

THE SOUTH-EAST REGIONAL EXAMINATIONS BOARD

for the Certificate of Secondary Education

.....

***CERTIFICATE OF SECONDARY
EDUCATION EXAMINATIONS***

1966

REGULATIONS AND SYLLABUSES

.....

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Booklet of Regulations and Syllabuses, 1966, for the award of the Certificate of Secondary Education (post free) 6/-

Booklet of Statistics and Subject Reports, 1965, (available in the late autumn) (post free) 6/-

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Notes :—

(i) Annually, at the date of publication, six copies of the Board's *Regulations and Syllabuses* and two copies of *Subject Reports*, will be supplied by the Secretary to all Secondary Schools and Institutions of Further Education in the region, as well as to all Local Education Authorities in the region, as independent Schools which have indicated an intention to enter for the Board's examinations. All other requests for copies must be accompanied by the appropriate cash payment for the publication.

(ii) Attention is drawn to the changes which have taken place in the *Regulations and Syllabuses* since the publication of the previous edition, such changes being indicated by side rulings.

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EXAMINATIONS BOARD**

for the Certificate of Secondary Education

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PART I

GENERAL INFORMATION

CONSTITUTION AND ARTICLES OF ASSOCIATION

The Board is one of fourteen Regional Examining Bodies approved by the Secretary of State for Education and Science. It administers the examinations leading to the award of the Certificate of Secondary Education in the administrative Counties of Kent, Surrey and East Sussex; the County Boroughs of Brighton, Canterbury, Eastbourne and Hastings; and, for the provisional period 1965/67, the London Boroughs of Bexley, Bromley, Kingston upon Thames, Merton, Richmond upon Thames and Sutton.

The Council of the Board met for the first time on 8th May, 1963 and adopted a Constitution which received formal approval by the Secondary School Examinations Council on 25th November, 1963. The Certificates issued by the Board bear the signature of an officer of the Department of Education and Science, together with those of the Chairman and Secretary to the Board.

For administrative and legal reasons the Board applied to the Board of Trade for registration as a Company limited by guarantee, under the Companies Act, 1948, and received a Licence dated 19th February, 1965. (A copy of the Memorandum and Articles of Association is obtainable from the Secretary to the Board, price 1/-, post free 1/6).

INTERPRETATION OF REGULATIONS

The Board reserve to themselves the interpretation of their Regulations and Syllabuses.

MEMBERS OF COUNCIL 1965/66

CHAIRMAN: B. S. Braithwaite, Esq., M.A.

Nominated Members (21)

Seven teachers nominated by the National Union of Teachers:

F. J. Drake, Esq., B.Sc., Broadstairs, Kent.
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A. Baker, Esq., B.A., Portslade, Sussex.

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Two teachers nominated by the National Association of Schoolmasters:

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Two teachers nominated by the National Association of Head Teachers:

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E. P. Duggan, Esq., M.A., B.Sc., F.R.A.S., Kent.

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Miss G. O. Lack, M.A., Epsom, Surrey.
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H. G. Earnshaw, Esq., M.A., Eastbourne.
H. Bristow, Esq., Hastings.
R. Ratledge, Esq., B.A., Canterbury.

Ex-officio Members :

Seven Chief Education Officers of Local Education Authorities :

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A. M. Baird, Esq., B.A., Surrey.
B. S. Braithwaite, Esq., M.A., East Sussex.
W. G. Stone, Esq., M.A., Brighton.
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Miss M. Maplesden Noakes, M.B.E., Kent.

Chairman of the Examinations Committee :

D. R. Mather, Esq., M.A., Banstead, Surrey.

Two teacher representatives of Further Education Institutions :

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F. W. Price, Esq., B.Sc., Maidstone, Kent.

Two representatives of Industry and Commerce :

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W. J. Clarke, Esq., Area Organizer, Union of Shop,
Distributive and Allied Workers, Faversham, Kent.

Six other members :

Miss E. Foxworthy, B.Sc., Representative of the Independent
Schools.
R. S. Rothwell, Esq., B.A., Headmaster, Rye, Sussex.
A. Steward, Esq., M.Sc., Representative of the Colleges of
Education.

(Three vacancies)

The Honorary Treasurer to the Board :

J. L. Hampshire, Esq., F.S.A.A., F.I.M.T.A.

Five Non-Voting Members (Assessors)

*One representative of another Regional Examining Body
(Metropolitan Board) :*

C. A. Pyle, Esq., Bexley, Kent.

One H.M.I. nominated by the Department of Education and Science :

Miss N. K. Cornforth, H.M.I.

One Local Education Authority Inspector or Adviser :

E. H. Bland, Esq., B.Sc., Kent.

One representative of Youth Employment Service :

J. C. Watson, Esq., E. Sussex.

Representatives of the Department of Education and Science and the Schools Council :

D. L. Corder, Esq., and E. L. Britton, Esq.

(As at date of publication of these Regulations)

(N.B. A Working Party of the Board is now studying the whole question of teacher and L.E.A. representation on the Council and Committees and Panels of the Board. Modifications will be submitted to the Board of Trade and the Schools Council for approval, probably in the late autumn of 1965.)

CORRESPONDENCE

Correspondence and enquiries concerning examinations conducted by the Board should be addressed to :—

**The Secretary,
The South-East Regional Examinations Board,
Europa House,
7/9 Church Road,
TUNBRIDGE WELLS,
Kent.**

Telephone : Tunbridge Wells 20913/4.

All cheques, postal and money orders must be crossed and made payable to "The South-East Regional Examinations Board," and should be crossed "Not negotiable."

Correspondence cannot be conducted with individual candidates in attendance at schools and institutions which have been recognised as Centres.

Persons who require a ruling upon any Regulations or Syllabuses of the Board must apply to the Secretary *in writing*.

It is also to be noted that, subsequent to the examinations, *personal enquiries concerning the results of individual candidates will not be entertained at the Board's offices*. Under no circumstances will telephoned enquiries of this nature be considered.

When official evidence of a candidate's performance is required by an institution or employer a certifying letter will be sent to the person concerned by the Secretary to the Board on receipt of a written request. This must state the candidate's name and school, the date on which he was examined and the due fee of 3s. 0d. Certifying letters *will not* be supplied directly to candidates and if the original certificate is available a certifying letter will not normally be issued.

CALENDAR OF DATES, 1966

| | |
|--|------------------------|
| Centre Registration Forms for 1966 examinations must be obtained any time after | 1st September, 1965 |
| and must be lodged with the Secretary not later than | 31st October, 1965 |
| Entry Forms will be issued to Centres on Completed Entry Forms must be returned to the Secretary by | 14th February |
| All due fees must be paid between 1st and Oral and Practical examinations may be held between | 30th April |
| Written examinations will be held from | 1st March and 1st May* |
| | 9th to 27th May* |

(*These dates are subject to modification at any time up to 1st March, 1966.)

Late entries and additional subjects will be accepted only on payment of an additional fee of £1 and only between 15th February and 1st March.

After 1st March, no further entries will be accepted.

No late entries will be accepted which entail the setting of additional papers.

Results will be issued to schools and institutions as soon as may be possible after the examinations.

EXAMINATION TIMETABLES

The provisional time-table will be sent to Schools for consideration in June of the year preceding the examination: the official Timetable is expected to be published in September.

PART II

REGULATIONS FOR THE AWARD OF THE CERTIFICATE OF SECONDARY EDUCATION—1966

1. GENERAL

The examinations will take place in the South-East Region annually in May/June.

They will be subject examinations and the Certificate of Secondary Education will be awarded to candidates achieving Grades 1—4 in any subject, or in accordance with regulations issued at the time by the Department of Education and Science. Where a Certificate is issued, it will also record any Grade 5 awards.

Any statement that the C.S.E. is “an examination which everyone will pass” should be treated with reserve.

The Board, by constitution, may not undertake such examinations outside the South-East Region, but will take steps to ensure that their standards are comparable both within and without the Region.

The Certificates issued in due course after each series of examinations will record the name and date of birth of the candidate, the date of the examination, the subject(s) taken, and the grade obtained in each subject. Success in a subsequent examination will normally be recorded on a separate certificate issued after that examination.

A comprehensive certificate covering a candidate's successes in a number of examinations may be issued on application to the Secretary, to whom the original, separate certificates and the due fee of 5s. 0d. must be sent by registered post at the time of application.

A duplicate certificate may be supplied only with the consent of the Board, on payment of £3 0s. 0d., and only when satisfactory written evidence, in writing, has been provided that the original cannot be found.

2. ELIGIBILITY FOR ENTRY TO THE EXAMINATION

- (a) Candidates must be in attendance at schools recognised by the Board as approved centres for the examination and must be aged not less than 16 on 1st September in the year of their examination; or be in the final term of the fifth year of a five-year course of secondary education; or have completed such a course.

- (b) Where, for the time being, pupils are unable, because of the lack of secondary school facilities, to complete their fifth year except in an institution of further education, they may be entered by such institutions for the examination provided that they have completed, or are in the last term of, a five-year full-time course of secondary education taken partly in school and partly in an institution of further education.
- (c) Other candidates may be accepted provided that they are not less than seventeen years of age on the 1st September in the year of their examination.
- (d) The Board will not accept work in any subject or paper for which a candidate has not been correctly entered.
- (e) The Board reserve the right to decline any application for entry to their examinations.

3. METHOD OF ENTRY

Candidates must normally be entered by the school which they are attending and be examined at that school. The Head of the school shall be responsible to the Board for C.S.E. examinations held in the school and all correspondence concerning such examinations shall be conducted through him.

4. CLOSING DATE FOR THE RECEIPT OF ENTRIES

Entries for the examinations, correctly made on the Board's prescribed forms, must be received by the Secretary to the Board **not later than 14th February** of the year in which the examination is to be held. (See Calendar of Dates in Part I)

5. EXAMINATION FEES

Examination fees will be subject to review annually, but every effort will be made to avoid frequent changes.

In 1966 the fees will be :—

A. Entry fee (payable by all candidates and non-returnable) £1 0s. 0d.

AND

B. Subject fee, per subject £1 0s. 0d.

C. Late entries, per candidate £1 0s. 0d.

Notes :

- (a) Subject fees will be refunded in cases of withdrawal from examinations only under the following conditions :—
 - (i) If notice of withdrawal is received in writing by the Secretary before the closing date for entries ;
 - (ii) If an entry is cancelled between that date and the date of the examination for which the candidate is entered, on the grounds of illness, in which case a medical certificate must be submitted ;
 - (iii) On production of satisfactory evidence of changes in the private circumstances of a candidate which necessitate withdrawal, in which case all or part of the subject fees may be returned.

- (b) No refund of fees will be made in respect of absence from or withdrawal from only a part of the examination in a subject.
- (c) No fee may be carried to the credit of a candidate at a subsequent examination, nor transferred to the credit of another candidate.
- (d) No part of the basic entry fees (as distinct from subject fees) nor any additional late fees will be refunded.

6. EXAMINATION CENTRES

Application for registration of a school as an approved centre for the Board's examinations shall be made by 31st October on the official form provided. A Local Examinations Secretary, who may be the Head of the school or any other senior member of staff, must be nominated for each examination centre and shall be responsible to the Board for ensuring that the examinations are conducted in accordance with the relevant regulations. The consequential obligations are contained in Part III of these Regulations. The Board reserve the right to send a representative to an examination centre at any time to inspect the arrangements for their examinations and the manner in which they are conducted.

7. SUBJECTS OF EXAMINATIONS

(a) MODE 1 SYLLABUSES

The Board will offer external examinations on the Regional Mode 1 syllabuses printed in Parts IV and V of this booklet.

(b) MODE 2 SYLLABUSES

The Board will offer external examinations on Mode 2 syllabuses provided by a school or group of schools and approved by the Regional Subject Panels.

Schools will be expected to include a full statement of their aims and objectives, together with detailed syllabuses, when submitting applications. All such material must be clearly marked with the full name of the school submitting it, the subject(s) concerned, and whether the material is for consideration under Mode 2 or Mode 3 arrangements.

In the first instance applications will be referred to the appropriate Regional Subject Panel for comment and report to the Examinations Committee if necessary. To this end it is essential in order to prevent delay and misunderstanding, that schools shall :—

- (i) **prepare fifteen copies** of every proposed Mode 2 syllabus (and any supporting material) ;
- (ii) *forward these to the Secretary to the Board by 1st April of the year preceding that in which the candidates will be taking the examinations concerned.*

In considering the syllabuses submitted Subject Panels will not impose on any school particular views of what constitutes a suitable syllabus content. Panels do however have a duty to ensure that every proposed syllabus and scheme of assessment is adequate to prevent the relevant examination from becoming a "soft option." The candidates concerned must achieve an examination standard which the Board's Moderators can, from objective evidence, claim to be equivalent to that of candidates examined upon Mode 1 (Regional) syllabuses.

The Board will be prepared to set examinations for Mode 2 syllabuses along similar lines to those of the Regional (Mode 1) examination for the particular subject. Where appropriate these will involve course work, practical work and oral tests. This is necessary to ensure comparability of standards.

Subject Panels will therefore keep in mind the all-important principle of comparability when they are assessing syllabuses submitted under Mode 2, and they will if necessary consult the schools concerned in order to achieve this comparability. It will not however be practical to employ the same technique of validation of questions as will be applied to Mode 1 examinations.

(c) MODE 3 SYLLABUSES

The Board will also award certificates on the results of examinations set and marked internally by individual schools and based upon Mode 3 syllabuses devised by those schools, subject always to the examinations being assessed and moderated by the Board.

As in the case of Mode 2 syllabuses schools proposing examinations based upon Mode 3 syllabuses will be expected to include a full statement of their aims and objectives, together with certain detailed information required (see below) when submitting applications. All such material must be clearly marked with the full name of the school submitting it, the subject(s) concerned, and whether the material is for consideration under Mode 2 or Mode 3 arrangements.

In the first instance applications will be referred to the appropriate Regional Subject Panel for comment and report to the Examinations Committee, if necessary. To this end it is essential, in order to prevent delay and misunderstanding, that schools shall :

- (a) **prepare fifteen copies** of every proposed Mode 3 syllabus and its supporting material (see below) ; and
- (b) **forward the items to the Secretary to the Board by the dates stated below, in the year preceding that in which the candidates will be taking the examinations concerned.**

In submitting applications for approval of Mode 3 syllabuses the schools concerned shall provide :—

A. By 1st April :—

- (i) A statement of aims and objectives ;
- (ii) The proposed syllabus set out where possible in approximately the same form as that of the relevant Mode 1 (Regional) syllabus. If it is intended to omit any section contained in the Mode 1 (Regional) scheme, the reasons for the omission should be stated ;
- (iii) The proposed scheme of assessment of oral, practical and course work, and the special study, indicating the weightings to be allocated to each aspect of the examinations ;
- (iv) A specimen of the intended question paper

AND

B. By 30th November :—

- (v) The draft question paper ; *
- (vi) A detailed marking scheme for the relevant question paper(s), showing the weightings to be attached to written, oral, practical and course work and the special study respectively ;
- (vii) Details of the method of assessment of oral, practical and course work.

* N.B. In the interests of all concerned, before question papers devised by a school are worked by candidates it will be the duty of the Board's Moderators to comment to the school on any defects in technical standard (e.g., poor drafting, ambiguities, or rubrics which are obscure or imprecise). The Moderators will also indicate any risk that a paper may not enable Grade 1 quality candidates effectively to give evidence of their attainments; or would give insufficient chance for Grade V candidates to score a reasonable minimum of marks. The Board's Moderators cannot subsequently make allowances for technical defects when grading candidates, if their earlier comments have not led to modifications such as will provide objective evidence of comparability with other schools.

(d) In considering applications under Modes 2 and 3 Subject Panels will have regard to comparability of standards with those established under Mode 1 (Regional) syllabuses, and the Panels will endeavour to send their formal comments upon applications to the schools concerned by 1st July.

It is expected that differences of opinion will be settled by negotiation between the Subject Panels and the schools concerned. Panels may, however, comment for example that whilst certain of a school's proposals are interesting or novel, Panel members believe that no paper which could be set would extend the best candidates to a level of achievement which would provide the Moderators with evidence justifying the award of high gradings.

Every effort will be made to avoid outright rejection of any syllabus proposals under Modes 2 and 3. The Board anticipate for example that discussions on Mode 2 proposals may need to continue from 1st July through to a date *not later than 30th November*.

Settlement of differences of opinion on Mode 3 proposals may, subject to the school's own arrangements, be delayed until as late as *1st February*.

Should it still be found impossible, despite these safeguards, to resolve by negotiation a major difference of opinion between a Subject Panel and a school, the matter may be referred to the Examinations Committee of the Board, and, if necessary to the Council of the Board. In the last analysis schools have the right of appeal to the Schools Council.

(e) Candidates may be entered at the discretion of Head Teachers for any one or more subjects in which the Board offer examinations, under Modes 1 or 2 or 3 syllabuses.

8. SCHOOL ASSESSMENTS OF THOSE PARTS OF THE EXAMINATION NOT MARKED BY THE EXTERNAL EXAMINER

(a) General

The subjects which will be examined externally require the submission of assessments by schools in one form or another as an integral part of the examination.

With reference to Examinations Bulletin No. 1, Sections 75-78 and 89-94, the Board wish to stress the very real importance which they attach to teachers' assessments of Course Work. This they regard, in common with the authors of Examinations Bulletin No. 1, as one of the fundamental differences between C.S.E. examinations and any other form of existing external examinations for secondary school pupils. The Board consider teachers' assessments to be an integral part of the final information upon which their Moderators will grade the candidates' results.

A final assessment by the teacher is required for *every* child in *every* subject, based upon the Course Work of that pupil. By "Course Work" in this sense the Board mean *everything* done in the fifth and final year of study, that is to say classwork, homework, oral, practical, aural, special topic, personal study and so on.

The following notes are intended to assist those teachers who may be preparing such assessments for external moderation for the first time, by indicating the type of information which will be helpful to the Moderators whose duty it will be to accept or modify them.

In accordance with their own broad recommendations the Board will expect schools to grade candidates in each section of the examination, *not marked by the external examiner*, in an order of merit and under the five headings 1, 2, 3, 4, 5 and unclassified, or some similar, convenient groupings. (See Examinations Bulletin No. 1, page 124).

Whatever may prove to be the size of the group there are two "datum lines." The one is at Grade 1 which should only be awarded to a candidate who would be likely to have obtained a Pass in the Ordinary level General Certificate of Education examinations, had he followed an appropriate course; the other is at Grade 4 which is a standard appropriate to the "average" candidate.

