take the qualitative analysis.

* This subject can be taken at those centres only at which a properly equipped laboratory is available.

PHYSICS SYLLABUS FOR JUNIORS.

The questions will be principally such as will test the candidates' knowledge of the subject as gained from a course of experimental instruction.

HEAT.

Construction and use of common thermometers. The measurement of quantities of heat, of the specific heat of solids and liquids, of the latent heat of fusion of ice, and of the latent heat of steam. Coefficients of expansion, relations between the pressure, volume, and temperature of a gas. The dew-point, measurement of the saturation-pressure of aqueous vapour. Qualitative observations on the transmission of heat by conduction, convection, and radiation. The methods of production of heat. Transformation of work into heat.

SOUND AND LIGHT.

The propagation, reflexion, and refraction of light; the formation of images by a plane, convex, or concave reflecting surface, or by two plane mirrors at an angle. Graphic methods of determining the position and the size of an image. The combination of two convex lenses to form a microscope or telescope. Dispersion, the combination of lenses and a prism to form a spectroscope.

The propagation and reflexion of sound, the experimental determination of the velocity of sound in air; the use of the tuning-fork, the determination of pitch. Experiments on the vibration of strings and of columns of air.

N.B.—Candidates should bring drawing instruments and a scale graduated in centimetres and millimetres.

ELECTRICITY AND MAGNETISM.

Simple experiments on the magnetic properties of iron and steel, magnetic induction, comparison of the moments of magnets, comparison of field strength by means of a vibrating magnet.

The behaviour of electrified bodies, electrostatic induction. The electroscope and electrophorus.

Daniell and Leclanche cells. The magnetic, thermal, and chemical effects of currents. The tangent galvanometer, voltmeters. Electromotive force, current, resistance. Ohm's Law.

Practical Examination.

Candidates will not be required to answer questions in more than two of the three subjects numbered (i.), (ii.), (iii.) below.

(i.) *Heat.*—Comparison of Fahrenheit and Centigrade scales, and testing the fixed points of a thermometer. Determination of specific heats by the method of mixture. Determination of latent heat of fusion of ice. Simple qualitative experiments to illustrate the laws of heat.

(ii.) *Sound and Light.*—Velocity of sound by resonance column. Experiments on tones emitted by stretched wires or strings. Experimental verification of the laws of reflexion and refraction. The use of prisms. Experiments with concave mirrors and convex lenses.

(iii.) *Electricity and Magnetism.*—Distinction between magnetized and magnetic substances. Mapping fields of magnetic force. Comparison of pole-strength. Setting up simple cells. Comparison of currents, electromotive forces, and resistances by use of the tangent galvanometer. Deposition of copper by electrolysis.

PHYSICS SYLLABUS FOR SENIORS.

N.B.—This schedule is to be taken to include the schedule for the Junior Certificate Examination.

The questions will be principally such as will test the Candidates' knowledge of the subject as gained from a course of experimental instruction.

EXPERIMENTAL MECHANICS.

Methods of measurement, the use of graphical methods.

Velocity, acceleration, resolution, and composition of velocities and accelerations.

Mass, momentum, the ballistic balance. Force. Motion under the action of a single force.

Weight, motion of falling bodies.

Work, energy, conservation of energy, power.

Composition and resolution of forces in one plane. Conditions for equilibrium of three forces.

Centre of gravity, equilibrium.

Moments of forces; couples.

Simple machines, velocity ratio of a machine, the principle of work.

Experiments on friction.

Distinction between solids, liquids, gases.

Pressure in liquids; floating bodies.

Determination of density and specific gravity.

Pumps, hydraulic press.

Pressure of gases, Boyle's law, atmospheric pressure.

Barometer, air pumps.

HEAT.

Temperature and its measurement.

Calorimetry, specific heat of solids and liquids, latent heat.

Expansion of solids and liquids.

Relations between the volume, pressure, and temperature of a gas.

Change of state; fusion, determination of melting and boiling points, evaporation, ebullition, vapour pressure, dew-point, hygrometry.

Transmission of heat by conduction and convection.

Radiation, its propagation, its relation to light.

Mechanical equivalent of heat, its determination.

SOUND AND LIGHT.

The propagation, reflexion, and refraction of light; photometry.

Measurement of index of refraction of solids and liquids.

Total reflexion.

Graphic methods of determining the position and size of an image formed by reflexion or refraction.

Measurement of focal lengths of mirrors and lenses.

Deviation and dispersion produced by a prism. The spectrum. The Colour. The colour of natural objects.

Optical properties of the eye; long-sight and short-sight, their correction.

Combination of two lenses to form a telescope or a microscope.

Production, propagation, and reflexion of sound.

Relation between the sound produced and the character of the vibrations.

Determination of pitch of tuning-forks, beats, experiments on the vibrations of strings and columns of air ; resonance.
Experimental determination of velocity of sound in gases.

N.B.—Candidates should bring drawing instruments and a scale graduated in centimetres and millimetres.

ELECTRICITY AND MAGNETISM.

Simple phenomena of magnetism. The earth as a magnet.

Experimental verification of laws of magnetic force.

Mapping of magnetic fields, comparison of moments of magnets, comparison of strength of field.

Simple phenomena of electrostatics, electrostatic induction.

Meaning of potential, distribution of charge, capacity.

The electroscope and electrophorus.

Production of electric currents, primary cells.

Magnetic effects of a current, galvanometers.

Chemical effect of a current, laws of electrolysis, secondary cells.

Olm's Law. Resistance.

Comparisons of currents, electromotive forces, resistances.