The decision to base the common national standards on two points in the national ability scale requires the practical definition of these two points. In particular, the definition of a sixteen-year-old pupil of "average ability in the subject," who is to form the standard at Grade 4 (pass) has to be made by the teachers from their experience in schools, bearing in mind the following provisos:—

- (i) It is the *AVERAGE* of the *WHOLE ABILITY RANGE* of the *SIXTEEN-YEAR AGE GROUP*.
- (ii) The phrase "average pupil" denotes not one hypothetical pupil but a fairly *wide band* of pupils.

Since Grades 2 and 3 will fall into approximately two equal groups, there are accordingly four broad categories into which the schools' lists should fall. This takes for granted that schools will not enter candidates who, prior to the examination, are considered to be of lower ability than Grade 5.

(b) *Assessment of course work in the final year.*

Whether schools intend to enter 4 or 40 candidates their first task should be to grade them all. When large numbers are being considered a number will fall close to the borderline of these four categories, and some will be of approximately equal merit so that the school will need to carry out an assessment at regular intervals in the final year to assist in determining a considered, final order of merit. These assessments shall be recorded by such means as the Board may, from time to time, request.

At the time of making the final assessments, which must be lodged in the Board's offices *not later than 1st May*, the school should also place the candidates into an order of merit, i.e., candidates must be ranged in their appropriate grades *and also* in an order of merit. In this context schools must constantly bear in mind the term "average" as related to the whole population group of children of this age, *not merely* the average of any particular school. Such an "average" candidate may well appear to be somewhat above the average in non-selective schools but rather below the average in schools with a high proportion of "selected" pupils. When the results are finally published one would expect the schools' orders of merit to have been retained intact in the majority of cases. However, there may well have been a substantial shift upwards (or downwards) in the expected gradings, in consequence of moderation through the Region.

(c) *School assessment of oral and/or practical tests.*

The Board wish it to be clearly understood that it is its policy that oral and practical tests shall, unless in a particular examination the oral or practical test is the reference test, be assessed by the teachers in the candidates' own schools, the assessment record cards being signed by those teachers. Heads will be required to sign a comprehensive certificate confirming that the assessments have been properly made and the tests correctly carried out in accordance with the relevant instructions issued by the Board.

(d) *External advice on internal assessments.*

If a particular school should feel the need for independent advice upon its own assessments the Board will raise no objection to that school, at the discretion of the Head, inviting a specialist teacher from another school to check the assessments, always provided the decision to invite independent assessments shall rest with the Head.

9. DISQUALIFICATION (MALPRACTICES)

Invigilators shall report to the Board through their Head Teachers the name of any candidate suspected of using or attempting to use unfair means before or during the examination. If the Board are satisfied that a candidate has been guilty of dishonesty in any subject they will disqualify him in the entire examination. Furthermore, the Board will withdraw their certificate from any candidate, if, subsequent to the award, they are satisfied that it has been obtained by unfair means.

10. EXAMINATION SCRIPTS

Candidates should be reminded of the importance of legibility, tidiness and relevance in their answers.

On being lodged in the Board's Office after the examinations, all scripts, practical work, etc., shall become the property of the Board, who shall have absolute discretion in the matter of the return of any such material.

11. CERTIFICATES.

Certificates for all graded candidates will be prepared by the Office following the publication of results and will be despatched to the local examination secretaries for distribution. (It is hoped to complete the despatch of all certificates by 1st December each year).

Examination secretaries who wish to receive the certificates of their candidates by a certain date, e.g., Speech Day, must advise the Secretary, in writing, of that date by 31st August. No guarantee can be given that the certificates will be delivered by the required date but every effort will be made to do so.

12. RESULTS

The Board will, as soon as may be found possible after each series of examinations, communicate in confidence to the local examination secretary of every Centre presenting candidates the results obtained by those candidates.

These detailed results, which must not be communicated to the press or inserted in other publications (by reason of the confusion and misunderstandings which almost invariably result from such insertions) may be communicated to the candidates in advance of the issue of certificates.

Results will be expressed in the form of five Grades (1—5) of success and one final group of ungraded (U) results.

13. The attention of all concerned is drawn to the following publications:—

Fourth, Fifth and Seventh Reports of the Secondary School Examinations Council (H.M.S.O.).

Examinations Bulletins Nos. 1, 2, 3, 4 and 5 and such others as may be published at intervals concerning the C.S.E. (H.M.S.O.).

"The C.S.E.—a handbook for Moderators" (Collins).

PART III

THE CONDUCT OF THE EXAMINATION

The following responsibilities are accepted by the Head Teachers and Principals of schools or institutions recognised by the Board as Centres for the conduct of their examinations.

(a) Before an Examination

Local examination secretaries are responsible—

(i) For carefully checking the packets of papers in order to verify that there is a packet of papers for each subject offered at the Centre, and that the number of papers marked on the outside of each packet is not less than the total number required. (Normally a few extra papers will be included in each packet);

(ii) For the safe custody of the packets of examination papers;

(iii) For arranging that each candidate is seated four feet from any other candidate ; that the name and number of each candidate is placed in a conspicuous place on his desk ; and that the numbers run consecutively ;

(iv) For having a clock placed in such a position in the examination room as to be easily read by every candidate ;

(v) For providing a supply of ink, blotting paper and *thin* string and objects for drawing when required. Candidates attending at a Centre other than their own for oral or practical tests need not take examination stationery with them ; sufficient will be sent to Centres accommodating extra candidates to cover their requirements ;

(vi) For providing candidates with logarithmic and other tables. It is hoped that schools will, wherever possible, maintain special copies for use in the examinations. Where this is impossible it will be the responsibility of the local examinations secretaries to ensure that the copies in normal use are suitable in all respects for use by candidates in the examination room. The use of logarithmic tables and slide rules is permissible in all examinations unless specifically forbidden.

(b) *During an Examination.* Local examination secretaries must ensure :

(i) That the packets of examination papers are opened in the examination room in the presence of the candidates not more than ten minutes before the time appointed for beginning the written examination ;

(ii) That the daily Timetable is strictly adhered to. Head teachers may at their discretion arrange for candidates to take in the morning an examination which has been timetabled for the afternoon and vice versa, always provided a teacher shall be detailed to invigilate the candidates concerned during the midday meal period, to prevent contact with any other candidates taking the examination at the published time. No other variations are permitted, except in emergency, unless the written authority of the Secretary to the Board has been obtained. Any emergency must be reported to him by telephone or telegram ;

(iii) That all candidates who have been officially entered and are present receive the correct paper. Names of additional candidates, not correctly entered by the school, *must on no account be added at this stage* without the prior, written authority of the Secretary to the Board ;

(iv) That the absence of any candidate is shown on the Mark and Attendance Sheet ;

(v) That in the event of all candidates being absent, notification is sent without fail to the examiner concerned ;

(vi) That candidates do not introduce into the examination room any unauthorised material ;

(vii) That a candidate found improperly communicating in any way with another candidate during the examination session is immediately sent from the room and the facts reported at once to the Secretary to the Board ;

(viii) That any suspected or confirmed irregularity of any kind is reported as soon as possible to the Secretary to the Board ;

(ix) That there is always at least one invigilator in attendance, and another for every 40 candidates after the first 40 (in the practical examinations in Woodwork and in Metalwork the craft teacher is always to be present, in addition to the invigilator, and is to be responsible for the supply of tools and materials and the supervision of safety precautions) ;

(x) That each candidate is given an adequate supply of official answer paper before the commencement of each examination session ;

(xi) That candidates are instructed at the beginning of each session :—

1. To read carefully and comply with the instructions printed on the front of the question papers ;
2. That departure from the rubrics on the question papers will result in loss of marks ;
3. To write on both sides of the paper ;
4. To tie together, at the end of the examination session, all the answer sheets they have used (including every sheet containing any notes or rough work), taking care that all the answer sheets are in the correct order and that the thin string provided for this purpose is passed through the holes in the top left-hand corners of the sheets and fastened *loosely* so that the pages may be turned over easily ;
5. That all rough working must be done as it occurs on the page, and nowhere else ; that it must be crossed through with diagonal strokes to show that it need not be read by the examiner but it should **not** be rendered illegible ;

(xii) That no candidate leaves the examination room until half an hour has elapsed after the start of the written paper and that no candidate is admitted to the examination room later than half an hour after a paper has been given out. A candidate entering the examination room not more than thirty minutes after the start of the paper may, if there is reasonable excuse for his late arrival, be allowed extra time in which to complete it at the discretion of the invigilator ;

(xiii) That no candidate leaves the examination room temporarily during the session except when accompanied by an invigilator.

(c) *After an Examination.*

Local examination secretaries must ensure :—

(i) That immediately each session of the examination ends all the scripts are collected and placed in **numerical order** and then checked against the Entry Form ;

(ii) That the scripts (still in numerical order) are then packed in separate parcels with a completed and signed attendance record which **must be folded** as indicated and **not wrapped round** the scripts ;

(iii) That the envelopes provided are used, with the official label marked with the number of the paper and the required details, and that they are despatched by post at the earliest possible moment ;

(iv) *That scripts are posted on the day on which they have been written ;*

(v) That at the close of the examination the remaining stock of all unused stationery is reported to the offices of the Board. Such stationery should be carefully stored for use at the next C.S.E. examination.

(vi) That candidates do *not* remove any Course Work from school before the end of term. Whilst teachers in the schools will themselves assess Course Work the Board's Moderators may require to inspect this work in certain schools. (As however it is only possible to determine which schools shall be visited *after* the receipt of all the teachers' assessments and all the marked scripts, all Course Work must remain available until the end of the school term).

PART IV

SUBJECTS OF THE EXAMINATION

The syllabuses for the following subjects are given in Part V of these Regulations.

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PART V

PROVISIONAL REGIONAL (Mode 1) SYLLABUSES FOR C.S.E. EXAMINATION—1966

The Board offer the following syllabuses as a guide to schools in the Region and to indicate the ground to be covered in each subject. Notes are prepared for the guidance of teachers in certain subjects but the Board have no wish to determine how a subject shall be presented to the pupils nor to impose a pattern on the teaching.

The provisional syllabuses have been prepared by Subject Panels which each consist of a maximum of 13 practising teachers representing all authorities in the Region.* The Panels have incorporated into many of the syllabuses the comments which schools were good enough to send in following the issue of initial, draft syllabuses early in 1964. All syllabuses will be reviewed for 1967 and at intervals thereafter in the light of comments forwarded by schools using the Board's examinations. (See Appendix for possible changes or additions in the range of examinations for 1967.)

*See Note at top of page 4.

For publication Autumn 1965

BRITISH HISTORY 1901—1961

S. REED BRETT, M.A.

There is a growing emphasis on recent history among teachers and examiners alike. This book for fifth formers gives a lucid account of the great changes of this century—political, social and economic—with a necessary emphasis on foreign affairs and the development of the Commonwealth. It is illustrated with numerous photographs and maps.

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TIMETABLE OF EXAMINATIONS, 1966

| DATE | | MORNING | AFTERNOON |
|-----------|----------|---|--|
| Monday | 9th May | Arithmetic, Paper I 1½ hrs. Spanish, Part I (Aural) 1½ hrs. German, Part I (Aural) 1½ hrs. English, Part II 2 hrs. | Religious Knowledge, Part A 2 hrs. |
| Tuesday | 10th May | | Rural Studies, Sect. I 40 mins. Sect. II 1 hr. 20 mins. |
| Wednesday | 11th May | Science, Paper I (Common Core) 1½ hrs. | English, Part III 2 hrs. |
| Thursday | 12th May | Mathematics, Part I 1½ hrs. | Chemistry, Paper II 2 hrs. Embroidery 1½ hrs. |
| Friday | 13th May | Commerce 2 hrs. | Mathematics, Part III (Topics) 1½ hrs. |
| Monday | 16th May | Arithmetic, Paper II 1½ hrs. Shorthand/Typewriting 2 hrs. | Woodwork, Theory Paper 2 hrs. |
| Tuesday | 17th May | Mathematics, Part II 1½ hrs. | Geography, Paper I 2 hrs. |
| Wednesday | 18th May | Geography, Paper II (Parts A and B) 2 hrs. | German, Part 2 (Written) 1¼ hrs. Spanish, Part 2 (Written) 1¼ hrs. Typewriting 2 hrs. |
| Thursday | 19th May | History, Main Paper 110 mins. | History, General Paper 40 mins. |
| Friday | 20th May | Physics, Paper II 2 hrs. Commercial Arithmetic 2 hrs. | French, Part 2 (Written) 1¼ hrs. |
| Monday | 23rd May | Biology, Paper II 2 hrs. | Audio Typewriting 2 hrs. |
| Tuesday | 24th May | Office Accounts 2 hrs. | Technical Drawing, Paper I 2 hrs. Metalwork, Theory Paper 2 hrs. Fashion, Theory Paper 1½ hrs. |
| Wednesday | 25th May | French, Part I (Aural) 1½ hrs. Housecraft, Paper I 1½ hrs. | Music (History and Appreciation) 2 hrs. |
| Thursday | 26th May | Civics, Paper I 45 mins. Paper II 90 mins. | General Science, Paper II 2 hrs. Office Practice 2 hrs. |
| Friday | 27th May | Technical Drawing, Paper II 2 hrs. The Science of Living, Paper II 2 hrs. | Engineering Science, Paper II 2 hrs. Religious Knowledge, Part B 1½ hrs. |

NOTES

- (i) **Housecraft.** Practical examinations (2½ hours) should commence on soon after 1st April, 1966.
- (ii) **Metalwork and Woodwork.** Practical examinations (4 hours) should be held during the period 25th April—6th May, 1966.
- (iii) During the week 2nd—6th May, 1966, the following examinations should be arranged:—
- Art (Practicals)** (5 hours).
 - Science (Practicals)** (1 hour to 2 hours).
 - Embroidery Practical** (3¼ hours).
 - Fashion Practical** (3 hours).
 - Music (Aural)** (45 minutes).
- (iv) Other Practical examinations and Oral tests in Languages should start by 1st March and end by 29th April, according to school facilities and other factors.

OUR COMMUNITY AT WORK

John Hanson, *Head of the History Department,
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Market. 6 Entertainment.

GREEN SET C: 7 The World Overseas. 8 Foreign
Affairs. 9 Labour Relations.

BLUE SET D: 10 Youth Employment. 11 Home Life
and Community. 12 Outlook and
Attitudes.



Longmans

ART AND CRAFTS

(A practical examination of 5 hrs.)

General information

The Board will consider any 2- or 3-dimensional work which is creative and original in character and which is sufficiently permanent to be assessed. Studies carried out in such subjects as the Appreciation of Art and Techniques, and the History of Art and Design may also be presented. Teachers will be free to develop their own courses and the aim of the examination will be to find out what the pupils do well, rather than to test work for which they have little aptitude or inclination. The examiners will also look for evidence of visual and tactile awareness, sensitivity to the natures and qualities of materials, and the ability to express feeling.

Form of examination

(a) The examination in Art and Crafts will consist of (a) an assessment of course-work, together with (b) an assessment of a piece of work carried out under formal examination conditions. Of the total marks possible for this subject, 60% will be allocated to the course-work and 40% will be allocated to the formal examination work.

The aim of the examination is to judge the emotive content of the candidate's work and his/her feeling for the chosen medium, as well as to test manual dexterity.

(b) In the formal examination the candidate will be required to interpret ONE theme from a given list, using any medium or combination of media of his own choice. For guidance, the Board offer the following list of categories of work which they will be prepared to receive in interpretation of the chosen theme:—

| | |
|---------------------------|--|
| Basketry | Needlecraft |
| Bookcrafts | Pictorial Composition (in various media) |
| Drawing | Pottery |
| Dress Design | Puppetry |
| Fabric Printing | Screen Printing |
| Lettering and Calligraphy | Weaving (including Dyeing and Spinning) |
| Lino Printing | |
| Modelling and Sculpture | |

This list is not intended to be exclusive ; teachers are free to suggest to the Board further categories of creative work which may be suitable for examination under the heading of "Art and Crafts," bearing in mind the conditions laid down in paragraph 1 above, and the necessity of giving adequate notice of alternative proposals.

The scale of the work should be limited by the time and the materials available.

(c) The formal examination will operate under the following conditions:—

- (i) Test papers will be issued to the candidates a minimum of 14 days before the date of the examination ;
The two weeks before the examination may be used to work out ideas ;
- (ii) Any sketches and notes made may be taken into the examination room, but these *must* be sent to the examiners with the examination piece ;

- (iii) All necessary preparation of materials, glazing, etc., may be done outside the time set for the examination ;
- (iv) A reasonable time will be allowed for the piece of work to be carried through under examination conditions, but unfinished work may be completed by the allowance of extra time before submission to the examiners ;
- (v) The decision on allowance of extra time shall be at the discretion of the Head of the school concerned. When the examination piece is sent in the Board will require a statement from the Head setting out the amount of extra time allowed and the reasons for granting it.

Course-work

The Board will look for a well-balanced selection of course-work but will not specify the inclusion of any particular areas of study. The inclusion or exclusion of any branch of Art and Crafts is thus left to the judgment of the candidate. The list given in paragraph 3 may be taken as a guide. Study carried out in the Appreciation of Art and Techniques, and in the History of Art and Design, may also be included as an element in the collection of course-work, if the candidate so wishes.

Course-work is defined as work done by a candidate in school or elsewhere over a minimum period of one school year prior to the examination.

Note : Appreciation and History of Art and Crafts.

The preparation of a Syllabus in the Appreciation and History of Art and Crafts is under consideration for examination in 1967.

CIVICS

(One paper in two parts of 45 minutes and 90 minutes each)

The Board consider that the purpose of Civics teaching is to provide training in active citizenship. It is hoped, therefore, that boys and girls preparing for this examination will gain as much practical experience as possible.

The aims are threefold :—

- (1) to encourage the pupil to take an active interest in the immediate community and in local, national and international affairs ;
- (2) to urge the acceptance of responsibilities to the community with a clear understanding of the rights and duties involved ;
- (3) to fit the pupil (in due course) to make a positive contribution to the life of the community.

The syllabus is offered for general guidance as to the ground to be covered. It is not intended as a teaching syllabus and teachers should feel free to plan the approach in any way which seems to them appropriate. However, the Practical Study is considered an essential part of the syllabus, giving concrete expression to its aims.