Practical units of current, electromotive force, resistance ; specific resistance.

Heating effect of a current, Joule's Law.

Electromagnetic induction.

Experiments to illustrate its use in the dynamo and motor.

*Practical Examination in Physics.**

The examination will consist of simple experiments, chiefly of a quantitative character. Its scope will be as follows:—

Experimental Mechanics.—The measurement of lengths, areas and volumes ; the spherometer ; experiments on moving bodies ; the ballistic balance ; the simple pendulum ; experiments involving the graphical treatment of systems of forces ; the use of the balance ; machines ; the determination of coefficients of friction ; centre of gravity ; experiments involving the principle of Archimedes ; the determination of specific gravity and density ; the measurement of fluid pressure ; the barometer.

Heat.—The use of thermometers and the testing of their fixed points ; the determination of melting points and boiling points ; the determination of specific heat, capacity for heat and latent heat ; hygrometers ; the measurement of vapour pressure ; the expansion of solids, liquids, and gases ; gas thermometers ; the rate of cooling of hot bodies.

Sound and Light.—Experiments on the reflexion of light at plane and spherical surfaces ; the measurement of refractive index ; thin lenses ; prisms ; the construction of the telescope, compound microscope and spectroscope. The velocity of sound in gases ; the notes emitted by stretched strings and wires.

Electricity and Magnetism.—The measurement of magnetic pole strengths and magnetic moments ; magnetic fields, and the measurement of field strength ; the use of the condenser ; galvanometers ; measurement of current strength and resistance ; the comparison of electromotive forces.

BOTANY SYLLABUS.

INTRODUCTORY OBSERVATIONS.

The following biological principles which underlie the accompanying schedules may prove useful to teachers in their presentation of the subject to students:—

- (i.) Any single plant growing in its natural habitat may be regarded as an efficient machine. It is made up of different parts performing different functions, thus exhibiting division of physiological labour.
- (ii.) There may be many efficient types of plants growing in the same habitat. These may differ strikingly from one another in regard to single biological advantages, and yet be equally successful in regard to the sum total of their equipment for the struggle for existence.†
- (iii.) Plants are efficient for life in very various habitats, and survive through wide ranges of seasonal change. In accomplishing this plants exhibit more or less striking adaptations to the external conditions in which they exist.

It is essential that the teacher should constantly keep in mind the importance of naked-eye work and of experiments performed by the students themselves on living plants. A simple lens and dissecting instruments will be found sufficient to enable the student to recognize such anatomical features as are essential for the appreciation of physiological processes.

The schedule prescribes the use of the microscope for Senior students, but it is not intended to discourage the use of the microscope for *demonstration* purposes in the case of Junior students when it is difficult for them to form a conception of structural features (*e.g.*, stomata, chloroplasts, &c.) which are too small to be seen satisfactorily under a simple lens.

It is very important that students should be taught to make, from specimens, drawings much larger in scale than the actual objects, and diagrammatic in treatment.

With a view to avoiding the danger, consequent on limitation of time, of attempting to hurry students through the longer courses of instruction, a choice of questions will be allowed in the Junior and Senior Examinations.

In the examinations on the Junior and Senior schedules specimens (not necessarily confined to the families mentioned in the schedules) will be provided for description, and special weight will be given to this part of the examination. Students should bring a pocket lens and a dissecting instrument.

JUNIOR.

I.—THE MORPHOLOGY AND FUNCTIONS OF HERBACEOUS PLANTS.

The examination of a common herbaceous Dicotyledon to illustrate the structure and functions of the root and shoot systems ; the distribution of vascular and mechanical tissues ; the origin and position of new members on roots and shoots ; and a comparison of the growing points of stems and roots. The root and shoot systems should be treated also from a biological point of view, showing how each is adapted in its mode of growth and arrangement of parts to carry out its physiological functions in the medium in which it lives.

Students should take part in the performance of simple experiments illustrating the more important physiological functions of plants ; respiration ; transpiration ; absorption ; nutrition ; etiolation, heliotropism, and geotropism, their biological importance.

Students should have an *elementary* knowledge of the chemical and physical properties of the atmosphere, soil, and water.

* This subject can be taken at those centres only at which a suitable laboratory and apparatus can be provided.

† It is a matter of common experience that a student finds it difficult to realize, on being taught that a plant has certain advantages—say, in possessing winged fruits—why other plants are not provided with the same efficient mechanism. This and similar difficulties may be met by an application of the ideas expressed in the principle stated above.

II.—ARBORESCENT PLANTS.

Comparison of the mode of growth, habit, and bark-characters of a few common trees: the examination of twigs of some common trees, including (for deciduous trees) comparison of their leafy and leafless stages and relation of latter to dry season. Knowledge of annual history of common trees, including time of producing young foliage, colour and habit of young foliage, time of flowering, and of ripening fruit. Observation of cauliflory, of hanging roots (banyan tree), stilt roots, buttress roots, of the production of latex and useful fibre.

General characteristics of palms and bamboos contrasted with dicotyledonous trees.

III.—COMPARATIVE MORPHOLOGY AND BIOLOGY.

A comparison of a few selected plants to illustrate the principal forms of leaves and stems.

Examination of the distinctive characters and of the adaptations to different modes of life of the following series of biological types: grass, dicotyledonous herb, tree.

Adaptation to special habitats as illustrated by water plants and climbing plants.

Comparison of the different parts of plants in which food reserves are stored.

IV.—FLOWERS AND REPRODUCTION.

The student should not begin the study of flowers by learning the characteristics of various families. Flowers should, in the first place, be considered, like vegetative organs, from a biological point of view. Attention should be paid to features of biological interest in some common types of inflorescences, as well as to the functions and special morphology of the parts of the flower in relation to pollination and seed production. Attention should be paid to the importance of dichogamy and other methods of insuring cross-pollination. Flowers of the following families* should be examined: Dilleniaceæ, Malvaceæ, Leguminosæ including Mimoseæ and Cæsalpineæ, Myrtaceæ, Rubiaceæ, Compositæ, Convolvulaceæ, Scrophulariaceæ, Amaryllidaceæ, Commelinaceæ.

Different types of seeds and fruits should be examined with special reference to seed dispersal.

V.—BIOLOGICAL TYPES AND LIFE HISTORIES.

Knowledge of characteristics of the following biological types:—

Epiphytes.—Including Orchids, Ferns, Araceæ, Ficus, Clusia, their various adaptations for their habitat.

Parasites and Semi-parasites, e.g., Cuscuta, Cassytha, Loranthaceæ, Rhipsalis.

Xerophytes, e.g., Euphorbia, Sansevieria, Casuarina, Prosopis, Cactaceæ.

Insectivorous plants, e.g., Nepenthes, Drosera, Utricularia.

Hydrophytes, e.g., Nymphaea, Eichhornia, Heteranthera, Trapa, Sagittaria, Pistia.

The part played in the life of the plant by seeds, bulbs, tubers, and other structures adapted for food storage and for vegetative reproduction.

Students should themselves grow suitable seeds in order to study the germination of different types of seedlings.

It is desirable, when circumstances permit, that excursions into the country should be arranged to enable students to observe the plants of different classes of habitats.

SENIOR.

The examination will include Elementary Physics and Chemistry as well as Botany. Two papers will be set, in one of which the majority of the questions will be on Elementary Physics and Chemistry. A choice of questions will be given in each paper.

ELEMENTARY PHYSICS AND CHEMISTRY.

The characteristic properties of matter in different states. The barometer. Boyle's law. Diffusion of gases and liquids.

Temperature: the thermometer. Expansion and change of state. Charles' law. Radiant energy.

The distinction between elements, compounds and mixtures. The law of definite proportions.

The properties of air and water, and of their constituents. The relation of air and water to the life of animals and plants. Carbon, ammonia, nitrates, sulphur, phosphorus potassium and magnesium especially in relation to plant growth.

BOTANY.

I.—THE MORPHOLOGY AND FUNCTIONS OF HERBACEOUS FLOWERING PLANTS.

The microscope should be used, at the discretion of the teacher, for the examination of organs, the function of which it is difficult to understand without some knowledge of their microscopic structure.

An examination of a Dicotyledon and Monocotyledon to illustrate the structure and functions of the root and shoot systems; the distribution of vascular and mechanical tissues; the origin and position of new members on roots and shoots; and a comparison of the growing points of stem and root. The root and shoot system should be treated also from a biological point of view, showing how each is adapted in its mode of growth and arrangement of parts to carry out its physiological functions in the medium in which it lives.

Students should themselves perform simple experiments illustrating the nature of soils and the more important physiological functions of the plant, including the simpler manifestations of irritability as exhibited by the movements of leaves, stems, and roots. Special prominence should be given to this experimental work.

II.—ARBORESCENT PLANTS.

A comparative study of common trees (dicotyledons and monocotyledons, including palms, pandanus, bamboos, dracæna) as regards habit, external morphology, forms of leaves, &c.

Secondary thickening; its significance in relation to the increase in leaf-area and root development; rings in wood, whether dependent on season or not, in what trees present and in what absent, what changes in nature of wood produce them; Medullary rays; heartwood and sapwood.

III.—COMPARATIVE MORPHOLOGY AND BIOLOGY.

Simple comparative morphology of leaf and stem.

Examination of the distinctive characters and of the adaptations to different modes of life of the following series of biological types: grass, dicotyledonous herb, tree.

Adaptation to special habitats as illustrated by water plants and climbing plants and epiphytic and parasitic flowering plants.

Comparison of the different parts of plants in which food reserves are stored.

* The above list is intended to suggest suitable material for use in the study of the morphology of the flower; candidates are not expected to learn the characters of the families. If any of the orders named above cannot be obtained, teachers should use their discretion in substituting other orders, which should resemble as nearly as possible the orders for which they are substituted as regards the principal points which they illustrate.

IV.—FLOWERS AND REPRODUCTION.

The morphology and natural history of the flowers of the following families: Dilleniaceæ, Malvaceæ, Aurantiaceæ, Leguminosæ including Mimoseæ and Cæsalpineæ, Myrtaceæ, Cucurbitaceæ, Rubiaceæ, Compositæ, Convolvulaceæ, Acanthaceæ, Scrophulariaceæ, Amaryllidaceæ, Palmæ, Gramineæ.

The attention of the student should be drawn to the general uniformity of plan that prevails among flowers, and to the variations in the relations of parts characteristic of different families.

Students should be taught to construct floral diagrams, and to make drawings of longitudinal sections of flowers. Cross-pollination, self-pollination, and their mechanisms.

Fertilization and the outlines of development of the seed and fruit from the ovules and ovary in some common plants.

The general morphology of fruits and seeds and the methods of dispersal.

V.—BIOLOGICAL TYPES AND LIFE HISTORIES.

More extended study of the characteristics of the biological types in the Junior Syllabus, with the addition of mangroves, sensitive plants, e.g., mimosa, &c.