The syllabus includes :—

Local Government

Organisation and finance

Rights and responsibilities of the Citizen

Central Government

The role of the Sovereign
How Parliament works
Political parties
Election and work of M.Ps.
The Cabinet
Government Departments and the Civil Service
National Finance

Law and Justice

The functions and work of law courts and the police forces
Rights of the citizen

Social Institutions

The Welfare State and Social Services available to the citizen
(e.g., Consumer Councils, Citizen Advice Bureaux, Marriage
Guidance Councils, etc.)
Trade Unions today
The Press, radio and television

World Citizenship

U.N.O. and allied organisations
The British Commonwealth
Different forms of government

The form of examination

The examination will consist of

- (a) a written test, and
- (b) evidence of practical study.

Part I, Part II and the Practical Study will be weighted 2 : 2 : 1 in the assessment of a candidate's grade.

(a) The written examination

Part I will contain 40 short, objective-type questions on facts and their application. The questions will be concerned with the whole syllabus, graded according to difficulty but equally weighted. (Time allowed 45 minutes.)

Part II will involve writing four essay-type answers from an ample choice. Questions will require a knowledge of fact, some application of knowledge to show understanding, and some marshalling of thought. All will be equally weighted. (Time allowed 90 minutes).

[N.B.—There will be a short interval between Part I and Part II to allow for the collection of papers or a short break.]

(b) Evidence of practical study

Each candidate will be required to produce evidence of his own individual investigation into a topic chosen by him and approved by his teacher. This should involve him in some aspect of the life of the community and bring him into contact with the people and problems he is likely to meet as a future citizen.

The Practical Study should follow a coherent scheme and may consist of written accounts, maps, models, diagrams, literature, photographs, recordings, and expressions of opinion, presented in an orderly and attractive manner in book, folder or other suitable form.

A successful study will mean a lot of work carried out beyond the confines of the classroom. Teachers may wish to lay down lines of investigation, recommend sources of information and arrange visits, but it is expected that the approach should be individual and original.

The Practical Study should be carried out during the first and/or second term of the final year, and schools will be required to present their own assessments of the work *by the end of the Easter term*. In addition to the teachers' assessments of course work referred to above, Civics teachers are asked to assess separately the Practical Study of each candidate. These assessments, which will be subject to moderation, should be made on the following basis :

- (i) **Material** . . . (coverage, order, depth, coherence, appropriateness)
- (ii) **Evidence of initiative and originality** . . . (approach, visits, interviews)
- (iii) **Presentation** . . . (neatness, arrangement, attractiveness, variety)

In making their assessments teachers should weight sections in the following manner : (i) 2, (ii) 1, (iii) 1.

The following are suggested topics . . .

- a. The local Fire Brigade.
- b. Youth Service.
- c. Regional industrial development.
- d. Oxfam.
- e. The integration of minorities into the community.
- f. Local elections
- g. Civil Defence.
- h. Comparative citizenship.
- i. Care of the aged in our community.

Candidates are at liberty to choose any other suitable topic.

A list of the titles of Practical Studies attempted by the candidates should be forwarded with the teachers' assessments, for the attention of the Chief Moderator.

COMMERCIAL SUBJECTS

(One paper of 2 hrs.)

General Information

Seven separate subjects are offered :—

- (i) Commerce
- (ii) Shorthand-Typewriting
- (iii) Audio-Typewriting
- (iv) Typewriting
- (v) Office Accounts
- (vi) Office Practice
- (vii) Commercial Arithmetic

Candidates may enter for one or more subject(s). Each subject for which a candidate receives a grading will be entered on any Certificate awarded.

The subjects offered are intended to relate to the kind of work candidates are doing in schools or may wish to be examined in before leaving school, or which is being done in offices generally.

The importance of clear, concise English in all written and oral commercial examinations is stressed.

In all commercial subjects any reference books (but not text books) *used regularly* during the teaching course should be available (under supervision) for the use of candidates during the examinations.

Form of examination

In each subject candidates will be required to satisfy the Examiner in two sections :—

- (a) a formal examination (part of which may be oral) ; and
- (b) a school assessment of practical work done during the final year of the course.

Assessment of course work

Candidates will be required to keep folders of work attempted during the final year of the course, to provide evidence on which an assessment can be made. It is emphasised that the work to be kept for the assessment *must* be a fair sample of the candidates' general work throughout the year. All work for which a specific "mark" has been given during the year must be included in the folder.

The assessment has an integral and important part to play in the final award of a grading. The object of the assessment is to take into account the candidates' attitude and work during the final year of the course and class teachers are regarded as best equipped to make such assessments in the first instance.

Practical experience of machines and office routines

Candidates having had practical experience of, and being efficient with, office machines used in duplicating, copying, calculating, filing and indexing systems, telephone switchboard, reception of visitors, etc., are entitled to have this recognised as part of their course work, and included in their assessment.

Syllabuses

(i) COMMERCE

Commerce is a subject which contributes to a sound general education for people living in an industrialised and commercial society ; it is *not* necessarily connected with other commercial subjects such as shorthand and typewriting. Whilst some schools offering commercial courses will wish to include Commerce as one of the subjects, other schools without commercial courses will sometimes include Commerce as a general subject on the ground that pupils ought to have some acquaintance with the

organisation of the society in which they live, and some help with the problem of how to live in that society.

A large number of questions will be set in each examination paper, covering all the sections below. Candidates will be required to answer about one third of them (e.g. 16 questions set, 6 to be answered).

The examination will include a short oral discussion on both the syllabus and the project undertaken for the assessment (see below). The discussion will be mainly on the project, but not entirely. It will not be limited to question and answer; indeed the examiner will seek to encourage the candidate in conversation.

Of the total marks obtainable for the examination, 80% of them will be given for the written part, and 20% for the oral.

Topics to be prepared shall include:—

- (a) A general outline of how the economic system operates: production and distribution of goods.
- (b) The chain from manufacturer, through wholesaler, distributor and middleman, retailer, and consumer: their relationships, including the study of retail outlets such as direct manufacturer-consumer trading, co-operatives, multiple shops, mail-order houses, etc.
- (c) Conditions of trading: cash and credit: household budgeting: buying economically: consumer protection: resale price maintenance: guarantees and their validity: advertising: other inducements to trading.
- (d) Transport and delivery: importance of easy, rapid and safe transit of goods and people: air, sea, land, waterways, and the purpose for which each is suitable.
- (e) Money and its functions: legal tender: methods of payment: banks and their functions and services to the individual and commercial life generally.
- (f) Insurance: principles, common risks, Lloyds.
- (g) The Post Office and its services.
- (h) Ownership of business: sole trader, partnerships, co-operatives, private and public companies: limited liability: the Stock Exchange: methods of investment.

In this examination schools *must* include in their assessments a piece of individual work carried out by the candidate, of which the results have been recorded and are available for inspection. Considerable latitude is permitted for individual teachers to guide candidates according to their interests and the circumstances of the district in which the school is situated. The following are offered only as suggestions:—

A survey of local shopping habits: comparison of several local shopping centres in pricing, services, standards: visits to local businesses or offices or factories: local trades unionism: survey of local services available and their satisfactoriness: housing: a plan to furnish a home on a given sum of money with a given salary or wage each week or month: analysis of all the deductions made from salaries and wages and their purposes: outline of income tax or rating systems as they relate to the individual worker,

the shop, or the business : survey of employment possibilities locally or further afield or in a given town or district : comparison of opportunities for employment generally or in a specific area, trade, occupation : study of local health services.

SHORTHAND AND TYPEWRITING—GENERAL INFORMATION

A shorthand-typist needs to be able to transcribe direct on to the typewriter from shorthand notes. Passing examinations in shorthand and typewriting as separate subjects is no indication of the ability to do this. An examination in shorthand alone is *not* offered ; only shorthand with typewriting.

On the other hand there are several kinds of typist, for example shorthand-typist, audio-typist, copy-typist, advanced typist capable of any kind of typewritten work.

Of the three examinations offered involving typewriting, candidates may if they wish take more than one at the same time (e.g. the candidate who wishes to be both a shorthand-typist and an audio-typist).

Erasers and other means of correction are permitted in typewriting examinations (except in the Accuracy/Speed Test q.v.) but obvious or badly made corrections will be penalised.

Notes on ACCURACY/SPEED TEST

All candidates taking an examination involving typewriting will be required to take an accuracy/speed test and the speed determined as a result of this test will be entered on any Certificate awarded.

The typewriting ACCURACY TEST is separate from the individual examinations involving typewriting. Only one Accuracy Test has to be taken, however many examinations involving typewriting are included. If a candidate fails to reach 25 w.p.m. she fails the whole examination. *25 w.p.m. is regarded by the Panel as the absolute minimum speed for any candidate to be called a "typist".*

With regard to the entries to be shewn on Certificates awarded to candidates offering Shorthand and Typewriting, the Department of Education and Science have yet to decide whether gradings, in the form approved for C.S.E. results, are to be shewn as well as speeds achieved, or only the latter.

The accuracy/speed test will be of sufficient length to represent ten minutes' typing at 60 wpm (five strokes = one word). Candidates will be required to type *only as much as they can* in the ten minutes allowed and the speed will be calculated according to the amount typed after errors have been taken into consideration. *It is important that teachers should emphasise that candidates are not expected to complete the test—some may not even complete half of it. A smaller amount typed accurately will carry more weight than a larger amount full of inaccuracies.*

The amounts that must be typed accurately for speeds of 25, 30, 35, 40, 45, 50, 55 and 60 words per minute will be indicated on the test paper. A minimum of 25 words per minute will be required.

In calculating the typing speed, two errors per 100 words will be allowed. All other errors will entail a deduction of ten (10) from the total number of words typed.

An accuracy/speed test may be taken only in conjunction with one of the typewriting examinations below: the test cannot be taken on its own as a separate examination.

(ii) SHORTHAND-TYPEWRITING

Any generally accepted system of shorthand may be offered. Minimum speeds of 50 wpm shorthand and 25 wpm typewriting will be required.

Adequate practice should be given to candidates in typing direct from shorthand notes, in the taking of carbon copies, and in appropriate envelope display.

The same kind of examination, but with different material, will be given at 50, 60, 70, 80 and (if application is made to the Board at the time of submitting entries) over 80 words per minute shorthand. A candidate may enter for one or two of these speeds, if desired, and the highest speed in which the candidate satisfies the examiner will be entered on any Certificate awarded.

The candidate will be handed a letter, or two letters, on headed notepaper. A reply, or replies, will be dictated which will require the candidate to consult the letter(s) for information. One reply may refer to a "Report" or other document, which will then be dictated. One reply may be given in note form and the candidate required to expand the notes into a short letter.

Not more than three dictations will be given, with a pause between each. The total amount of material dictated will be approximately five minutes at the speed selected. It will be relatively simple at the slower speeds, but will increase in difficulty and require a wider vocabulary at the higher speeds.

The candidate will be supplied with a folder containing various sizes of paper, envelopes, forms, carbons, and required to select the appropriate paper and envelopes, and make the necessary carbon copies, without assistance. The candidate will be expected to be able to transcribe at a rate of 15 wpm, and to arrange the completed work in the folder as it would be placed on an employer's desk "ready for signature and posting."

The appearance of longhand in the shorthand notes will entail deduction of marks.

(iii) AUDIO-TYPEWRITING

As the shorthand-typewriting examination will test specifically the candidate's ability as a shorthand-typist, so the audio-typewriting examination will test the ability to use a dictation machine. Dictated material at 80 w.p.m. is deemed a reasonable speed.

The candidate will be required to type *not less than four items* of varying length and difficulty from a dictation machine, and to operate the machine without any teacher assistance. The dictated matter may include letters, reports, documents, literary matter, such as might be met with in an office. Instructions to the typist as to carbon copies and relevant matters may be included.

At least two different voices must be used, but these may be members of the staff of the school (if desired) and one of them may be the teacher of the subject.

The candidate will be supplied with a folder containing various sizes of paper, envelopes, forms, carbons, and required to select the appropriate paper and envelopes, and make the necessary carbon copies, without assistance, and to arrange the completed work in the folder as it would be placed on an employer's desk "ready for signature and posting."

(iv) TYPEWRITING

The Typewriting examination will consist of two sections in one paper. Section 1 will be compulsory and all candidates must satisfy the examiner in this section. Those who satisfy in *only* this section will be graded V or IV according to the marks obtained.

Section 2 will be optional and will contain material from which the candidate will be invited to select that which he/she feels able to type. Provided that the examiner is satisfied with Section 1, marks obtained in Section 2 will be added to those obtained in Section 1, and the award of Grades III, II and I will be determined by the total marks obtained.

The candidate will be supplied with a folder containing various sizes of paper, envelopes, forms, carbons, and required to select the appropriate material required for each question.

Section 1 (compulsory for all candidates)

The ability to type simple letters, invoices and tabular matter from material supplied, part of which will be in manuscript. Simple corrections may be included.

Section 2 (optional)

The ability to type any matter of reasonable difficulty, i.e., any matter of such a difficulty as is likely to be encountered during the first six months of work. The questions will vary in character and difficulty: e.g., badly written manuscript (with or without corrections): tabulation: correct letters or literary material: notices involving display: legal documents, specifications, balance sheets of a simple kind.

A knowledge of abbreviations, correction signs and business terms will be expected.

Matter in this Section will be relatively short to enable several aspects of typewriting to be tested.

Notes on ACCOUNTS AND CLERICAL EXAMINATIONS

Formal examinations in double-entry book-keeping involving the writing-up of books are not encouraged and no such examination will be offered. It is preferred that candidates should have a practical knowledge of, and the ability to use, the actual forms used in offices. The traditional form of book-keeping examination requiring the writing-up of books will be considered only if a school requests it and submits its own syllabus under Modes 2 or 3. Even then the teaching must emphasise the use of the actual documents.

(v) OFFICE ACCOUNTS

The candidate will be required to have a practical knowledge of, and the ability to use and deal with, the actual documents used in offices covering pricing, invoicing, debit/credit notes, monthly statements, trade and cash discounts, petty cash books, order forms, banking as it relates to the day-to-day work of an office.

Candidates will be expected to have a knowledge of the principles of accounts and an understanding of the relationship between assets, liabilities and capital. They will *not* be required to write up books, but *will* be expected to be able to read account books and to know where in the books the information contained in the documents mentioned in the preceding paragraph is to be found.

In addition a basic knowledge of time sheets, P.A.Y.E., National Insurance and wage packaging will be required.

(vi) OFFICE PRACTICE

The examination will consist of two sections :—

Section 1

Twelve questions will be set, the candidate being required to answer seven.

- (a) Use of the telephone—all services used in offices : ability to record messages accurately and concisely.
- (b) Incoming Post—how to deal with it, control, sorting, use of reference numbers, departmental numbers, poste restante, box numbers.
- (c) Outgoing Post—how to deal with it, envelope addressing, enclosures, inland postal services (including costs, express and special delivery), railway services for posting, recorded delivery and registration, business reply system, s.a.e., post office methods of collection, keeping a postage book, posting and stamping machines.
- (d) Remittances by post—various methods and services.
- (e) Petty cash books—ability to keep one from petty cash chits—Imprest and other systems.
- (f) Banking—simple banking arrangements and documents.
- (g) Filing—knowledge of basic methods and classifications, simple filing systems.
- (h) Indexing—methods, how to index, rules on names.
- (j) Duplicating and copying processes and machines.
- (k) Keeping records—necessity of, methods of.
- (l) Knowledge of the more general business terms and reference books.

Section 2

An oral examination which will be taken by the class teacher, or a teacher from another school, or someone from a local business house (provided that such person satisfies the Panel as to capability of taking an oral examination). This will deal with aspects of the syllabus difficult to test in written answers, such as reception, interviewing, and the everyday problems that arise in an office.

The marks awarded for this examination will be on the basis of 70% for Section 1 and 30% for Section 2.

(vii) COMMERCIAL ARITHMETIC

The examination will test the candidate's ability to deal speedily and accurately with everyday office calculations and problems. The candidate

will be expected to attempt all the questions set, which may involve any of the following :—

(a) Vertical and horizontal additions and subtractions and the general application of the four rules, in money, weights and measures.

(b) A good grasp and understanding of decimal and vulgar fractions and percentages, the relationships between them, and, in particular, the ability to interchange them. Finding percentages or fractions of quantities; increasing and decreasing by percentages and fractions; expressing quantities as percentages and fractions of other quantities; application of percentages and fractions to prices, discounts and commissions.

(c) Decimalisation of money and the ability to use this in problems. Simple ratio and proportion.

(d) Costing and invoice calculations. Costing may include the use of the formula: $\text{Factory cost} = \text{raw materials cost} + \text{labour charges} + \text{overheads}$. Invoice calculations may include cash and trade discounts, allowances, packing and carriage charges.

(e) Simple and compound interest. Averages. Measures of Surface (rectangle, triangle, circle). Measures of volume (cube, cylinder).

(f) Elementary acquaintance with business statistics; ability to read information and draw conclusions from simple graphs of business statistics; ability to make such graphs from information provided. Bar graphs, divided bar graphs, circle graphs and line graphs may be used or required. They will be simple and straightforward, but the candidate will be expected to know the different kinds of graphs by name.

(g) A knowledge of the metric system and foreign currencies; the ability to give rough equivalents of money and measures in American and continental systems.

(h) Candidates will be required to show *ALL their working in their examination answer books*. They should therefore be encouraged to do this throughout the course work so that it becomes a "natural" thing to do in the examination.

ENGLISH

(Two papers of 2 hours each)

General introduction

The object of the examination is to assess the candidate's achievement in English as a whole, i.e., to obtain evidence of his ability to comprehend and communicate in the language in both the written and oral media and to show evidence of having read and appreciated literature suited to his age and ability.

The examination will be divided into three parts:—

PART I. Oral examination.

PART II. (Written)

Reading and reasoning;
arrangement of ideas;
original writing.

PART III. (Written and Course work)

Knowledge and appreciation of literature.

The proportion of marks to be allocated to each part will be in the ratio 3 : 4 : 3.

Details of syllabus and examination

PART I. *Oral examination*—Assessment will be based on the school's estimate of the candidate's ability in Oral English, together with the mark gained in an interview, which will take the following form :—

- A. A passage to be read aloud by the candidate, who will first be given sufficient time to read the passage silently.
- B. Spontaneous conversation, with an interviewer, arising from the passage and/or the candidate's interests and/or books read in course work. The interview will be as informal as possible to encourage the candidate to speak in his natural voice and as freely as possible; the use of memorised material should be discouraged.

No time limit is set for the interview except that it should be long enough to give the candidate full opportunity to show his ability.

The interviews will be conducted by practising teachers and will be recorded on tape to permit moderation.

(Reading passages, interview instructions and assessment forms will be issued to all schools offering candidates, by 21st February.)

Regional variations in accent and dialect will be accepted provided that they do not interfere with the ability to communicate. Subject matter, accuracy of expression, range of vocabulary and clarity and fluency of diction are the criteria for assessment both in the interview and by the school.