The part played in the life of a plant by seeds, bulbs, tubers, and other structures adapted for food storage and for vegetative reproduction.

Students should themselves grow suitable seeds in order to study the germination of different types of seedling.

The seedlings studied should always include cocos or some other common palm.

NATURAL HISTORY OF ANIMALS.

INTRODUCTORY OBSERVATIONS.

The formative value of Natural History lies (1) in encouraging a habit of observation, (2) in developing the power of comparison and the habit of looking for reasons for the differences between things. The teacher should therefore take care (1) that the animals, so far as possible, be seen, handled, and watched alive by his pupils, who should especially be warned that imagination is no substitute for observation in regard to the habits of the creatures; (2) that the connection between the bodily structure of each animal and its mode of life be pointed out. It is well to bear in mind also that things shown are more easily understood and make a more permanent impression on the mind than things merely told.

So far as possible simple English names for the objects of instruction should be used, both because they are more easily understood and remembered, and because the use of unfamiliar names, which must be committed to memory by an effort, is apt to give a distaste for the subject. Marks are often lost by misuse of the Latin names of things which have a well-known English name, as, for instance, the word *sternum*, which is sometimes misapplied, whereas "breastbone" cannot be.

(This should not preclude the learning of the Latin as well as the English names of animals, such as butterflies and birds, of which a collection is made and classified.)

It is not expected that students will cover the whole schedule. In section 1 it will be well to begin with the human skeleton and its relation to the external form of the body; instruction on the teeth should be given, but details of the skull, the wrist, and the ankle may be omitted. With the aid of pictures or diagrams an outline of the internal anatomy and physiology can then be given. In teaching the several mammals named in the schedule, it will be well to compare the general shape of the body, the teeth, and the bones of the hands and feet with those of Man—in many ways, physically, a primitive and generalized type. Books can be used for the foreign species, and visits to a zoological garden will be useful. British mammals should be studied alive if possible.

In section 2 the skeleton of a fowl or pigeon should be studied, but both here and in section 6 formal lessons should not be given on those parts of the subject which students will learn better by personal observation and collecting or photographing. Lectures on such subjects as warning and protective colouration will be of value. Many of the aquatic forms can be well observed in an aquarium. Insects should be reared when this is possible, and in the case of all the animals every opportunity should be taken of observation in the field.

The Syndicate are prepared to recommend text books to teachers. Application may be made to the General Secretary.

NATURAL HISTORY OF ANIMALS SYLLABUS FOR JUNIORS.

1. The general structure of a mammal and an elementary knowledge of the functions of its chief organs.

The more important characteristics, as regards form and habits, of the following mammals:—Monkeys, Bats, Moles, Hedgehogs, Carnivores, Ungulates, Whales, Rodents, Marsupials.

2. The external features of a Bird, and such details of anatomical structure as are connected with the power of flight.

The principal diversities in external form and habits characteristic of the main groups of Birds.

The eggs, nesting and singing habits, and migration of common Indian species.

3. The external features, life history, and habits of a Frog.

4. The external features and mode of life of a Fish.

5. The external features and mode of life of a Snail, a Cockroach, and an Earthworm.

6. The life history of a Moth or Butterfly.

The distribution and habits of the better known Indian species of Moths and Butterflies.

Elementary questions may also be asked with regard to very common insects of other orders.

Students will not be expected to cover the whole schedule, and the paper will contain more questions than the candidates are allowed to answer. Importance will be attached to evidence of personal observation on the part of the candidates.

NATURAL HISTORY OF ANIMALS SYLLABUS FOR SENIORS.

Questions of a more advanced nature on the subjects of the Junior Schedule, and in addition on the following subjects:—

7. The external form, habits, and life history of the more common Indian species of Insects, Fishes, Amphibians, Reptiles, and Mammals.

8. The external form and habits of the Jellyfish *Aurelia*, a Sea Anemone, a Mussel, a Crab, a Starfish.

9. The external form and habits of *Hydra*, the Horse-leech, the Pond-mussel, the Crayfish, a Spider.

Students will not be expected to cover the whole schedule, and the paper will contain more questions than the candidates are allowed to answer. Importance will be attached to evidence of personal observation on the part of the candidates.

AGRICULTURAL SCIENCE SYLLABUS FOR SENIORS.

The schedule for this subject is divided into two parts, on each of which a paper will be set. The first part is concerned chiefly with the applications of chemistry and physics to the problems of the growth of crops, and the second part with the biology of farm crops and weeds. The schedule is written in the order in which experience has shown that the subject is most readily taught.

PART I.

Questions will be set so as to test whether the candidates have studied the subject experimentally in the Laboratory.

Plants in growing increase in weight. The substances of which this increase is made must come from the plant's surroundings, that is to say, from the air and from the soil. The decomposition of plants by heat into water, carbon dioxide, and ash. The composition of the air. The preparation and properties of oxygen and nitrogen. Elements. Mixtures. The combustion of carbon. Carbon dioxide, its preparation and properties, its presence in the air, and its relations to plant and animal life. The composition of water. The preparation and properties of hydrogen. Chemical compounds. Symbols. Formulae. The physical properties of water, evaporation, freezing, latent heat, specific heat, and their bearing on the temperature of the soil. Water vapour in the air, rain, dew. Water as a solvent. Substances dissolved out of the soil by water and their relation to plant ash. The absorption of water by roots. Sand, clay, and humus in the soil: their physical properties, and their influence on the water content of the soil. The movement of water in the soil: how it can be controlled by such cultural operations as ploughing, harrowing, rolling, and hoeing.