Standard forms will be provided for assessment of candidates' ability in Oral English. Assessment should be divided into two parts :—

- (a) All oral work during the fifth year.
- (b) Interviews.

For marking purposes the school's assessment and the interview will be of equal value.

The Oral Examination will be taken by all candidates, except those suffering from severe speech defects and other handicaps which affect speech. For exemption each handicapped candidate must have a Certificate signed by the Headmaster or Headmistress.

N.B. Some specimen tape recordings and commentaries are available, on loan, and some Questions and Answers about the Oral English test are also available, in note form, both being obtainable upon request to the Secretary to the Board.

PART II. A written examination of two hours will test the candidate's ability in :—

- (a) Reading and reasoning;
- (b) Arrangement of ideas;
- (c) Original writing based on candidate's own impressions, ideas, or interpretation of material.

(a) *Reading and reasoning*

This will usually be based on a passage or passages of modern prose which may include articles from newspapers or magazines or advertisements as well as extracts from books. Candidates may be asked to reproduce the ideas contained in the passage, to identify the main points in an argument, to demonstrate or refute an argument, to interpret factual information, to discriminate between fact and assertion, to compare the ideas or the approach of two passages. One section may call for the candidate's own comment on the ideas or the treatment of the ideas or for the candidate to write a letter arising from the material contained in the passage.

(b) *Arrangement of ideas*

The emphasis here will be on the clear statement or exposition of ideas or on explanation. Possible topics will include letters conveying specific information, descriptions of processes or familiar objects, reports on work to be done or already carried out, reports of events or meetings, minutes, explanations of the use of equipment and machinery or the playing of a game. Candidates may also be asked to use the information provided in notes or as answers to a questionnaire as the basis for a connected paragraph, or to redraft a badly composed paragraph or set of instructions.

(c) *Original writing*

A choice of topics will be offered, including description, narrative, dialogue. A picture or a short passage of prose or verse may be used as a starting-point for composition. Candidates may also be asked to express their own feelings about a scene or situation or to re-create an experience. The writing in this section should spring from individual experience, imagination, sensibility or emotion.

PART III. Knowledge and appreciation of English literature.
Assessment will be based on:—

- (a) Written examination;
- (b) Special Studies in literature.

(a) *Written examination*

This will be of two hours' duration. The candidate will be required to answer four questions. One question, based on a choice of passages of verse unseen, will be compulsory. Candidates will also be required to answer three questions on set books. A knowledge of at least two books chosen from the list below will be necessary. Candidates are not obliged to choose two books from the same category but may do so if they wish.
Set books for 1966:—

| | |
|----------------|---|
| Adventure | "The Colditz Story" (P. R. Reid), Hodder and Stoughton, 10/6d. (or paper-backed editions, published at 3/6d.) |
| | "Appointment with Venus" (Jerrard Tickell), Hodder and Stoughton, 3/6d. |
| Animal Stories | "Seal Morning" (Farre), Hutchinson (Grey Arrow), 2/6d. |
| | "The Bafut Beagles" (Gerald Durrell), Penguin, 3/6d. |

- Classics "David Copperfield as a Boy" (Dickens), Dent—Kings Treasuries of Literature, 3/3d.
"Jane Eyre" (Charlotte Bronte), Penguin, 3/6d.
- Drama "Macbeth" (any suitable edition of the text will be accepted).
"Androcles and the Lion" (not Preface), (Shaw), Longmans, 4/3d.
- Short Stories "Aspects of the Short Story" (ed. E. L. Black and J. P. Parry), John V. Murray, 5/6d.
"Off Beat," Chatto and Windus (Beaver Books), 6/0d.
(Half the number of books will be changed every two years.)

Verse Unseen

A choice of two passages of verse will be given. These passages will be followed by questions to test understanding of the poet's meaning and the candidate's sensitivity to the use of words and the expression of feeling in poetry.

Set Books

Questions will be set on each book. In each category an additional question involving a knowledge of both books will be set. There will be no context questions.

(b) Special Studies in literature

Each candidate will keep a record of the books he has read during the year and show his knowledge and appreciation of at least FOUR books by writing a passage of a minimum length of 200 words on each book.

Any work which shows understanding of the book and personal reaction to it will be accepted.

Special Studies in literature should be regarded as normal school work done either in class or at home. Teachers are free to give guidance on the choice of books according to the candidates' interest and to indicate ways of approach.

A record of books read, and written work based on them, should be kept in a normal school exercise book or folder.

The aim is to encourage a candidate to read books considered to be well worth reading. When assessing course work teachers should take into account the number, the length and kind of books chosen, and the quality of the candidate's work and depth of understanding shown rather than time spent on correcting and rewriting the work.

Teachers will assess their candidates' Special Studies in literature. These assessments should be made on the normal C.S.E. scale of gradings 1—5 and should accompany the teachers' overall assessments of the work done in English (Course Work) by their candidates. The two assessments must be sent to the Board's office *by 1st May*.

A reading list drawn up by the Subject Panel will be issued as a guide to the kind of books which teachers have found suitable for general reading. Set books must not be offered as part of the course work.

The examination in literature (PART III(a)) will carry two-thirds of the marks and Course work (PART III(b)) one-third of the marks.

GEOGRAPHY

(Two papers of 2 hours each)

General aims.

As the C.S.E. examination is to be regarded as the culmination of five years' study, the course in Geography should aim to give the candidate a working knowledge of the world in which he or she lives; it should lay particular stress on local environment. The course should enable the candidate to read a newspaper with understanding and appreciate and enjoy the landscape. It should be based on the pupil's observations and should leave room for experiments in examination technique.

While candidates should have a general knowledge of world geography, it should not be necessary for them to cover the whole world on a regional basis. The Board hope that the syllabus will allow teachers to select topics for detailed study.

There will be an examination of techniques and not only of facts learned by rote or assimilated from secondary sources. The use of techniques will be an integral part of the examination. Photographic interpretation, map key interpretation, comprehension questions on given geographical descriptions, understanding of graphs, climate figures and other statistics are some of the types of techniques which may be used.

General considerations underlying the syllabus.

It is only for reasons of clarity that the syllabus has been prepared on a topic approach. In the examination questions will be framed to allow for differences in methods of teaching the subject, e.g., regional or topical.

Credit will be given for relevant, up-to-date information, sketch maps, diagrams and specific examples.

The O.S. map reading question will be optional but a knowledge of maps will be necessary as some questions will be based on them. The understanding of atlas maps is as important as the understanding of O.S. maps. Map reading should be a compulsory part of a candidate's course.

It would be helpful for every candidate to participate in fieldwork expeditions in both urban and rural settings during the five-year course.

PAPER I.

British Isles.

The study of the British Isles should be related to people.

The following should be studied:—

1. **Location** : position, size, continental shelf, setting in relation to Europe and the rest of the world.

2. **Physical division** : into Highland and Lowland Britain.
3. **Climatic variation** : the four quadrants and factors such as:— wind, North Atlantic Drift, altitude, latitude, and distance from the sea.
4. **Main industries** : coal, iron and steel, textiles, chemicals, tinplate, electrical engineering, cars and aeroplanes, oil refining, building materials, atomic power, hydro-electric power, thermal power, public utilities, consumer goods and trading estates.
5. **Farming** : Pastoral — dairy and stock, mixed and arable ; and Specialised — market gardening, hops, fruit.
Fishing : Inshore, deep sea, mid- and distant-water fishing (trawl, line, drift and seine).
6. **Population distribution** and types of settlement, e.g., resorts, packet stations, nodal points, regional service centres, university, ecclesiastical, castle and defensive, and new towns.
7. **Communications** : methods used, motorways, importance of distributive trades in our economy.
8. **Trade** : Exports, imports, ports.

The optional O.S. Map reading question will be based on the Seventh Series One inch or the Provisional Edition, Two and a half inch, O.S. maps, printed as official examination extracts (approx. 15" x 12").

Candidates will not be expected to draw cross sections or work out gradients, though they may be required to comment on given cross sections and asked to assess the relative merits of the varied gradients of alternative routes shown on the map.

Candidates will be expected to have a working knowledge of the following aspects of map work:—

1. Scale and direction (measuring distances, giving specific directions according to the 16 points of the compass).
2. The National Grid to six-figure references.
3. Conventional O.S. map symbols for the one inch and two and a half inch maps.
4. Identification of major relief features, e.g., escarpment, dry valley, spur, ridge, gap, col, plateau and different types of slope.
5. Identification of different types of settlement, e.g., gap town, spring line settlement, nucleated and linear settlements.
6. Interpretation of communications in relation to relief and other local factors.
7. Activities of man on the map sheet, e.g., presence of farms, factories, and mineral workings so as to give some indication of the human geography of the region both past and present.

South East England.

The question will be of a general nature suitable for schools throughout the area covered by the S.E. Regional Examinations Board. Basic principles to be tested are as follows:—

1. **Relief and Drainage** : candidates should know something of the geology and topographical features of the S.E. Region.

2. **Human Geography and land use**: it is important for candidates to know how the people in their area earn their living, and the reasons for the main occupations.
3. **Communications** within the local region and with the continent, London, and other parts of the British Isles.
4. **Settlement**: origin of, and reasons for development of, main towns and villages within the locality in relation to: water supply, land use and functions.

N.B. For the purposes of the Geography examinations of this Board "South-East England" is defined as the Downs, Weald, Hampshire Basin and London.

PAPER II.

Part A

1. General knowledge of world geography will be tested as follows:—
 - (a) A world map question (Equal area projection) in which candidates will be required to know the names of the continents and oceans, to identify important countries, principal rivers, mountain ranges, cities and other major geographical features or facts. Reasoning ability will also be tested.
 - (b) A series of short-answer questions.
2. Candidates may be tested in their ability to use such material as: travel brochures as sources of reference, comprehend geographical descriptions, use map keys and interpret maps, draw diagrams and sketch maps, comment on graphs or tables of statistics; use an atlas map to measure distances, state latitude and longitude, plot and describe routes; describe and interpret photographs and draw sketches from photographs.

Part B

Each candidate shall choose TWO of the following sections. (In future years, twelve months prior to the examination, the Board will require schools to submit a form showing approximately how many candidates they propose to enter for each section.)

Section I: Literary Geography.

ONE book will be chosen by candidates or teachers from a given list of THREE. The book is to be studied for its geographical content; it is essential that the teacher does not study it as for an English Literature examination. The books in the list have been chosen as having some literary as well as geographical value. The list of books will not change every year. Two of the titles will be altered each year, thus allowing schools to use the same book for up to two consecutive years. Teachers will be required to state their choice of book one year before the examination so that papers may be prepared.

1966:—

- | | | |
|-------------------------------|---------------|---------|
| (a) The Land God gave to Cain | Hammond Innes | Fontana |
| (b) A Town Like Alice | Nevil Shute | Pan |
| (c) The Kon Tiki Expedition | Thor Heyerdal | Penguin |

Section 2 : Physical Geography.

(With particular emphasis on the ways in which features affect man).

1. The main types of rock and the differences between them :
sedimentary—including organic rocks (especially coal and limestone) ;
igneous—volcanic and plutonic ;
metamorphic.
2. Important land forms and topographical features : folding, faulting, rift valleys, horsts, volcanoes, plains, plateaux, granite scenery, the scenery of limestone and chalk country.
3. The three stages in the development of rivers in so far as they affect man, e.g., communications, navigability, availability of agricultural land, hydro-electric power, irrigation and drainage, settlement sites.
4. Erosion and deposition : weathering, river erosion, formation of deltas, the work of rain, frost, wind and sun, glaciation and its effects upon topography.
5. The coastline : hard and soft rocks, differential erosion, sand and shingle spits, harbours, fiords and rias, effects on the life of people.

Section 3 : Human Geography of contrasting areas.

A study of the human geography of contrasting selected areas with particular reference to the ways in which human activities have been affected by the local geographical environment. The human activities should include a study of agriculture, industry, transport, communications, trade and distribution of population.

Candidates should study ONE of the following pairs:—

- | | |
|--------------------------|---|
| (a) West Africa | The Republic of South Africa and South West Africa. |
| (b) Canada West of 100°W | The Great Lakes Region. |
| (c) Iberia | The Rhine Basin. |

The listed regions may be varied in future years. Questions will not be confined to the "compare and contrast" type. A map defining the regions is available on request.

Section 4 : Major natural regions.

A study of characteristics of climate and vegetation, related to societies of indigenous peoples and present-day developments in the following regions:—

- (a) Tundra
- (b) Coniferous forest
- (c) Deciduous forest
- (d) Cool temperate grasslands
- (e) Mediterranean
- (f) Warm temperate grasslands
- (g) Hot desert
- (h) Monsoon
- (i) Savana
- (j) Equatorial forest

The questions will not demand a knowledge of all regions listed.

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Section 5 : Commodities.

A study of factors such as world distribution, temperature, rainfall or water requirements, climatic hazards (frost, hail, hurricanes, etc.), soil, aspect, drainage, activities and way of life of the producers, in so far as they relate to the following :—

| | |
|----------------------------------|------------------------|
| Maize, Rice, Wheat, | Rubber, Cotton, Wool, |
| Cocoa, Coffee, Tea, | Tin, Copper, Bauxite, |
| Sugar cane, Vines, Citrus fruit, | Iron ore, Mineral oil. |
| Vegetable oils, Soft wood, | |

Studies should be related to environment and for this purpose attention is drawn to sample study work and the pamphlets produced by the Commonwealth Institute.

Section 6 : Meteorology.

1. The atmosphere: air pressure, density, movement, land and sea breezes, planetary winds, wind direction and force (Met. Office and Beaufort Scales).
2. Cloud types: dealing with upper, middle and lower.
3. Weather phenomena: Temperature—Fahrenheit and Centigrade (where necessary conversion tables will be provided); precipitation—causes of rain, three types of rain (convectonal or thunderstorm, orographic or relief, cyclonic or depression), Dew, Frost, Fog, Mist, Humidity.
4. Meteorological instruments: their use and function: barometer, maximum and minimum thermometer, wet and dry bulb thermometers, rain gauge, weather vane; siting and setting up of a weather station.
5. Major weather systems and associated weather: anticyclones, depressions, three types of front (warm, cold and occluded).
6. Introduction to weather maps and construction of simple weather maps from given data (isotherms, isobars and isohyets).
7. Interpreting a simple weather map and preparing of elementary forecasts.

Section 7 : Special Topic.

EITHER

- (a) Fieldwork note books containing some observations made in the field, a fair copy of the work to include such items as: sketch maps, landscape sketches, survey data and written observations. These should be based on:—Communication studies, Farm studies, Transects, or a study of an aspect of physical geography, e.g., work of a river.

OR

- (b) Project work which should include:—maps, diagrams, drawings and illustrations; in addition models could be submitted.

OR

- (c) Library studies of
 - (i) a selected country or countries.
 - (ii) an aspect of economic and/or human geography.

OR

(d) Local Geology.

The Special Topic should not exceed 2,000 words; where applicable a list of references (books and places) should be given.

Subjects for the project and library studies should be approved by the Head of the school who should check that submitted work does not duplicate that of the other chosen Section. The Special Topic will be marked and assessed in accordance with instructions issued by the Board.

Form of examination

PAPER I. (To carry half of the total marks).

Candidates will be expected to show evidence of having studied the British Isles, including Eire. They will be expected to show a more detailed knowledge of their own locality and of South East England, to be defined as: Downs and Weald, Hampshire Basin and London.

The paper will comprise:—

Part A (This will carry 20% of the total examination marks).

1. An outline map question in which candidates complete the key using information marked on the map. The question will be designed to test factual knowledge and reasoning ability. (5% of total examination marks.)
2. A series of short-answer questions of graded difficulty. (15% of total examination marks.)

Part B (This will carry 30% of the total examination marks).

Candidates will be required to attempt any **THREE** of the longer-answer questions in Part B which will include questions on British Isles in general, S.E. England, and an optional O.S. map reading question.

PAPER II. (To carry half of the total marks).

The paper will comprise:—

Part A (This will carry 20% of the total examination marks).

1. A World map question in which candidates complete the key using information marked on the map. The question will be designed to test factual knowledge and reasoning ability. (5% of total examination marks).
2. Short-answer questions to test the candidates' general knowledge of:—
 - (a) **Physical Geography:** including mathematical geography (latitude, longitude, latitude and distance, longitude and time); landscape (rocks and weathering); climate — with particular reference to natural regions.

- (b) **Human Geography**: farming, fishing, mining, power, communications, industry and major settlements. (15% of total examination marks.)

Part B (This will carry 30% of the total examination marks).

This will consist of a number of Sections. Prior to the examination candidates will opt to be examined on TWO of these Sections. The sections will consist of two parts—short-answer questions (5% of total marks) and a longer question (10% of total marks). The Sections offered for the 1966 examinations are:—

1. Literary Geography
2. Physical Geography
3. Human Geography of contrasting regions
4. Major Natural Regions
5. Commodities
6. Meteorology
7. Special Topic. This will be an alternative to one of the Sections in Paper II; there will be a reduction of forty minutes in the Paper II examination time for candidates who choose to submit a Special Topic.

HISTORY

(One paper of 110 minutes, one paper of 40 minutes)

General introduction

The examination will consist of three parts:—

1. Main Paper—Choice of period (Approximately 60% of total marks).
2. General Paper (Approximately 20%).
3. Personal Topic (Approximately 20%).

There will be two papers, which will be divided as follows:—

(a) General Paper (40 minutes).

(b) Choice of period—Main Paper (110 minutes).

1. *Main Paper*. Candidates will be required to answer questions from the period of their choice as follows:—

PAPER A British History 55 B.C.–1066

PAPER B British History 1066–1485

PAPER C British History 1485–1745

PAPER D British History 1745–Present Day, with social and economic bias

PAPER E Modern European, Commonwealth, and Modern World History

2. *General Paper.* Candidates will be required to give short answers to questions ranging from Roman history to the present day. Answers should reflect a general knowledge expected from the average pupil who has followed a 5-year course of secondary education.

3. *Personal Topic.* Candidates will be required to submit a personal study on a topic, which may be chosen by the pupil or taken from the submitted list. This can be done in book or file form; typescript will be acceptable. Models and other apparatus may also be submitted. The topic will be assessed for originality, material used and presentation. Comment on sources should be encouraged and for this credit will be given. The topic will be marked internally with external moderation.

N.B. Notes, for the guidance of teachers, concerning the Personal Topic are obtainable on request to the Secretary of the Board.