The action of metallic calcium on water. Combustion of metallic calcium. Calcium oxide, hydroxide, carbonate. Quick lime, slaked lime, chalk, limestone, marble.

Sodium and potassium hydroxides. Magnesium and magnesium oxide. Iron and ferric oxide. Bases. Alkalis.

Preparation of ammonia from vegetable substances. Preparation and properties of ammonia. Composition of ammonia. Nitrogen in the plant.

Combustion of carbon, sulphur, phosphorus: carbon dioxide, sulphur dioxide, phosphorus pentoxide, their properties and relations to the corresponding acids.

Preparation and properties of sulphuric, nitric, and hydrochloric acids. Their composition and common reactions. Chlorine.

General properties of acids. Their neutralization by alkalis to form salts. Preparation of potassium nitrate and ammonium sulphate from acid and alkali, and ferrous sulphate from metal and acid. Equivalents of magnesium, zinc, aluminium, by dissolving metal in hydrochloric acid, and measuring volume of hydrogen evolved. Composition by volume of hydrochloric acid gas. Molecules. Atoms.

Monovalent, divalent, and trivalent elements. Reactions of iron, aluminium, calcium, magnesium, potassium, sodium, ammonium in simple salts. Reaction of carbonates, silicates, nitrates, chlorides, sulphates, phosphates. Formulae and classification of the above simple salts of these metals.

Qualitative analysis of plant ash and comparison with the soil. The plant's chief requirements from the soil—nitrogen, phosphates, potash, and lime. Composition of soil water, and absorption of food salts from soil by plant. Common manures containing nitrogen, phosphates, potash, and lime. Their occurrence, manufacture, and use simply considered, their composition and availability.

The more striking effects of manures on crops. The circulation of carbon, nitrogen, phosphates, and potash from soil to plant, plant to animal, animal to soil, in the ordinary course of farm practice. Farmyard manure. The causation and importance of the changes in the state of combination of nitrogen between the time it leaves the animal and its subsequent utilization by the plant. The broad outlines of the chemistry and physics of the building up processes which go on in plants, and of the breaking down processes which go on in animals.

PART II.

Questions will be set so as to test whether the candidates have made themselves familiar with the crops and weeds of their own country, as defined in the following schedule.

Structure of seeds. Recognition of common agricultural seeds and their chief impurities. The germination of seeds of the Leguminosæ, Palmæ, and Gramineæ. Conditions necessary for the germination of seeds. Vitality of seeds. Methods for testing the purity and germinating capacity of seeds.

Buds of various kinds and their structure. Recognition of common trees by bud characters. Fruiting spurs. Pruning. Methods of grafting and budding. Propagation by means of layers and cuttings. The vegetative propagation of weeds.

The development of the shoot system: rhizomes, tubers, corms, and bulbs. Climbing stems. The development of the root system: root tubers and adventitious roots. Root range. The secondary thickening of woody stems and of fleshy roots as seen with a pocket lens.

The leaf: its structure and chief modifications.

The inflorescence.

The structure of the flower in the following families: Cucurbitaceæ, Malvaceæ, Leguminosæ, Palmæ, Compositæ, and Graminaceæ. Pollination. Development of the chief types of fruits. The distribution of fruits and seeds as illustrated by local weeds. The weed flora of arable and pasture land. The extermination of weeds.

The essential food materials of plants. Osmosis: plasmolysis and the effects of an excess of soluble salts on the plant. The conduction of water and of salts in solution through the plant: the disposal of the excess of water. The phenomena of wilting: conservation of water supply under dry conditions. The assimilation of carbon. Composition and properties of starch, sugar, fats, oils, and proteins. Tests for these substances in plant tissues and in feeding cakes. Storage of food and its utilization during the germination of seeds, and the sprouting of tubers and bulbs. Growth: the effects of temperature, light, and food supply on the rate of growth. Respiration.

HYGIENE SYLLABUS FOR JUNIORS.

Air and Ventilation.—The composition of air; simple methods of detecting oxygen, carbon dioxide and water vapour in air; quantity of fresh air required for each person; impurities in air; sewer gas; effect of occupants on air of rooms; overcrowding; purification of air, how effected; effects on air of various methods of warming and lighting; fresh air as food, bad air as poison; special importance of fresh air in connection with tuberculosis and other air-borne diseases; natural and artificial methods of ventilation.

Water.—Quantity of water required for each person in the tropics; sources of water supply, e.g., rain water, springs, wells, rivers, and upland surface waters; sources of impurities; hard and soft waters; methods of softening hard waters; action of soft waters on lead pipes; water as a carrier of disease; simple methods of purification.

Foods.—Classification of foods; nature, relative values and importance of the chief constituents of foods; various foods, e.g., meat, milk, bread, cheese, vegetables, fruits, cereals, fats, sugar, tea, coffee, cocoa, tinned foods; the outlines of the chemistry of digestion and absorption; excretion; overfeeding and underfeeding; unwholesome and unpunctual feeding; effects on foods of roasting, boiling, stewing, and baking; effects on rice of milling; varieties of rice; accessory food factors; diseases connected with foods; alcohol—its use and abuse in the tropics.

Drainage.—Removal of dry refuse; dry earth closets; flush systems; traps; influence on health of defective drains and dirty drains.

Personal Hygiene.—Breathing; rest and exercise; necessity for reasonable and regular exercise in the tropics; washing and bathing; use and action of soap; care of teeth; relative hygiene values of cotton, linen, wool, and silk clothing; change of clothing and bedding.

Simple facts concerning common infectious diseases in the tropics; mosquitoes, flies, and fleas as carriers of disease; value and use of common disinfectants, *e.g.*, Condy's fluid, bleaching powder, carbolic powders, and solutions, sulphur dioxide, formalin.

Burns and scalds; cuts; sprains and fractures; hæmorrhage; drowning; heatstroke; bites and stings.

PHYSIOLOGY AND HYGIENE SYLLABUS FOR SENIORS.

Questions will be set on the following schedule, and will involve a knowledge of Elementary Physics and Chemistry:—

A.

Outline of the structure of the Human Body.

Nature of protoplasm and protein.

Physiology of the Human Body.

(1) The digestive system.

Digestion and absorption, the structure and the care of the teeth.

(2) Excretion.

The kidneys, the structure of the skin.

(3) The respiratory system.

(4) The vascular system and the heart.

Healthy and unhealthy conditions of the blood.

(5) The outlines of the muscular and nervous systems.

B.

Air.—The composition of air; methods of detecting the various gases in air; impurities in air; methods of detecting impurities in air; trade processes which pollute air; elements of hygrometry and of climatology.

Ventilation.—Diffusion of gases; direction of air currents; quantity of fresh air required; natural and artificial ventilation; good and bad systems; methods of lighting rooms and houses, and their influence on ventilation; purification of air, how effected.

Water.—Domestic supply; quantity of water required for each person in the tropics; sources of potable water; methods of collection and distribution of water; sources of impurity; methods of detecting impurities; effects of insufficient or impure supply; methods of purification of water; filters; hard and soft waters; estimation of hardness; action of hard and soft water on lead pipes; simple methods of estimating the organic and inorganic substances dissolved in water; water-borne diseases, with special reference to the tropics.

Foods.—Classification of foods; the nature and importance of their chief constituents; proteins, carbohydrates, fats, salts; the chemistry of digestion and absorption; excretion; sound and unsound foods; causes and effects of unsound food; common adulterations and methods of detection; microscopic examination of foods; action of moulds and ferments on foods; fermentation; alcohol; alcoholic liquors; simple methods of estimating the chief constituents of foods; effects of milling on rice and other grains; accessory food factors.

Drainage.—Good and bad systems of domestic drainage in the tropics; traps; influence on health of bad systems; removal of domestic refuse; latrines and outline of methods of sewage disposal; simple anti-malarial drainage.

Personal Hygiene.—Rest and exercise; necessity for regular exercise in the tropics; respiration; washing and bathing; care of teeth; soaps; clothing material; microscopic examination of fibres; action of soaps, acids, and alkalis on fibres; the abuse of opium, alcohol, and tobacco.

Infection, Disinfection, &c.—Common disinfectants and antiseptics; their use and action; simple facts concerning common infectious diseases in the tropics, particularly malaria, anchylostomiasis, and tuberculosis.

Geological Features in relation to health; soils and subsoils; ground-air and ground-water; composition of ground-air; water and organic matter in soil.

First Aid Methods in connection with burns and scalds, cuts, sprains and fractures, hæmorrhage, drowning, heat-strokes, bites, and stings.

NEEDLEWORK.

Note.—Principals of girls' schools who propose to enter pupils for examination in sewing at the Junior or Senior School Certificate Examination in December are required to send in to the Inspectress of Needlework in January of the preceding year (*i.e.*, two years beforehand) a list of the names of such pupils.

The Inspectress of Needlework will pay visits (without notice) periodically for the purpose of reporting on the progress of these pupils, and the teacher's record must be ready for inspection along with the work of each pupil. On November 30 all the finished garments must be in the hands of the Inspectress of Needlework.

Candidates must bring with them to the Practical Examination a ruler, red and blue pencils, cotton, needles, pins, a thimble, scissors, and a tape measure; and to the question paper a ruler and a pencil.

NEEDLEWORK SYLLABUS FOR JUNIORS.

PRACTICAL EXAMINATION.

(1) *Dealing with raw edges* of calico and flannel: hemming; herring-boning; binding; applying false hems.

(2) *Joining materials*: top-sewing and felling (pillowcases and longcloth under-garments); running and felling (fine under-clothing); running and herring-boning (flannel shirts); running and binding (flannel outer garments); "French" seams (cotton outer garments).

(3) Tucking; gathering; buttonhole making; darning holes and thin places in stockings; patching holes in calico, print, and flannel garments (no seams to be involved, the work to be limited to the mending of holes in places where unpicking of the garments is not necessary).

(4) To make a chemise (showing gathers), a child's sleeping suit, and a child's frock (showing tucks). No candidate will be allowed to take the examination who has not completed these garments.

To know how to place the different parts of a pattern in the proper positions on the material; and to plan with a view to economy in cutting out.

NEEDLEWORK SYLLABUS FOR SENIORS

PRACTICAL EXAMINATION.

I. *Hand Sewing*.—As for Juniors (1), (2), and (3), also—

(4) Strengthening the ends of seams with gussets and tapes; patching holes under the arms in garments, and replacing torn corners of towels; darning rents in coats or woollen dresses, thin places and diagonal cuts in table linen; making whipped frills.

(5) Cutting out exercises: a chemise; a combination garment; yokes; sleeves; cuffs and collars for shirts; yokes and sleeves for nightgowns and frocks.

II. *Machine Work*.—(a) To use and keep in order a sewing machine.

(b) To cut from given patterns and put together a girl's frock, a boy's tunic suit, a woman's blouse and skirt.

WRITTEN EXAMINATION.