Suggested Topics

| | |
|------------------------------------|--|
| A history of flying | A history of Kent/Eastern Sussex/Surrey |
| Dress from 1800 to the present day | A history of cricket |
| Castles in South East England | The Romans in Britain |
| Food through the ages | Dress in Tudor or Stuart times |
| The development of the motor car | Five Kings of England |
| Four famous women | A history of ships |
| The Cinque Ports | The development of telling the time. |
| Nursing through the ages | Dolls through the ages |
| Arms and armour in the Middle Ages | Queens of England |
| The First World War | Drake's voyage round the world |
| Life in pre-historic times | Homes through the ages |
| Explorers of Africa | The history of the railway |
| | Costume from the Conquest to the present day |

Form of examination

Each Main Paper will be printed in three sections. Candidates will be required to answer :—

1. **FIVE** questions on the period, requiring very short answers. There will be a choice of questions.
2. **THREE** questions in about 60 minutes from a selection of map questions, questions based on a given illustration, questions based upon a quotation or extracts and "Part" questions.
3. **TWO** questions in about 40 minutes from a wide selection of essay-type questions.

Syllabuses

PAPER A. BRITISH HISTORY. 55 B.C.–1066

1. Some considerations of settlements and hill forts, ancient monuments, trackways, trade and barter, religion.

2. Some reference to background of the Roman Empire. What excavations in this country, particularly in S.E., have revealed. Julius Caesar. The Roman Legion and the Conquest. Agricola. Roads, towns and villas. Religions in Roman Britain. Farming and industry. Roman Londinium. Background of barbarian invasions and the "Saxones." Effects of occupation.
3. Origin of the Saxon Folk. Anglo/Saxon seaman and warrior. The Kingdoms, particular reference to S.E. The early settlement. Moots and the Witan. Reference to excavations of this period, e.g., Sutton Hoo. Place Names. Folk Lore.
4. Celtic saints and Roman missionaries. Results of the Synod of Whitby. Glebeland and Tythe. Trial by Ordeal. Northumbrian monasteries and the Venerable Bede. Some consideration of Anglo/Saxon poetry and riddles.
5. Origins of the Vikings. The Viking Longship and Voyages. Runes and Sagas. The Northmen in France and in N.E. England. Viking Place Names.
6. Alfred the Great. Wedmore and Danelaw. Alfred's Laws and Scholarship. The Anglo/Saxon Chronicle.
7. Edward Elder and Ethelfleda. Athelstan Glorious and Brunanburgh. Dunstan. Ethelred Unredy. Peace and prosperity under Canute. Trade and Towns.
8. Social life before the Conquest. Normandy. Earl Godwin and the Norman Party. Westminster Abbey. Events leading to the Battle of Hastings.

PAPER B. BRITISH HISTORY. 1066-1485

1. The origin of the Normans and their way of life. The Norman Conquest—Norman law and government—Norman Churches and Castles—methods of war—leisure pursuits.
2. The development of Feudal Society. Government and customs—the manor and its organisation—farming methods—chivalry and heraldry.
3. Church and State. Lanfranc—Anselm—Becket and Henry II—John and the Pope—monasteries—Friars.
4. The Crusades. Islamic background—the Turks—a retrospect leading to more detail about the 3rd Crusade—results of the Crusades.
5. Development of Parliament. The Great Council—King John and the Charter—Henry III and Simon de Montfort—Edward I and the Model Parliament—14th Century developments.
6. Relations with Wales, Scotland and Ireland, especially in the reigns of Edward I and Edward III.
7. England and France. Loss of lands after Henry II's reign—100 years war—Edward III's victories and treaty—changes in methods of war—Henry V and Agincourt—Joan of Arc—effects of war.
8. Decline of Feudalism. Emancipation and money rents—the Black Death and its effects—the Peasants' Revolt.
9. Towns and Trade. The development of civic rights and freedoms—merchant and craft guilds—architecture, markets and fairs—the wool trade — trading companies — medieval trade routes — travel and transport.

10. Lancastrians and Yorkists. The deposition of Richard II—the War of the Roses—the accession of Henry Tudor.
11. New movements and ideas. Chaucer and Wyclif—Italian artists and scholars—fall of Constantinople—printing—the compass—Portuguese exploration.

PAPER C. BRITISH HISTORY. 1485–1745

1. End of Middle Ages: beginnings of “modern” history.
2. Renaissance in Italy, N. Europe, and England.
3. Voyages of Discovery. England’s emergence as a naval and commercial power. Great sailors. Trading companies, Navigation Laws, Colonisation.
4. England becomes a strong “Nation State,” under the Tudors.
5. Reformation: causes and effects. Church of England, Bible. Puritans and Catholics. Clarendon Code. Emergence of religious toleration.
6. Social and economic aspects, enclosures, decline of guilds, Tudor woollen industry, new industries, pauperism, Statute of Apprentices, early scientific and industrial inventions.
7. Homes, dress, amusements, education, food, throughout the period.
8. Privy Council, Justices of the Peace, Court of Star Chamber, Tudor House of Commons, Constitutional struggle of 17th century. Interregnum. Restoration. Glorious Revolution. Party rivalry. Cabinet system and prime ministership.
9. Foreign affairs with particular reference to France, Spain and Netherlands.
10. Relations with Scotland and Ireland, the Jacobites.
11. Prominent political characters, e.g., Henry VII, Wolsey, Thomas Cromwell, Burghley, Mary Queen of Scots, Elizabeth, James I, Laud, Oliver Cromwell, Shaftesbury, Marlborough, Walpole.
12. Literature and the arts, e.g., More, Johnson, Shakespeare, Raleigh, the diarists, essayists, composers, Wren, Hogarth, Johnson.

PAPER D. BRITISH HISTORY. 1745–Present Day, with social and economic bias

1. The change from the Domestic to Factory systems—the effects of overseas competition—the growth of public utility industries—growth of new industries—chemicals and artificial fibres—automation.
2. Enclosure and new farming methods—fluctuations in agriculture during the 19th and 20th centuries—overseas competition.
3. Development of communications by land, sea and air, and their social and economic effects. Effects of mass media.
4. Free Trade and Protection—the growth of overseas trade—20th century trade fluctuations.
5. Poor Law Reform—factory and public health legislation—Welfare State—improvements in medicine—development of local government—Parliamentary representation—education—the state of the prisons—the abolition of slavery.
6. Trade Unions and Friendly Societies—the Co-operative Movement—emancipation of women.

7. Life in Victorian England—home life—religion—literature—architecture—costume.
8. Great statesmen, e.g., Pitt (The Younger)—Peel—Palmerston—Disraeli—Gladstone—Lloyd-George—Churchill—Attlee.
9. Liberal Reforms, early 20th century—Social and economic effects of the World Wars—Growth of the Labour Party.

PAPER E. MODERN EUROPEAN, COMMONWEALTH AND MODERN WORLD HISTORY

(Questions will be grouped under 2 main headings, (a) Modern European; (b) Commonwealth and Modern World. Candidates may answer questions from either (a) or (b) or both)

Note : A general basis of selection has been to consider problems of the present as illustrated by events of the past.

1. Origin and development of self-governing Dominions—evolution from British Empire to British Commonwealth of Nations.
2. Africa. 19th Century Scramble for Africa—emergent independent countries—the wind of change.
3. U.S.A. Birth of the U.S.A.—19th century expansion—influence of the Frontier—Civil War—Lincoln—20th century growth—development into a World Power—Wilson—Roosevelt—Truman—Kennedy—Pan American relations—importance of Monroe Doctrine.
4. 19th Century Nationalism—France from 1789—unification of Italy—unification of Germany.
5. 1914-1918 War. Background—effects, political, social, economic.
6. Russia—before 1914—communist revolution—causes, results—Lenin—Stalin—Kruschev.
7. The Far East. China—at beginning of 20th century—Sun-Yat-Sen—Chiang-Kai-Shek—Communist Revolution—Mao-Tse-Tung. Japan—in 1900—rapid modernisation—results of war—today.
8. The Rise of Dictatorships in Europe.
9. 1939-1945 War. Background—effects, social, political and economic.
10. Britain and Europe since 1945.
11. The Middle East. Background of position today—Israel and her neighbours.
12. International Co-operation. League of Nations—United Nations Organisation—Present day alliances.
13. Impact on mankind and World affairs of development of the following: International Red Cross—Medicine—World population—Communication and travel—pneumatic tyre—internal combustion engine — industrial organisation — mass production (Ford) — automation—atomic science—space travel.

HOUSECRAFT

General introduction :

The syllabus has been drafted upon the assumption that the following aspects of the subject will have been studied :—

1. Basic cookery skills and the serving of meals.
2. Basic laundrywork. The care of personal clothes and household articles.

3. Basic housewifery.
4. Simple nutrition.

and that costing, hygiene and science will have been taught incidentally.

The following two courses are offered for examination in the final year :—

Course A Homemaking

Course B Cook and Hostess

The choice of course and subsequent examination will depend on the facilities in the Housecraft Room, and the interests of the candidates in any one year.

One further course is under consideration, namely Housecraft for boys.

HOMEMAKING SYLLABUS

1. Preparation and serving of simple well balanced meals, including the use of present-day commodities.
2. Choice, care and use of equipment in the home.
3. Planning the work in the home, including laundrywork, in the light of present patterns of family living.
4. Simple budgeting, including some knowledge of hire purchase.
5. Safety in the home—with special reference to the young and old.
6. Simple first aid and home nursing.
7. Good grooming.
8. Repairs in the home—e.g., electrical repairs, fitting of washers on taps, etc.

COOK AND HOSTESS SYLLABUS

1. Being a good hostess, including—Invitations ;
Flower arrangements ;
Table setting.
2. Meals for all occasions and circumstances, including the intelligent use of present-day commodities.
3. Choice, care and use of equipment used in the preparation of meals.
4. Marketing, storage and preservation of food.
5. Simple food values.
6. Economy in the kitchen.
7. Safety and hygiene in the kitchen.

Course work and teachers' assessments

Each candidate will have her examination course work assessed by the Domestic Science teacher, taking into account both effort and standard of work attained, and external moderators may call for samples.

This Course work may include a PERSONAL STUDY.

Form of examination

The examination will consist of two papers.

Paper 1 . . . Theory of 1½ hours' duration.

Question 1 will be compulsory and will consist of 20 questions, requiring short answers.

Remaining questions should provide a choice, e.g., 4 out of 6.

Paper 2 . . . Practical

Part 1 . . . Preparation of 1¼ hour's duration.

This should be held at the discretion of the Domestic Science teacher, during the week prior to the Practical test.

During this time candidates shall make an original and one copy of the preparation sheet, i.e.

1. Menu or work chosen ;
2. Order of work, with essential times and oven temperatures ;
3. Book references for recipes, where necessary.

Candidates shall also prepare a shopping list on a separate sheet of paper.

Part 2 . . . Practical of 2½ hours' duration.

During this time candidates should complete as much as possible of their washing up and clearing away of equipment.

Recipe books may be used throughout the practical examination.

No specific dishes will be required.

HOMEMAKING

1. Each test in this course will include some cookery, and at least one of the following two subjects—housewifery and laundrywork.

2. The Domestic Science teacher may delete any test, e.g., any for which she has not the facilities or those not acceptable for religious reasons, and give the remaining tests in alphabetical order.

COOK AND HOSTESS

1. All the tests in this course are to be given in alphabetical order.
2. Candidates may answer Part A or Part B.

The weighting of the examination to be as follows:—

Paper 1 Theory 2

Paper 2 Preparation 1

Practical 4

TEACHERS' ASSESSMENT 3

MATHEMATICS

(Two papers of 1½ hours each ; and an alternative third paper of 1½ hours)

The object of the Regional Mathematics Scheme is to offer to participating schools as wide a variety of approach to the subject as is possible under a system of external examination.

Since the nature of mathematics teaching is at present in a state of flux, the Board have tried to cater for the more traditional approach

whilst at the same time encouraging experiment with some of the ideas more recently introduced into the teaching of mathematics. The examination will be based on a core of basic mathematical concepts, and on one of a variety of topics selected so that candidates may apply their knowledge in greater detail to some particular aspect of mathematics.

The examination will consist of three parts, each carrying one-third of the total marks. Candidates must satisfy the examiners in each part of the examination.

Parts I and II, which will each be of $1\frac{1}{2}$ hours' duration, will test a basic core of mathematical knowledge. Part I will consist of a number of short questions, including multi-facet and multi-choice type questions, to be answered on the question paper and all to be attempted. Part II will allow a choice from a number of problem-type questions.

In Parts I and II Schools may choose between two alternative syllabuses:—

EITHER

Syllabus A which will follow the more traditional type of mathematics taught in many schools ;

OR

Syllabus B which will contain some of the concepts more recently introduced into secondary schools.

Part III will test a knowledge of *one* of the following topics :—

- (i) Additional Mathematics
- (ii) Astronomy
- (iii) Home Mathematics
- (iv) Engineering Mathematics
- (v) "Modern" Mathematics
- (vi) Navigation
- (vii) Statistics
- (viii) Surveying

Schools desiring to offer some other topic are invited to submit their proposed syllabus for approval by the Board. Any number of topics may be offered by one school but individual candidates may submit *one* topic only. Schools may choose one of the following methods of examination for this part:—

- (a) An examination of $1\frac{1}{2}$ hours' duration set and marked by the Board ;
- (b) An assessment of course work by the school with external moderation. There will be no set examination ;
- (c) The examination as in (a) together with an assessment of course work, externally moderated. In this case the examination will carry two-thirds and the course work one-third of the total marks allowed for this part of the examination.

In each school the same method of examination must be selected for all candidates studying any one topic.

In Parts II and III of the examination any practical aids to calculation which will produce an answer to the required degree of accuracy may be used in the solution of problems, but it should be indicated on the answer paper what such aid has been used.

MATHEMATICS, SYLLABUS A

Parts I and II.

The four rules applied to numbers and measures in common use: British and metric systems. Practical measurements of length, area, volume, weight and time. Vulgar and decimal fractions and conversions. Approximations and estimates.

Percentage. Profit and Loss.

Averages, ratio, proportion and proportional parts.

Construction, use and interpretation of simple graphs, and all types of pictorial representation.

Use of tables of information (e.g., timetables and ready reckoners).

Use of tables, including logarithms, squares and square roots.

Easy algebraic expression. Construction and use of formulæ, change of subject of simple formulæ, use of brackets, directed numbers, easy factors and multiples, fractions, indices, solution and easy application of linear equations.

A knowledge of constructions and calculations (but not proofs of theorems) based on:

Angles: including bearings, angles at a point and connected with parallels, sum of angles of triangles and polygons.

Recognition and analysis of shapes: in 2 and 3 dimensions—the triangle; rectangle, square, quadrilateral, parallelogram, trapezium, rhombus, regular polygons; circle; surface area and volume of cuboid, cube, cylinder and prism. Shapes arising from moving points (loci) and moving lines (envelopes).

The use of Pythagoras' Theorem.

Similarity (including congruence). Symmetry.

The bisection of angles and lines, and the construction of perpendiculars using ruler and compasses only.

Construction of: triangles, quadrilaterals, circles, from given data.

The trigonometry of the right-angled triangle; sine, cosine and tangent of acute angles. Application to simple problems in two dimensions.

MATHEMATICS, SYLLABUS B

Parts I and II

THE COUNTING NUMBERS

Numerals

The symbol for zero

Its use as a "place-holder"

Numbers written in the scale of ten

The British monetary system, and systems of weights and measures

The Metric System

Practical system employing the scale of ten

(Note: quantities expressed in not more than two units except £ s. d.)

Numbers written in other scales

Binary and electronic computers

Combining numbers:

Addition and Multiplication Tables

The repeating patterns associated with them

| | |
|---------------------------------|--|
| Other number patterns | Figurate numbers: Pascal's Triangle, etc., leading to simple series. |
| Easy computation in the 4 Rules | Application to practical situations (e.g., profit and loss) |

EXTENSIONS OF THE NUMBER SYSTEM

| | |
|--|--|
| Measurement | Expression and Conversion of Compound Quantities in both |
| Fractions — Common and Decimal | |
| Index notation | |
| Standard Form | |
| Logarithms: slide rule | |
| Negative numbers | |
| Irrational numbers (only very simple manipulation, e.g.: | |

$$\frac{2}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$$

Approximation and Estimation
 Significant figures
 Decimal places
 Limits of Accuracy

THE STUDY OF RELATIONSHIPS

| | |
|--------------------------------|---|
| Ratio: Proportion: Percentage: | Use of fractions for purposes of comparison |
|--------------------------------|---|

| | |
|------------------------------|---|
| Simple and compound interest | From tables or time limited up to 3 years |
|------------------------------|---|

| | |
|-------------------------|---------------------------------------|
| Graphical Relationships | Axes and co-ordinates to fix position |
|-------------------------|---------------------------------------|

| | |
|---|--------------------------|
| Continuous Functions: recognition and statement of relationships from given tables of values or formulæ | Straight line: parabola: |
| Dependent and independent variables | $y = mx + c$ $y = x^2$ |

| | |
|---|---|
| Other characteristics of a function obtainable from its graph | Rate of change: turning values: significance of gradient: "area under the graph" by counting squares or adding areas of trapezia; sections of a graphical diagram in which the represented function bears values greater or less than specified values: equalities appearing as marginal cases between inequalities |
|---|---|

| | |
|------------------|---|
| Inequalities: | |
| Statistical Data | Pie charts: Bar graphs: Pictograms: Rainfall and Temperature charts |

| | |
|-------------------------|---|
| Algebraic relationships | Similarities with processes of arithmetic |
| Manipulation of symbols | and differences such as juxtaposition |
| Use of brackets | |

| | |
|---|---|
| Identities: inequalities: equations | |
| Simple: simultaneous: quadratic: | quadratics capable of solution by factors or by graph |
| Derivation of simple formulæ by various means | |
| The language of mathematics | Precise use of symbols, e.g., $>$: $<$ etc. |
| Logical relationships by simple Venn diagrams | Both: Either or : either but not both |

FUNDAMENTAL IDEAS ABOUT SHAPE

| | |
|--|--|
| Recognition of shapes in 2 and 3 dimensions | Plane figures up to 12 sides |
| Shapes that arise from moving points (loci) or moving lines (envelopes) | Solids — prisms, pyramids and sphere |
| The analysis of shapes: sides and angles: | |
| Faces, edges and vertices of solids | |
| Curved lines and surfaces | |
| Metrical properties of shapes in two and three dimensions | Including volume and area from given data for figures of uniform cross-section |
| Definition of angles: use of protractor | |
| Angles at a point | |
| Relationships of angles connected with the triangle: parallel lines: and the circle: and their commoner geometrical properties | Formal proofs will not be required |
| Direction and change of direction: bearings | (Note connection with graphical work in position fixing by co-ordinates) |
| Simple navigational problems solved by drawing to scale | |
| Similar plane and solid figures | Congruence treated as a special case |
| Symmetry about a point, line and a plane | |
| Relationships of length, area and volume, in similar figures | $a : A = l^2 : L^2$ $v : V = l^3 : L^3$ |
| Special importance of the right-angled triangle | Use of Pythagoras' Theorem |
| Similar triangles and constant ratios | |
| Relationships between the angles and their trigonometrical ratios of right-angled triangles only | |
| Geometrical drawing, including a knowledge of simple plans and elevations and simple constructions from given data | |

MATHEMATICS, PART III—SYLLABUSES FOR THE TOPICS

(i) TOPIC : ADDITIONAL MATHEMATICS

More advanced application of the mathematics in Parts I and II will be expected, together with the following :

The arithmetic of daily life : savings, insurance, wages and salaries, household bills and accounts, hire purchase, rates, pensions, discount, income tax, compound interest from tables.

Simultaneous and quadratic equations, including the solution of equations by graphs.

Simple problems on simultaneous and quadratic equations.

Construction and use of formulae.

Angle properties of the circle.

Tangent properties of the circle.

Solution of simple navigational problems involving a knowledge of the parallelogram of velocities. (May be done by calculation or scale drawing).

Simple three-dimensional problems.

Construction of common regular polygons.

Trigonometry as applied to simple navigational and surveying problems, using only tan, sin and cos ratios. Calculation of gradients. Great and small circle distances. Area of triangle

(ii) TOPIC : ASTRONOMY

General Astronomy. The composition of the universe : galaxies, nebulae, stars, planets. The Solar System.

The constellations. Stellar distances and magnitudes. Double and binary stars, giant and dwarf stars, novae. Variable stars.

Optical and radio telescopes ; altazimuth and equatorial mountings.

Mathematical Astronomy :—the earth : shape, rotation, inclination of axis, orbit round the sun. Equator, poles ; meridians and longitude ; parallels and latitude ; tropics, Arctic and Antarctic Circles. The seasons ; day and night. Right ascension and declination of heavenly bodies ; calculation of latitude and longitude. Equinoxes and solstices. Division of the calendar and its history. Lunar month, tropical year, sidereal year, synodic month. Leap years. Apparent motion of the sun along the ecliptic.

The Moon. Motion relative to the earth ; phases, eclipses, librations ; tides ; lunations ; surface features and conditions.

The Sun. Focus of the planetary system ; the ecliptic ; eclipses, solar and lunar, total and annular ; surface of sun ; sunspots and prominences.

The Planets. Kepler's Laws of Planetary motion ; transits ; superior and inferior planets ; conjunction, opposition and elongate ; synodic and sidereal periods ; surface conditions and possibility of life ; cometary motion.

The stars and galaxies. Co-ordinate system of describing position in the sky : stellar measurements ; angles of arc ; light years, astronomical units ; parallax.

Artificial satellites, escape and orbital speeds and orbits. Interplanetary travel — difficulties to be overcome.

Note : Mathematical calculations will include the finding of latitude and longitude ; conversion of distances into light-years and vice-versa and "speed and time" type of problems ; the plotting of constellations

from stellar co-ordinates. Simple exercises may be set involving geometrical drawings, e.g. planetary orbits (assumed to be circles) and movements of constellations in the sky. Other questions will require short descriptions accompanied by clearly labelled diagrams.

(iii) TOPIC : HOME MATHEMATICS

The applications of the mathematics of Parts I and II to everyday domestic situations. The questions will be framed within such topics as : Savings Banks.

Post Office services, e.g., mail and telephone—the cost to the individual of using these services.

Electricity and gas bills—heating and lighting including central heating—meter reading and calculating accounts.

Insurance and endowment policies—national insurance—pensions—superannuation.

Hire purchase.

Mortgage repayments.

Rent and Rates.

Foreign currencies—problems on holiday costs and travel.

Personal incomes—deductions, e.g., P.A.Y.E.—method of payment—bank account—household budget, including discount on bills.

Problems in the home and garden.

(iv) TOPIC : ENGINEERING MATHEMATICS

The syllabus is arranged in 4 sections. The examination paper will consist of 8 questions (2 on each section) of which the candidate should attempt 5.

The use of slide rules and other calculating devices should be encouraged.

- (i) **Machines—** Levers. Moments. Work done. Horse Power. Mechanical Advantage. Velocity Ratio. Efficiency. Windlass; winch; screw; inclined plane; pulleys; wheel and axle, capstan, gear wheels.
- (ii) **Mensuration—** Area, volume, capacity, weight, pressure. Specific gravity, density; Centre of Gravity. Measuring instruments—vernier, micrometer.
- (iii) **Dynamics—** Speed: velocity: acceleration: falling bodies. Triangle of velocities; relative velocity; graphical methods of representing speed: distance: time: acceleration.
- (iv) **Drawing Methods—**Constructions. Drawing to Scale. Plans and elevations. Isometric and oblique drawing. Calculations from drawings.

(v) TOPIC : MODERN MATHEMATICS

The emphasis will be on the application of the following concepts:—

1. Numbers in scales of notation other than denary—particular reference to binary notation. Desk Calculators and computers. Work in moduli.

The Young Homemaker

by Angela Creese

For the average pupil. Covers cookery, nutrition, personal hygiene, housecraft and laundry. 18s. 6d.

Teenager in the Office

by M. Leafe

A complete course for the office junior. 2nd edition. 10s. 6d.

Personality in the Office

by Audrey Price

Sets out to teach pleasant, fluent and confident speech. With exercises. 10s. 6d.

An Introduction to Commerce

by N. C. Speed

Relates commerce to everyday life. With exercises. 2nd edition. 6s.

Discovering Embroidery

by Winsome Douglass

How to design and carry out embroidery. A standard work in its 6th impression. 12s. 6d. net.

The Complete Book of Tailoring

by Adele P. Margolis

Every aspect of dressmaking and women's tailoring. 40s. net.

You and Your Clothes

by Geraldine Macdonald

Advice on fashion, the buying, care, repair and making of clothes. 2nd edition. 18s. 6d.

Technical Drawing for GCE and CSE

Metalwork Theory for GCE and CSE

by J. N. Green

Specially planned to provide comprehensive courses for GCE and CSE. 15s. and 12s. 6d. respectively.

MILLS & BOON & ALLMAN

50 Grafton Way, London, W.1

2. Sets. Venn Diagrams. Truth Tables.
 Conception of Universe and its limitations. Construction of diagrams.
 Interpretation of given diagram.
 Use of 'set-language': $\{ \} \subset \cap \cup \neq \emptyset$ complement.
 Solving of 'brainteaser' types of problem. Truth tables to solve questions of logic.
3. Symmetry—about a point and a line, and rotations about a point and a line.
4. Vector Notation—displacement along a linear scale; equivalence of vectors; two- and three-dimensional vectors.
5. Matrices: addition, multiplication by a scalar, multiplication of one matrix by another. P.Q. \neq Q.P.
6. Linear Programming—idea of \geq and \leq ; expressing the conditions of a problem in algebraic terms and the construction of the graph and shading of areas from these algebraic terms. The interpretation of the remaining area in terms of problem.
7. Topology—comparison of Topology and Euclidean Geometry. Möbeus bands. Klein bottles, etc. Topological Transformations. Königsberg bridge problem. Use of formulae $V-A+R=2$ for networks and $V-E+F$ for nets.

(vi) TOPIC : NAVIGATION

A sufficient choice of questions will be given so that candidates may if they wish choose either sea or air navigation as a topic for study.

Bearings: Difficulties of the early navigators, use of lodestone, magnetic compass.
 Determination of South (Sun) and North (Polar Star).
 Cardinal and intercardinal points (16).
 Quadrantal and 3 figure notations.
 Determination of position by bearing and distance and also by cross bearings.

Geometry of the Earth:

Great and Small Circles, Latitude and Longitude.
 Sea Mile and Knot.
 24 hour clock and World Time. Eratosthenes.

Maps: Scales, Mercatorian Compromise, Map Reading (Position by Lat. and Long. Simpler Symbols, etc.), Rhumb Lines. "Navigation Ramble" and "Navigators' Log".
 Use of bearings to make map of school field (or other open space).

Air Navigation:

Parallelogram of velocities, Course, Track, Drift, Air Speed, Ground Speed, Fix, Port and Starboard, Wind variations (height and position).

Nautical Navigation: (slower speeds mean more plotting)

Cross bearings, Running Fix, Doubling the Angle on the Bow, Horizontal Angles (Station Pointer), Angle of Elevation from Sextant and Bearing of Lighthouse or Cliff, System of Buoyage including Main Stream of Flood Tide around British Isles. Fathoms, Patent Log, Variation. Clinometer. Rules of the road.

Charts: Meanings of symbols (for buoys, depths and lightships), abbreviations and numbers.
Fixing positions of unmarked objects by lat. and long.
Setting and Plotting Air and Sea Courses (Simple examples involving use of above terms).

(vii) *TOPIC : STATISTICS*

The candidate should demonstrate his ability to classify raw material and present it in simplified form. He should be able to interpret pictorial representation. Common mis-uses of statistics should be recognised.

- (i) Collection of statistical data—census and sampling methods of enquiry.
- (ii) Representation of data— histogram, bar-chart, pie-chart, time-chart and pictogram.
- (iii) Comparison of statistics— ratio, percentages, index numbers, correlation by scatter diagram; rank correlation, The weighted average; moving averages.
- (iv) Frequency distributions— histogram, frequency polygon, cumulative frequency distribution (ogive), estimation of median and quartiles.
- (v) Measures of position— mean, median, mode and quartiles.
- (vi) Measures of dispersion— range; semi-interquartile range; mean deviation; the uses (not calculation) of standard deviation.
- (vii) Simple probability.

(viii) *TOPIC : SURVEYING*

Chain surveying:—Triangulation of area to be surveyed—choice of stations. Ranging out on flat and hilly ground. Use of the lines. Offsets and Insets. Calculation of offset areas. Construction of right angles by chain, cross staff or optical square.

Correction for slope by (a) clinometer (b) “stipping”.

Chaining round obstructions when (a) vision free, chaining obstructed (b) vision and chaining obstructed. Surveying woods, ponds, etc., where triangulation is impossible—exterior tie lines and chain angles. Correct use of ‘field note-book’. Plotting simple plans from field note-book. Calculation of areas from field note-book. Calculation of areas from plans by triangles and offsets and by Simpson’s Rule.

Simple Traverse Surveys using a prismatic compass.

Plane-Table surveys — Theory, advantages and disadvantages. Mark; reduced levels and bench marks; arbitrary Datum. Simple section levelling using level and levelling-staff (max. distance between stations 300 feet). Compilation of Level Book. Plotting to scale from Level Book.

ARITHMETIC

(2 papers of 1½ hours each)

General

The Regional Subject Panel is of the opinion that Arithmetic should not be included as a separate examination subject. However, in view of the demand from a large number of schools in the region, the Board

have agreed to offer Arithmetic as a separate subject for at least three years (1965–1967) during which period the matter will be reviewed.

Syllabus

The examination will consist of two papers each of $1\frac{1}{2}$ hours duration. Section 1 of Paper 1 will consist of twenty short questions all to be attempted. Thirty minutes will be allowed for this section. Section 2 will consist of five problems, *ALL* of which must be attempted.

Paper II will give a choice of questions of the problem type which may require answers to a specified degree of approximation, including results correct to a given number of significant figures.

The four rules simple and compound.

Problems on the four rules applied to important units of weights, measures and money including metric units.

Quantities will not be expressed in more than 2 units (—miles, furlongs, kilometres, metres, gallons, pints, dollars, cents, litres and ccs.) with the exception of £.s.d.

Problems involving the conversion of measurements from British and metric units and vice-versa.

Decimals—examples of first four rules applied to non-recurring decimals.

Vulgar fractions and use in solving mensuration problems.

Calculations of averages and simple examples of weighted averages.

Ratio, proportion and proportional parts.

Percentages. Profit and Loss. Simple Interest. Compound Interest.

The Arithmetic of Daily Life:—Savings, insurance, wages and salaries, household bills and accounts, hire purchase, mortgage repayments, rates, pensions, central heating, discounts, income tax. (Calculations will be kept simple, the aim being to test understanding of the subject.)

Areas: rectangle, triangle and circle.

Areas and volumes of cylinder, cube, cuboid, and prism. Application to home decorating, gardening and woodwork.

Development of graphical work from personally collected information and every-day statistics.

Interpretation of simple statistical data as shown in bar-graphs, circular diagrams and similar diagrammatic representations, e.g., graphs as displayed from time to time in the National Press.

Questions may be set on the use of railway and bus timetables, ready reckoners.

Development of index notations.

Simple logarithms.

Use of logarithm tables and slide rules.

Simple problems on distance, time and speed and including graphical solutions.

METALWORK

(One theory paper of 2 hours and a practical examination of 4 hours)

General

The examination will be based upon the basic principles, tools, processes and materials of the following crafts:—Art metalwork, sheet metalwork, bench fitting, simple turning, simple forgework, simple foundrywork.

The designing ability of the candidate will not be subject to examination, except at a most elementary level as part of the understanding of the use of materials and processes.

Schools are assured that there is no need to form and follow a rigid course of work for the examination. They are rather encouraged to experiment and follow their own particular bent. It is recommended that the candidates should have had a wide experience of a variety of metalworking crafts.

The examination will consist of three parts:

1. Theory Paper (2 hours allowed).
2. Practical Test (4 hours allowed).
3. An assessment of the candidate's coursework.

Each section will carry one-third of the total marks. The candidates will have to satisfy the Board in all three sections of the examination.

Details of the method of assessment by teachers of their candidates' coursework are contained in the Board's Regulations and detailed examination instructions.

Theory paper

The theory paper will be in two parts :

- Part 1.** This will consist of 30 questions requiring short answers, 25 questions to be attempted.
- Part 2.** This will consist of eight questions requiring longer answers, 4 questions to be attempted.

The questions will be based upon the practical work that the candidate may reasonably be expected to have experienced during a minimum three-year course of metalwork. The candidates will have to show a broad understanding of principles and be able to express their knowledge with short written answers and/or simple sketches.

Practical examination

The practical test will consist of a choice of ONE from three alternative test pieces. 4 hours will be allowed for the test, but it is anticipated that the majority of candidates will complete the test comfortably within this time.

Test A. A benchwork test that may include simple turning.

Test B. An art metalwork test.

Test C. A forgework test that may include some simple fitting.

The candidate will be presented with the details of the test as dimensioned sketches or scale drawings. Approximately two weeks prior to the examination period the candidate will be allowed to see the

practical test papers for 15 minutes during which time he will select the test he wishes to attempt.

Materials for the test will be supplied by the schools and prepared according to instructions issued by the Board. Further material for the practical test will be available to the candidate if required during the examination period, at the discretion of the Invigilator.

During January schools will be given details of the materials that may be required. The tests will not need materials or equipment that are beyond the normal range of school stock.

Schools will have freedom to timetable the tests to suit their own special conditions, within certain specified dates.

The Board recommends that no more than twelve candidates be given the practical test at any one session. The craft teacher must be present during the course of the practical tests.

MODERN LANGUAGES

(FRENCH, GERMAN AND SPANISH)

(One aural paper of 1½ hrs., one written paper of 1¼ hrs., and one oral test)

General introduction

A foreign language is a practical means of communication, not an academic exercise for the mind. This concept has been fundamental to all the deliberations and decisions of the Regional Subject Panel for Modern Languages, in devising the following syllabus for the C.S.E. examination. From the outset it was accepted unanimously as a basis, not only by the members of the Regional Panel but by the various County Panels.

The Board were particularly anxious to move away from the G.C.E. format, with its emphasis on the difficult skill of precise translation, a skill which is too difficult for many of the pupils towards whom the C.S.E. is directed unless they are subjected to an inordinate amount of translation practice. The Board consider that the teaching of modern languages should rather aim at developing the simpler and more practical skills of comprehension and self-expression.

After studying a foreign language for five years a pupil of average ability should be able to use the language in the following ways:

1. To understand the language when spoken to him (there are obvious limitations here of topics and vocabulary which might be described generally as simple and everyday).
2. To respond to the stimulus of question or situation and express himself in the language with reasonable fluency and accuracy.
3. To read a passage in the language and understand it (with the same limitations as in 1. above).
4. To read aloud with a good accent.
5. To write the same simple and everyday language that he is expected to understand, with reasonable accuracy.

These are the skills which will be tested in this examination, and since the Board are concerned with language as a practical means of communication the passages chosen for the testing will relate to the

sort of situation in which the pupil is likely to find himself, or the sort of vocabulary which he is likely to need, on a foreign visit. For the same reason the free composition is in the form of a letter, as this is probably the only type of writing in the language that he will ever be required to do. Finally, the material of the examination will be relevant to the country, life and customs of the people whose language is being studied, since instruction in these should be an integral part of language teaching.

Syllabus

PART 1—Aural (time : approx. 1½ hours. 40% maximum). To be read out by candidate's own teacher.

(a) Dictation (10%)

The passage will be read four times. The first reading, at normal speed, will be to give the candidates a general idea of the passage. The passage will then be read in short sense-groups, each group being repeated after it has been written down. Punctuation will be given in the language under examination. The final reading will be given at rather slower than normal speed but pauses will be made only at the end of sentences. The candidates will then be allowed five minutes for checking and revision. Proper names to be spelled out or written on the blackboard.

(b) Aural Comprehension (Answers in English—15%)

A passage of 150-200 words of fairly simple narrative will be read three times and the candidates will be required to give written answers *in English* to a number of questions *in English* designed to show comprehension of the passage.

Procedure. The whole passage will be read within the time specified; it will then be read a second time, section by section, and after each section the appropriate questions will be read out twice and answered. The whole passage will then be read a third time and the questions repeated at the end. Five minutes will then be allowed for checking and revision.

(c) Aural Comprehension (Answers in the language being examined—15%)

A more simple passage than in (b) will be read three times. The procedure will be the same as in (b), but ten minutes will be allowed at the end for checking and revision. Answers must be in complete sentences.

PART 2—Written (Time 1¼ hours. 30% maximum)

(a) Comprehension (15%)

The passage chosen will be of about 250 words. A series of questions in English will be answered in English.

(b) Free Composition (15%)

This will be in the form of a letter of about 120 words. The candidate's choice will be between:

(i) a reply to a given letter;

or (ii) a letter on a given topic (choice of two).