A knowledge of the comparative values of cotton, linen, and wool, as materials for clothing; the uses to which each is put; prices; approximate quantities required for common articles of dress or household linen.

SPECIAL SENIOR CERTIFICATE FOR CEYLON.

A special certificate will be awarded by the Cambridge Syndicate under conditions specially approved for Ceylon to those Senior students who, while not passing with credit in one of the subjects 5 to 15 (languages) in the foregoing syllabus, satisfy the requirements stated below.

The examination in each subject will be identical with that for the Cambridge Senior School Certificate, but the subjects will be arranged in the following groups (I. to IV.), and to obtain the certificate a candidate must pass in two of the three subjects in Group I., in the whole of Group II., and in two subjects in Group III. If a candidate does not satisfy the Examiners in one of the subjects 16 to 20 in Group III., he must pass in Arithmetic in addition to two of the subjects 4 (Geography), if not taken under Group I., 21, 22, and 23.

Girls can also pass this examination if they satisfy the above requirements in Groups I. and II., and pass in one subject in Group III., and in one of the three subjects—Art, Needlework, and Music—in Group IV., provided that every candidate passes in Arithmetic.

GROUP I.

- (a) Religious Knowledge (subject 1).
- (b) History (subject 3).
- (c) Geography (subject 4).

GROUP II.

- (d) English (subject 2).

GROUP III.

- (e) Mathematics (subject 16), viz. :—(i.) Arithmetic.
(ii.) Geometry.
(iii.) Algebra.
- (f) Additional Mathematics (subject 17).
- (g) Chemistry (subject 18).
- (h) Physics (subject 19).
- (i) Botany (subject 20).
- (j) Natural History of Animals (subject 21).
- (k) Geography (subject 4).
- (l) Agricultural Science (subject 22).
- (m) Physiology and Hygiene (subject 23).

GROUP IV.

- (n) Bookkeeping (subject 24).
- (o) Mensuration and Surveying (subject 25).
- (p) Shorthand (subject 26).
- (q) Art (subject 27).
- (r) Music (subject 28).
- (s) Needlework (subject 29).

Note.—The examination for this special certificate is intended for candidates who do not wish to take any other language besides English. It should be further noted that this special certificate may not at present entitle the holder to any special exemptions, which will be a matter for subsequent decision by the bodies granting such exemptions.

SPECIAL CONDITIONS FOR ADULT PRIVATE STUDENTS.

Applications from adult* private candidates for permission to take up the Examinations under the conditions set forth in these regulations, must be made on the prescribed form which should be forwarded with the candidate's birth certificate and record sheet from the school last attended, so as to reach the Director of Education not later than May 1, 1927.

Applications for entry forms from candidates who are allowed to take the examinations as private students should be made during the first week in June, and these entry forms must be forwarded to the Director of Education by June 30, 1927. Each entry form must be accompanied by—

- (1) Bank receipt for the fee (*vide* page 1) credited† to the account of the Director of Education in the Chartered Bank of India, &c., Colombo.
- (2) The Memorandum granting permission to enter for examination.

* For purposes of this examination, an adult candidate is one who has completed his 19th year on or before May 1, 1927. See also note * on page 2.

† Remittances to bank should accompany the form giving particulars of the payment. This form may be had on application to this Office.

EXEMPTIONS BY THE SENIOR SCHOOL CERTIFICATE EXAMINATION, 1927.

[The Syndicate do not hold themselves responsible for any error caused by changes in requirements with which they have not been made acquainted. Students are referred to the published regulations of the respective Institutions.]

A.—THE UNIVERSITY OF CAMBRIDGE: PREVIOUS EXAMINATION.

I.—Exemption from the whole of the previous examination is granted to candidates who have gained a certificate in the Senior School Certificate Examination and passed with credit *either* in five of the subjects 1–29, one of the five being Latin or Greek*; *or* in four of the subjects 1–29, including one at least from each of the Groups I., II., III., one of the four being Latin or Greek.*

II.—Exemption from the whole of the previous examination, with the exception of the papers in Latin, is granted to candidates who have gained a Senior School Certificate and passed with credit *either* in *five* subjects not including Latin or Greek *or* in *four* subjects not including Latin or Greek, but including one subject from each of the Groups I., II., III.

III.—Exemption from parts of the previous examination is granted to candidates who have gained a certificate in the Senior School Certificate Examination as follows:—

(1) † From Part I., if the candidate has passed with credit in Latin or Greek and in one other language (other than English).

(2) From Part II., if the candidate has passed with credit in one of the subjects 16–19.

(3) From Part III., if the candidate has passed with credit in English and in either Religious Knowledge or History.

For the purpose of all the above exemptions a Senior School Certificate may be taken to include any Supplementary Senior School Certificate which the candidate may obtain.

Students desirous of obtaining exemption from any part of the previous examination may, if they already hold the Certificate of the Syndicate, enter for those subjects alone that are required for the purpose.

B.—THE UNIVERSITY OF OXFORD.

The holder of a Senior School Certificate who, either in the same or in separate Examinations, has passed with credit in two of the languages included in Group II., of which either Latin or Greek must be one, and in two other subjects included in Groups I., II., III. is entitled to exemption from Responses.

C.—THE UNIVERSITY OF LONDON.

A Senior School Certificate entitles to exemption from the Matriculation Examination, if the student has at one and the same examination obtained a Certificate in the Examination as a whole and passed with credit in the following Subjects:—

(1) English.

(2) Mathematics (subject 16) and

(3) Three of the following:

(a) Latin, (b) Greek.