PART 3—Oral (Time at least 10 minutes, 30% maximum). To be conducted and assessed by the candidates' own teacher in accordance with the instructions for oral examinations and teachers' assessments set out in the Regulations of the South-East Regional Examinations Board.

(a) **Reading (10%)**. A passage of about 50 words should be given to the candidate a few minutes before the examination. He will then read it to the examiner.

(b) **Conversation (20%)**. The examiner should ask a series of questions, becoming progressively more difficult. These may develop, for the more able candidate, into a less formal conversation. In the course of the Oral Examination some questions should be asked on the general background of the people who speak the language as their mother tongue.

(Reading passages, interview instructions and assessment forms will be issued to all schools offering candidates, by 25th February).

Syllabus content for FRENCH :

Vocabulary : Simple, practical, everyday vocabulary and grammar, based upon *Le Français Fondamental ; premier degré* (published by Harrap & Co.), supplemented where desirable by the teacher.

Syllabus content for GERMAN :

Vocabulary : The vocabulary should be that required to deal with everyday experiences in a German-speaking country.

Nouns : Declension in singular and plural.

Adjectives : Declension, comparison, possessive, demonstrative and interrogative.

Pronouns : Personal, interrogative, relative (NOT possessive 'dermeinige'.)

Use of Cases :

(a) Part of sentence (Subject, Complement, Direct Object, Indirect Object, Possessive Genitive).

(b) After prepositions : *für, um, durch, ohne, gegen : bei, aus, nach, gegenüber, seit, von, außer, mit, zu : an, auf, hinter, vor, in, unter, über, neben, zwischen : während* (NOT other prepositions governing the genitive case, e.g., *jenseits, außerhalb, anstatt*, etc.).

(c) Common verbs governing the dative cases.

(d) Phrases of time, etc. : e.g., *eines Tages, jeden Abend, sechs Mark das Pfund*, etc.

Verbs : Conjugation of the present, future (for recognition only), preterite (imperfect), perfect, and pluperfect indicative tenses in the active voice. The imperative mood. Present and preterite (imperfect) of modal auxiliary verbs, separable and inseparable prefixes. Reflexive verbs. Infinitive with and without *zu*. (NOT subjunctive mood or passive voice or conditional. *ich möchte* could be taught as a set phrase.)

Numerals : Cardinal and ordinal, time dates, etc.

Punctuation : Especially where it differs from English (e.g., use of commas). Use of capital and small letters.

Word Order : Interrogative, main clause, dependent clauses. Adverbial expressions (time, manner, place).

Syllabus content for SPANISH :

General : The twin objectives of the course shall be to ensure that the pupil has a reasonable degree of linguistic proficiency with a strong oral bias, and a broadly-based general knowledge of the country and its culture. In view of the practical difficulties of trying to draw up a strictly defined syllabus to encompass these requirements it seems more suitable to indicate what knowledge is *not* expected of the candidates, or more precisely what aspects of language should *not* form part of the examination.

Vocabulary : Bearing in mind the limitations of the candidates' knowledge of their mother tongue it is not unreasonable to aim for a basic vocabulary of the order of 2,000 to 2,500 words similar in scope to Keniston's *Standard List of Spanish Words and Idioms*. Vocabulary used for teaching and testing purposes should, as far as possible, be related to the linguistic experience of the candidate in his own language. Where there are divergences in the every-day life of our own country and Spain it will be necessary to introduce specialist words like "*paella, reja, bodega, vendimia, muleta,*" etc. It is hoped that candidates will be encouraged to develop an awareness of the multiplicity of meanings attached to many common words like "*cabo, paso, blanco, corriente,*" etc.

Verbs : Pupils should be able to recognise, understand and use all tenses and moods necessary to sustain simple conversation. It is futile to pretend that the teaching and understanding of the subjunctive can be avoided, at least in the Present and Perfect Tenses, but no candidate for this level of examination should be expected to have more than a casual acquaintance with the Imperfect and Pluperfect subjunctives. The same may be said of the *Tu* and *Vosotros* Imperatives ; candidates should be able to recognise them but should not be expected to be able to use them.

Knowledge of the Past Anterior will *not* be required.

The impersonal "*Se*" and Reflexive used as Passive must be understood.

Verbs which involve complex orthographic changes like "*caber*" will be avoided in examinations.

Articles : Particular attention will need to be given to the cases of inclusion and omission contrary to English usage.

Pronouns : Knowledge of Possessive Pronouns will not be required for the examination. *El que, el cual,* etc. should be taught for purposes of recognition rather than examination.

Adjectives : Not too fine a distinction should be placed on the differences between "*ese*" and "*aquel*."

Conjunctions : The compound conjunctions like *para que, de modo que, con tal que, etc.,* introducing adverb clauses with subjunctives should be avoided.

Punctuations : Should be included as part of the syllabus—particularly as regards speech and the use of capitals and small letters contrary to English use.

Accentuation : The revised rules of accentuation issued by the Spanish Academy in 1952 should be used.

Pronunciation : Standard Castilian "Ceceo." Particular stress should be placed on good vowel sounds, trilled "R," very sibilant "S" and a softened intervocalic "D." There should be a certain amount of tolerance on the mastery of "B" and "V."

Idioms: It is not possible to list here all the common idioms which should be used in a five-year course but the following should certainly be included :

| | | |
|--------------------------|--|-----------------------------------|
| <i>Acabar de</i> | <i>Volver a</i> | <i>Tener que</i> |
| <i>Gustar</i> | <i>Ponerse a</i> | <i>Hacer (weather conditions)</i> |
| <i>Hacer (ago)</i> | <i>Tener, hambre, sed, ganas, etc.</i> | |
| <i>Hay que</i> | <i>Es que</i> | <i>Soler</i> |
| <i>Tardar</i> | <i>Dar and prepositions</i> | <i>Lo and adjective</i> |
| <i>Al and infinitive</i> | <i>Antes and infinitive</i> | <i>Después and infinitive</i> |

MUSIC

(History and Appreciation, 1 hour ; Theory, 1 hour ; Aural test, $\frac{3}{4}$ hour ; a Practical examination ; and a Special Study)

General introduction

Emphasis will be placed upon the fact that a candidate will have completed a five-year course in Music.

The tests given will be as musical as possible, designed to test musicianship and not merely the relating of facts learnt.

The examination will consist of the following sections, all of which are to be attempted :—

- (a) *Practical* Performing and reading.
- (b) *Aural* Listening and recording what has been heard.
- (c) *Theory* Understanding and creating.
- (d) *History and Appreciation* ... Knowing and remembering.
- (e) *Special Study* Following individual interests.

Schools will be responsible for making their own assessments of the Practical examination and the Special Study.

With regard to the Practical and Aural examinations, schools are required to inform the Secretary to the Board (for the guidance of the Chief Examiner), at the time of lodging their Entry Forms, which instruments their candidates will be offering.

(a) *Practical examination*

This will consist of the following :

1. *Performance* : An actual performance, either vocal or instrumental, solo or ensemble (with a maximum of four performers), of a simple piece, which may be accompanied. The weight of marks will be given to the standard of performance rather than the difficulty of the piece, which, however, should not be lower than Grade II Associated Board, or an equivalent standard. Any melodic instrument may be used.
2. A simple reading test (vocal, instrumental or whistled, at the candidate's own choice) involving rhythm and melody, with or without an independent accompaniment.

3. A rhythm test which will be accompanied, and may be played on percussion instruments, tapped or clapped.

Every candidate must perform Tests 2 and 3 on his/her own and will be given a period of five minutes for the (unaided) preparation of them, i.e., to look through them but not to play on any instrument.

(b) *Aural examination*

This will be conducted by the school and will consist of questions designed to test one skill at a time. All questions will be recorded on one side of a 12in. L.P. record. All answers to this section will be written.

1. Dictation of a rhythm. This will consist of a four-bar phrase and will be played as a melody, but the candidate will be required to write down the rhythm only. The speed of the beat and the time signature, limited to $\frac{2}{4}$, $\frac{3}{4}$, $\frac{4}{4}$ and $\frac{6}{8}$ will be given. The test, which will be played four times, will start on the first beat of the bar and will not contain rests.
2. Dictation of a melody. This will be simple ; the rhythm which will be printed on the answer paper will be just sufficient to give the melody shape. The melody, which will be in the major key, will consist of scalewise movement and tonic chord intervals only. The key signature will be given. The test will be played four times, the key chord having been sounded before each playing.
3. Signs and terms. On the candidate's answer paper will be printed an un-barred melody. From dictation the candidate will be required to insert at each hearing one or more of the following : bar lines and time signature, speed indication, dynamics, phrase marks, instrumentation.

(c) *Theory*

The candidates will be tested on the theory of music in the aural and practical sections of the examination, as well as in this paper. They will need to know and be able to use the following:—

1. Notation. Notes from semi-quaver to semi-breve (including dotted notes) and their rests.
2. Time. $\frac{2}{4}$, $\frac{3}{4}$, $\frac{4}{4}$, $\frac{6}{8}$ time.
3. Clefs. G, C and F clefs.
4. Major and minor keys. Candidates will be required to recognise and name the key from a short melody which is preceded by the key signature. The melody will end on a note of the tonic chord. It may contain accidentals but will not modulate.
Candidates will also be required to:—
5. Write a rhythm to a given set of words prefixing the time signature.
6. Write a simple melody to a given rhythm choosing their own key (major or minor).
7. Complete a melodic opening (in a major key) which will be written out in both the treble (G) and bass (F) clefs and the candidate will have the choice of continuing either of these to make a melody of

not less than eight bars and not more than sixteen bars in length. Candidates will be required to state for which voice or instrument this is written.

(d) *History and appreciation*

1. This section will include questions intended to test the candidate's general knowledge of the development of music. Candidates will not be expected to have studied this in detail.

The syllabus will not be a rigid one, but topics dealt with may include the following :—

Instruments and orchestral music
Voice identification
Development of song
Choral music
Recognition of style and period of music
Opera and oratorio
Chamber music
Recognition of simple forms and dance
Jazz

This will be tested by questions with musical illustrations contained on one side of the 12in. L.P. gramophone record. The answers required will be brief.

2. Candidates will also be required to select ONE from a list of three set works, for special study. This will be examined partly by questions with musical illustrations recorded on one side of a 12in. L.P. record and partly by written questions on the chosen work and the field of music from which it comes. (The recordings, which are issued on loan to schools, remain the property of Messrs. E.M.I. Records Ltd.).

The selection of works for the 1966 examination will be :—

Symphonia Antartica — R. Vaughan Williams
Carnival (Op. 9) (pianoforte) — Schumann
Excerpts from "The Magic Flute" — Mozart

Record Columbia 33CX 1572.

Overture. Side 1, band 1.

Papageno's Aria : "Der Vogelfänger bin ich ja" (A Fowler bold in me you see). Act 1, Scene 1. Side 1, band 2.

Queen of the Night's Aria : "O Zittre Nicht" (Be not afraid). Act 1, Scene 2. Side 1, band 4.

Duet Pamina and Papageno : "Bei Männern welche Liebe fühlen" (The manly heart that claims our duty). Act 1, Scene 2. Side 1, band 5.

Aria and priests' chorus : "O Isis and Osiris." Act II, Scene 1. Side 1, band 6.

(e) *Special study*

Candidates have an opportunity of presenting in this section, something of their own work, for example :—

1. An original composition (solo song, piano piece, etc.), or an arrangement of music for the candidate's own choral group, bellringers, instrumental group, etc.

2. A programme of specified length and scope, chosen, annotated and presented by the candidate.
3. Evidence of progress in vocal or instrumental study over two years.
4. Evidence of ability to train and conduct a group of singers or instrumentalists.
5. The making and playing of a simple pitched musical instrument.

NEEDLEWORK

(A) EMBROIDERY

(One theory paper of 1½ hours and a practical examination of 3¼ hours)

Syllabus

1. Knowledge of stitches, e.g., flat, looped, chain, knotted, zig-zag, couching, etc.
2. Knowledge of equipment.
3. Use of suitable fabrics, threads and stitches according to design and purpose.

Original designs should be encouraged at all times. Transfers must not be used. Help with traditional designs should be obtained from books.

4. Knowledge of transfers of design to fabric, e.g., traced, outline tacked, pricked and pounced, templates, etc.
5. Selection of colour in relation to design.
6. Mounting and making-up techniques, including suitable finishes, e.g., piping cord, braid, tassels, etc.
7. Knowledge of basic types of embroidery, e.g., quilting, smocking, appliqué, counted thread work, shadow, etc.
8. Use of patterned material as a basis of design.
9. Methods of creating designs, e.g., from shapes, textures, paper cut outs, etc.

N.B. Machine embroidery may be used in the course work but will not be included in the practical or written papers.

Form of examination :

1. **Written Paper.** There will be a Theory (written) Paper of 1½ hours' duration comprising two main Sections :—
 - (a) General Section on Fundamentals of Embroidery, e.g., Choice of threads, fabrics, colour and equipment.
 - (b) Identification of stitches, traditional embroidery, identification of embroidery terms from given diagrams and sketches.

Part 1

Candidates will be required to answer 10 compulsory short-answer questions on sections (a) and (b).

Part 2

One question from a choice of 2. The questions will call for the production of a design including suggestions for materials, threads, stitches and colours to be used.

2. **Practical Test.** There will also be a Practical Examination of 3 hours and $\frac{1}{4}$ hour. (First quarter hour for preliminary selection of equipment and materials.)
3. **Course Work.** *Three* articles, *one* from each of the following sections, to be presented :—
 - (a) Household article.
 - (b) Picture or panel.
 - (c) Free choice.

A high standard of finish will be required in the making up.

4. **Sketch and Sample Book**, covering 4th and 5th year work.
This is intended as a reference book and record of experiments in design and execution.

In the process of marking the whole examination the weighting given to the parts will be as follows :—

| | | |
|-------------------------|---|---|
| Practical test | } | 8 |
| Course work | | |
| Sketch and samples book | | |
| Theory paper | | |

(B) FASHION

(One theory paper of 1½ hours and a practical examination of 3 hours)

General introduction

A. Needs of the Pupil

To be able to choose clothes wisely, and to compare prices, also use of accessories. Good taste, good grooming, choosing the right garment for the right occasion. Costing and budgeting. Maintenance and care of clothes, simple alterations, use of commercial patterns, simple alterations of pattern.

B. Skills of Pupil

Manipulation, memory, intelligent use of given information, artistic ability (good use of colour and design), initiative.

Syllabus

1. Processes :—

- (a) **Stitches** :—Tacking (basting), running, hemming, oversewing, overcasting, slip hemming, loop-stitch, tailor-tacking, back-stitching, buttonhole, herringbone.
- (b) **Seams** :—Plain (open, flat, simple), French, double-machined, overlaid.
- (c) **Disposal of fullness** :—Darts, gathers, tucks, pleats, easing, elastic casing.
- (d) **Preparation and use of X-way pieces**—cutting and joining, their uses for binding, facing and decorative purposes. Use of bought bias binding for above purposes.
- (e) **Setting-in and neatening sleeves.**
- (f) **Attaching cuffs**—simple cuff with buttonhole fastening and opening.
- (g) **Neck finishes** :—shaped facings, attaching of simple collars, Peter Pan and rever (using facings and/or X-way strip).

- (h) Openings :—Continuous wrap, faced slit, concealed zip.
- (i) Fastenings :—Hooks and eyes, metal and worked bars, press studs, buttons and loops, worked and bound buttonholes.
- (j) Pockets :—Patch, inset and concealed.
- (k) Hems for different weights of materials (i.e. cottons and woollens), curved or straight.
- (l) Waist finishes :—Simple stiffened waist band. Joining and neatening of waist seam in dress.
- (m) Interfacing :—Correct use and choice of interfacing.
- (n) Simple decorative finishes for lingerie and children's clothes.

Basic needs for needlework

Sewing machine, its use, care and maintenance. Equipment, choice and selection for job in hand.

Fabrics and fibres

Simple origin and sources of supply, together with properties of natural fibres (wool, linen, cotton, silk), and made-made fibres, with emphasis on rayon (acetate, viscose), nylon and terylene. Candidates should know the advantages and disadvantages of making up and laundering these fabrics, including reference also to mixtures.

Use of commercial patterns

1. General rules for taking measurements. Simple alterations (i.e., lengthening, shortening) to ensure good fitting.
2. Preparation of the material before laying on the pattern.
3. Use of layout.
4. Thorough understanding of commercial patterns (suggested types :—Simplicity, McCall, Butterick, Vogue).

Importance of pressing garments as each process is completed.

(Simple repairs, general care and maintenance of clothes should be included in "good grooming").

Dress sense

Suitability of style, colour and fabric. Choice of correct accessories. Good grooming, Fashion trends today.

Suggested garments to be worked during the 5-year course :—

| | |
|--|------------------|
| Apron | Simple Suit |
| Skirt | Jerkin and Skirt |
| Shorts or Trews | Housecoat |
| Blouse | Nightwear |
| Dress, with or without a set-in sleeve | Waistslip |
| | Children's wear |
| | Jerkin |

Form of examination :

1. **Written Paper.** There will be a Theory (written) Paper of 1½ hours' duration, comprising :—
 - Section A. One compulsory question requiring 15 short answers.
 - Section B. Two fully developed answers. Choice of 2 questions out of 4 given.
2. **Practical Test.** There will also be a Practical Examination of 3 hours' duration comprising :—
 - (a) Practical : 3 hours (2½ + ½).
 - Half an hour prior to commencement of practical work will

be allowed for preparation and personal notes, using text and reference books. The examination will consist of a printed layout of part of a garment (prepared by the Board) which can be laid directly on the material as specified each year. The practical work must be completed on the part of the garment given.

- (b) Lay out, cutting and transfer of pattern marking to fabric of course work will be assessed by class teachers to a given schedule.

Marks for (b) will be included in final marks for the practical examination.

3. **Course work.** Garments will be prescribed each year by the Board. These will be assessed by the Needlework teacher, whose assessments may be externally moderated by a visiting teacher (Moderator) appointed by the Board. Guidance will be given by the Board on choice of fabric to be used according to the type of garment set. All work must be candidate's individual work.

For 1965/66 the prescribed course work is as follows:—

A Summer Dress to fit the candidate herself and including at least **two** of the following processes:—

- (a) A collar.
- (b) A short set-in sleeve.
- (c) An opening.
- (d) A waist seam.

Suitability of colour, style and fit of the garment for the candidate will be taken into consideration when marking the course work.

4. **Special Study:—**An illustrated scrap-book or file (500-1,000 words) is to be compiled on any topic included in the syllabus. It should contain sketches and designs and relevant collected matter.