(c) French, (d) German, (e) Spanish, (f) Italian.

(g) History. †

(h) Geography.

(i) Two of the three following: Additional Mathematics I.; Additional Mathematics II. (a) *or* (b); Additional Mathematics III.

(j) Chemistry, (k) Physics, (l) Botany.

§(m) Sinhalese *or* Tamil *or* Sanskrit, *or* Pali.

provided that either Latin, or Chemistry, or Physics, or Botany is included, and *provided further* that one language other than English is included.

Candidates who desire to be informed if they have satisfied the conditions for exemption should apply to the General Secretary, Syndicate Buildings, Cambridge, stating the centre and index number and remitting a fee of 1 Shilling. Those applying during the Examination week will receive information on the publication of the Class Lists.

* Or, if the holder of the Certificate is a native of Asia or Africa and not of European descent, Arabic or Chinese or Persian or Sanskrit or Sinhalese or Tamil.

† Exemption from Part I. is granted to a candidate, who, being a native of Asia or Africa and not of European descent, has obtained a Senior School Certificate passing with credit in (a) English Composition and Literature, and (b) Latin or Arabic or Chinese or Persian or Sanskrit or Sinhalese or Tamil.

A native of Asia or Africa, not of European descent, who has obtained a Senior School Certificate, passing with credit in English Composition and Literature, is entitled to exemption from all the papers of Part I., with the exception of the papers in Arabic or Chinese or Sanskrit or Pali.

‡ English History *or* History of the British Empire *or* Modern European History *or* Roman History *or* Greek History.

§ Two of these languages will be accepted as two subjects for purposes of exemption, provided that one of them is Pali or Sanskrit.

CAMBRIDGE SCHOOL CERTIFICATE EXAMINATIONS, 1927.—CEYLON CENTRES.

TIME TABLE.

Except in Religious Knowledge for Seniors, and English Literature for Seniors and Juniors, no candidate may take two papers commencing at the same time.

N.B.—Students will not be allowed to bring any books, maps, manuscripts, &c., within the precincts of any building in use for these examinations. This rule will be rigidly insisted on.

| Friday, December 9. | Saturday, December 10. | Monday, December 12. | Tuesday, December 13. | Wednesday, December 14. | Thursday, December 15. | Friday, December 16. | Saturday, December 17. |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| 8-10 Practical Chemistry J | 8-9½ Object Drawing S* | 8-10½ Greek II. S | 8-11 (b) Shakespeare J (c) Lady of the Lake J (d) Anne Geierstein J (e) English Authors J | 8-10 { Arithmetic J Arithmetic S | 8-10 { Geometry J Geometry S | 8-10 Algebra S | 8-9½ Plant Drawing from Memory J |
| 9½-12½ Painting S | 8-10 Design J | Two papers may be taken; those taking one only must take it at 8. | 10-11½ { English History J British Empire J Roman History J | 10-11½ { I. Kings J Testa- ment His- tory J Acts J { Catechism, &c. J | 8-10½ Algebra J | 8-10 German J Spanish J Sinhalese I. J Tamil I. J German S Spanish S Italian S Sanskrit II. S Additional Mathemat- ics II. S | 10-12 Botany J Bookkeeping J† Botany I. S Bookkeeping S† |
| 8-10 Practical Physics J | 8-10 Mechanical Drawing S | 8-11 (c) Lyrical Ballads S or Anthology S (d) Bacon or Ruskin S (e) General Eng. Lit. S | 10-12 { English History S British Empire S European History S Roman History S Greek History S | 10-12 { Eng. Composi- tion S | 10-12 (Sinhalese II. S { Tamil II. S | 10-12½ Greek I. S | |
| 1-3 Practical Chemistry S | 12-1½ English Compo- sition J 12-2 Pali I. S { Gospel S Acts S I. Kings S or Old Testament History S { Epistles S† | 12½-3 Geography S | 1-2½ French I. S | 1-2½ Geography J | 1-2½ Shorthand S | 1½-2½ Memory Drawing J† | 1½-3½ Flat Drawing J |
| 1½-2½ Object Drawing J* | 1½-3½ { Needlwork (Prac.) J Music J Bookkeeping J† Agricultural Science I. S Botany II. S Gospel J | 2½-4½ { Exp. Science I. J Theoretical Chemistry J { Sanskrit I. S Agricultural Science II. S Music I. S History of Art and Architecture S | 1-3½ Dutch S { Pali II. S French II. S | 1-3½ { Figure Composition S Needlwork I. (Prac.) S | 1-2½ { Needlework II. S | 1½-3½ { Greek II. J Heat J Additional Mathematics III. S | 1½-3½ Physiology and Hygiene S { Theoretical Chemistry S |
| 1-3 Practical Physics S | 3-5 { Botany I. S Science I. S II. S | 3-5 { History of Art and Architecture S Additional Mathe- matics I. S | 3-4½ Perspective Drawing S | 3-5½ { Epistles S† Common Prayers S or Catechism, &c. S Exp. Science II. J Natural History J { Hygiene J | 1-3½ { Latin II. J Mensuration & Surveying S | 1½-3½ Experimental Science III (Prac.) J | 3½-5½ { Sound and Light J Sinhalese I. S { Tamil I. S |

* If at any centre the number of candidates entered for Object Drawing is larger than can be accommodated at one and the same time, the Presiding Examiner will be at liberty to fix some other time for certain of the candidates. Of this due notice will be given by the Presiding Examiner to the candidates concerned.
† Alternative papers are set in these subjects; candidates must take the paper on the day for which they enter for it in their forms of entry.