The examination will be marked by serving teachers. The examination is *not* to be solely a test of facts learnt and memorised, but will be designed to test ability to handle given facts and materials constructively and creatively and to follow a reasoned train of thought to a conclusion.

In the process of marking the whole examination the weighting given to the parts will be as follows:—

| | | |
|----------------|---|---|
| Practical test | } | 8 |
| Course work | | |
| Special study | | |
| Theory paper | | 2 |

RELIGIOUS KNOWLEDGE


(One paper of 2 hours and one paper of 1½ hours)

The examination will consist of two parts:

Part A: a paper on the Life and Teaching of Jesus Christ and their relevance to modern times will be compulsory.

For Part B of the examination candidates will have a choice of four alternatives:

Alternative I. A paper on St. Paul and one of the Early Christian Churches.



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Alternative III. Special Study on the Church in the Modern World.

Alternative IV. A denominational doctrinal paper; schools wishing to offer this subject will need to submit their own syllabus to the Board.

A two-hour written examination will be set for Part A and one-and-a-half hours will be allowed for written papers in Part B.

Any version of the Bible may be studied by candidates and quoted in examinations, but all quotations in question papers will be given in the words of both the *Revised Standard Version* and of the *New English Bible*.

PART A

The Life and Teaching of Jesus Christ and their relevance to modern times

The suggested passages for study are taken mainly from the Gospel according to St. Luke. Candidates will, however, be given marks for relevant material from other Gospels.

1. *Outline of the Life of Christ based on the Gospel according to St. Luke*

Aims: To give a clear outline of the main events in the Life of Christ.
To encourage a detailed study of the content of some of the Gospel material.

(a) *Jesus' Birth and Boyhood (Chs. 1 and 2)*

Annunciation and Birth of John the Baptist.
Annunciation and Birth of Jesus of Nazareth.
Presentation in the Temple and Return to Nazareth.
Boyhood Visit of Jesus to the Temple.

(b) *Jesus' Work in Galilee (Chs. 3, 4, 5, 6, 7, 8, and 9, vv. 1-17)*

Message of John the Baptist and Baptism of Jesus.
Temptations of Jesus and His Rejection at Nazareth.
Call of the First Disciples and His Preaching and Healing around Capernaum.
Stories of His Conflict with Religious Leaders.
The Sermon on the Plain.
Further Galilean Activities, including Centurion's Servant; Widow's Son; Anointing in Simon's House; Ministering Women; Jesus' True Family; Storm on the Lake; Gerasene Madman; Jairus' Daughter; Mission of the Twelve; Herod's Opinion of Jesus; Return of the Twelve; Feeding of the Five Thousand.

(c) *Journeys in the North (Ch. 9, vv. 18-50)*

Peter's Confession at Caesarea Philippi; Transfiguration and Healing of Epileptic Boy; Return to Galilee; and Statement of the Passion.

(d) *Journey to Jerusalem (Chs. 9, v. 51 to 19, v. 10, omitting Ch. 10, v. 1-24)*

Samaritan Village; Would-be Followers; Good Samaritan; Martha and Mary; Parables on Prayer; Parables on Riches;

Warnings and Need for Repentance; Sabbath Healings; Parables on Feasting; Parables of the Lost; Parable of Dishonest Steward; Healing of Ten Lepers; Events at Jericho.

(e) *Jesus in Jerusalem (Chs. 19, v. 28 to 24, v. 53)*

Triumphal Entry and Cleansing of the Temple; Day of Questions culminating in Incident of Widow's Mite; Conspiracy of Priests and Treachery of Judas; Last Supper; Gethsemane; Trial before Pilate; Trial before Herod Antipas; Condemnation by Pilate; Crucifixion; Death and Burial of Jesus; Resurrection Morning; Walk to Emmaus; Appearance in Jerusalem; Ascension.

2. *Jesus' Teaching on the Christian Attitude towards Everyday Life and Social Questions*

Aims: To relate Christ's teaching to modern life.

To stimulate careful thought and comprehension concerning the meaning of Christ's teachings.

(a) *Worship and Prayer*

(i) Jesus and public prayer: Lk. 4, vv. 16-32; Lk. 19, vv. 45-46.

(ii) Jesus and private prayer: Lk. 3, v. 21; Lk. 5, v. 16; Lk. 6, vv. 12-13; Lk. 9, vv. 16, 18; Lk. 9, vv. 28-29; Lk. 22, vv. 41-46; Lk. 23, v. 46.

(iii) Jesus' teaching on Prayer: Lk. 11, vv. 1-13; Lk. 18, vv. 1-14; Mt. 6, vv. 5-15; Mt. 18, vv. 19-20; Jn. 14, vv. 13-14.

(b) *Money*

Lk. 12, vv. 13-34; Lk. 16, vv. 19-31; Lk. 18, vv. 18-27; Lk. 21, vv. 1-4; Mt. 6, vv. 2-4; Mt. 6, vv. 19-24.

(c) *Work and Leisure*

Lk. 9, vv. 1-6; Lk. 10, vv. 38-42; Lk. 12, vv. 35-48; Lk. 13, vv. 10-17; Lk. 14, vv. 1-6; Mk. 2, vv. 23-28; Mt. 25, vv. 14-29.

(d) *Helping Others*

(i) Jesus' example: Lk. 6, vv. 6-11; any miracles of compassion could be studied in this context.

Jn. 13, vv. 3-17.

(ii) Jesus' teaching: Lk. 6, v. 31; Lk. 10, vv. 25-37; Lk. 14, vv. 12-14; Mt. 25, vv. 31-46; Jn. 15, vv. 12-14.

(e) *Home and Family Life*

Lk. 2, vv. 1-52; Lk. 15, vv. 1-32; Lk. 16, v. 18; Mk. 10, vv. 1-12; Mt. 5, vv. 27-32; Jn. 2, vv. 1-10; Jn. 19, v. 26.

(f) *Attitude to Enemies and Wrongdoers: Forgiveness*

(i) Jesus forgives sin: Lk. 5, vv. 18-26; Lk. 7, vv. 36-50; Lk. 19, vv. 1-10; Lk. 23, vv. 34, 42-43.

(ii) Jesus' teaching: Lk. 6, vv. 27-45; Lk. 17, vv. 3-4; Mt. 18, vv. 21-35.

(g) *Class distinction and Race Relations*

Lk. 5, vv. 27-32; Lk. 7, vv. 1-10; Lk. 9, vv. 51-56; Lk. 10, vv. 25-37; Lk. 14, vv. 15-24; Lk. 17, vv. 11-19.

PART B. ALTERNATIVE I

St. Paul and One of the Early Christian Churches

Aims: To present St. Paul as a dynamic person dealing with the problems of his time and giving advice, much of which is still relevant in principle today.

To reveal the reactions of the church members of that time as they sought to practice their faith in everyday life in spite of difficulties and opposition facing them.

Passages to be studied every year

For the purpose of this series of papers it will be necessary to make a specific study of the following passages from the Acts of the Apostles which throw light on the development of the Early Church and St. Paul's life and character before and after his conversion:

1. Acts 1, vv. 6-14. "Ye shall be witnesses . . . unto the uttermost parts of the earth."
2. Acts 2, vv. 1-47. "Ye shall receive power."
3. Acts 3 and 4. "In the Name of Jesus Christ of Nazareth."
4. Acts 5, vv. 17-42. The Apostles' imprisonment and release: "A Pharisee named Gamaliel."
5. Acts 6, 7, v. 54 to ch. 8, v. 4. Stephen's martyrdom—the seed of St. Paul's conversion.
6. Acts 9, vv. 1-31; ch. 22; ch. 26. St. Paul's dramatic conversion influences the rest of his life.
7. Acts 10, ch. 11, vv. 1-18. ". . . to the Gentiles also."
8. Acts 11, vv. 19-30; ch. 12, v. 25; ch. 13, vv. 1-3. St. Paul's mission begins.

Each year a different Church will be selected for detailed study. Philippi has been chosen for 1966. Ephesus has been chosen for 1967.

1966—ST. PAUL AND THE CHURCH AT PHILIPPI

This city was the scene of some of the most memorable incidents in St. Paul's experience. Here he sang praises to God while chained in prison, and here too he founded a church which was similarly characterised by joy in the face of persecution.

The letter which St. Paul wrote to this warm-hearted and generous band of Christians, while not without its warning injunctions, contains some of the most inspiring passages in the New Testament.

(a) St. Paul's visits to Philippi. Passages to be studied

1. Acts 16, vv. 6—12. St. Paul's call to Macedonia.
2. Acts 16, vv. 12—20. First visit—full of dramatic incident.
3. Acts 20, vv. 1—6. Brief visit on his return to Jerusalem.

(b) St. Paul's letter to the Philippians

Ch. 1—*The Gospel Cause*. The close bond between St. Paul and the Philippians is revealed. St. Paul's example of courageous and joyful devotion to the cause of the Gospel has been followed by his converts.

Ch. 2—*Obedient unto Death*. An exhortation to humility and obedience, inspired by the example of Christ (cf. Mark 10, vv. 42-45). Some insight into the devoted service of Timothy and Epaphroditus.

Ch. 3—*Losses and gains*. A solemn charge to trust in Christ, and not in worldly ambition and achievement (cf. St. Mark 8, vv. 34-38).

Ch. 4—*Think on these things*. (R.S.V. Think about these things). St. Paul reveals the secret of true joy and contentment (cf. St. Matthew 6, vv. 24-34).

(c) *Memory Passages on which an optional question will be set*

Passages may be learned from any version of the Bible.

1. St. Paul's personal concern for his converts. Philippians 1, vv. 3-11.
2. Humility and obedience ; Phil. Ch. 2, vv. 1-11.
3. Losses and gains ; Phil. Ch. 3, vv. 7-14.
4. Joy and peace ; Phil. Ch. 4, vv. 4-13.

Those who elect to answer this question will be required to know two of the above passages and to answer a simple question on those two passages.

1967—ST. PAUL AND THE CHURCH AT EPHESUS

This city, which was the centre of St. Paul's missionary work in Asia, was rife with controversy and opposition. It was to Christians living in such an atmosphere that St. Paul wrote concerning unity, social behaviour, and the faith which is the whole armour of God.

(a) *St. Paul's visit to Ephesus—Passages to be studied*

1. Acts 18, vv. 19-23. A brief first visit.
2. Acts 19, vv. 1-41. A two-year campaign ends in riot.
3. Acts 20, vv. 1-5 ; 16-38. Prevented from making a further visit St. Paul gives some parting advice to the Leaders of the Ephesian Church.
4. Acts 21, v. 29. An Ephesian is the unwitting cause of a riot against St. Paul.

(b) *St. Paul's letter to the Ephesians*

Ch. 1—The status of the Christian within the Will of God. Note St. Paul's prayer vv. 17-23. (cf. Mark 12, vv. 10-11).

Ch. 2—Changes brought about by faith in Christ (cf. Luke 13, vv. 26-30).

Ch. 3—St. Paul reviews his mission vv. 1-13.

St. Paul's second prayer vv. 14-21. (cf. John 15, vv. 1-5 ; 10-11, "That Christ may dwell in your hearts").

Ch. 4—v. 1—Ch. 5, v. 20. Christian Unity and Christian Living.

(cf. Christ's prayer for His followers in John 17 ; and also the Sermon on the Mount).

Ch. 5—v. 21—Ch. 6, v. 9. Social Duties.

Ch. 6—vv. 10-20. The Armour of God.

(c) *Memory passages on which an optional question will be set*

Passages may be learned from any version of the Bible.

1. St. Paul's Prayer. Eph. 3, vv. 14-21.
2. Christian Unity. Eph. 4, vv. 1-6, 11-13.

3. Christian Behaviour. Eph. 4, vv. 25-32.

4. The Armour of God. Eph. 6, vv. 10-20.

Those who elect to answer this question will be required to know two of the above passages and to answer a simple question on those two passages.

PART B. ALTERNATIVE II

God's Call to Men in Old Testament times

Aims: To present some characters of the Old Testament as living personalities; as living in a genuine historic situation; and as having a real experience of God, from which came a contribution to their own generation.

To show these people as men of action with a message relevant for today.

MOSES: *Exodus 2, vv. 1-25; 3, vv. 1-15; 4, vv. 1-17; 12, vv. 21-36; 14; 19, vv. 1-9; 20, vv. 1-17; 24, vv. 3-8.*

Israel needed a deliverer, and God chose and prepared Moses. His training was seen in his introduction into the Egyptian royal family, followed by 40 years in the wilderness. This prince who was now humble and self-controlled enough to obey God, was used to deliver Israel, and to define to them the terms of the Divine covenant.

SAMUEL: *I Samuel 3, vv. 1-24; 4, vv. 1-10; 7, vv. 3-17; 8; 9; 10, v. 1.*

A decadent Israel stood in need of spiritual unity and revival. God appeared to Samuel who proved a faithful prophet. Israel was called back to the Lord, and united under a chosen prince.

DAVID: *I Samuel 16, vv. 1-13; 17; 18, vv. 1-16; 19, vv. 1-18; 24; II Samuel: 5, vv. 1-10; 9, vv. 1-13.*

Because of hidden Godly qualities, the shepherd boy was chosen to be king. These qualities emerged in his contest with Goliath, and later in his struggle with Saul. When at last king, the great warrior reflected on his own experience of God's grace in his gentle treatment of Mephibosheth.

ELIJAH: *I Kings 17, vv. 1-7; 18, vv. 17-46; 19, vv. 1-18; 21.*

Elijah's work was to challenge a backslidden nation, an army of false prophets, a blood-guilty king, and a wicked and dangerous queen. He displayed immense faith and courage, but in his hour of triumph this intensely human prophet wavered, overcome by the greatness of his task. The still small voice brought sufficient renewal for the task's completion.

AMOS: *Amos 2, vv. 6-16; 3, vv. 1-2; 5, vv. 14-15; 7, vv. 7-15.*

A simple herdsman, Amos received the call of God while pursuing his daily duties. He charged Israel with greed, uncleanness and injustice. He urged that their sins were taken more seriously because they were God's people. God's judgement would come unless they changed. The religious leaders tried to silence him, but Amos' message compelled him to speak.

HOSEA : *Hosea 1, vv. 1—11 ; 3 ; 11, vv. 1—4 and 8 ; 14.*
Hosea worked during the prosperous but corrupt reign of Jeroboam II. In his book, Hosea's faithless wife is likened to faithless Israel, while the faithful husband Hosea is likened to the faithful Lord. This prophet emphasised the shame of sin, the fruit of backsliding, the love of God for the wayward, and the conditions of restoration.

ISAIAH : *Isaiah 1, vv. 16—20 ; 5 ; 6, vv. 1—8 ; 36 ; 37.*
Isaiah's call was not simply a commission, it was also a profound experience of God. From that experience he not only condemned the gross sins of that day, and called for a return to the Lord, but he also stood by an unnerved king in a time of national crisis, imparting the moral strength and trust needed to save the nation.

JOSIAH : *II Kings 22, vv. 1—13 ; 23, vv. 1—3 ; 24 ; 25.*
Josiah was one of the kings whose life was lived in obedience to God's laws. His love for God's House led to the discovery of the Book of the Law, which in turn led to a revival of the nation. N.B. This book may well have been Deuteronomy. (cf. Deut. 31, vv. 24—26.)

JEREMIAH : *Jeremiah 1, vv. 4—9 ; 20, vv. 7—9 ; 23, vv. 1—6 ; 31, vv. 29—34 ; 38, vv. 1—13 ; 39, vv. 1—10.*
Jeremiah received a clear call to a most difficult task ; he would be opposed and his words ignored. Because no one would listen to him, Jeremiah longed to give up. At length he clearly saw that the future held great blessing for Israel, God's people. He was thus strengthened to endure not only personal suffering but the sight of Israel's defeat and the capture of Jerusalem.

JONAH and RUTH : Both of these books proclaim the mercy of God for Gentiles as well as Jews. In both there is a vivid portrayal of living characters. Additional lessons in Jonah which may be noticed lie in his reason for flight (ch. 4, v. 2) and in the patience of God with his wayward messenger.

PART B. ALTERNATIVE III

The Church in the Modern World

1. Candidates should submit a booklet equivalent in length to 15-20 sides of quarto paper and containing not less than 1,500 words of written material. In addition illustrations and diagrams may be included.
2. Each booklet should include a list of sources used by the candidate.
3. Details as to choice of subject for the course work should be included with the entry form.
4. Content, originality and presentation will be principal factors taken into account in assessment.
5. The topic selected for the course work will be one (and only one) of the following :
 - (a) "The Church or Chapel to which I belong."—Its work and worship down the years and today.
 - (b) "Many churches and one Church."—The story of the movement towards Christian Unity, with special reference to the period from "Edinburgh" to "New Delhi."

- (c) "Inasmuch . . ."—the story of Christian work for
*either the poor in our own land,
 or the sick and handicapped,
 or the refugee and hungry,
 or the children and young people.*
- (d) "Into all the world."—The work of a missionary society *or*
 of a mission field *or* of one missionary.
- (e) "Herein is wisdom" (or "From Bede to New English Bible")
 —the story of the Bible in English.
- (f) "Craftsman's art and music's measure for thy pleasure all
 combine."—The Christian message revealed through Art *or*
 Music.

RURAL STUDIES

(Two papers, one of 40 minutes, one of 1 hour 20 minutes)

General introduction

The syllabus has been devised to try to meet the needs of secondary schools according to their locality and the facilities they have available to teach Rural Studies. It is appreciated that these may vary considerably and it is hoped that schools will select subjects from the optional sections where they are able to reach a reasonable standard of work. Such a standard will be expected to provide a pupil with a basic understanding of related theory and practice, rather than an extensive academic or technical knowledge.

This is a practical subject and it will be noted that the practical section receives the highest percentage of marks. A chart will be prepared by the Chief Examiner listing the practical operations to be carried out by the candidates. This will be sent to the schools and the teachers of Rural Studies will conduct the tests at any time during the final year, *but before the written examinations take place.*

Schools will also be responsible for the marks to be awarded to the record of work or study (Section IV) which must also be completed before the written examinations.

Record sheets will be sent to schools together with question papers. Teachers will be asked to fill in the totals for Section III (practical examination) and Section IV (record of work) and return them with the completed written papers to the Chief Examiner.

The Chief Examiner will then mark the written papers and fill in the totals for Section I and II. He will then give a final grade on all four parts of the examination according to the marks he has on the Record Sheet.

Form of the examination

This has been devised to test the abilities of the candidates by various means and is divided into four parts as follows:—

Section I. A written paper designed as an objective test with short-answer type questions. The answers are to be written in the spaces provided on the question paper. This section must be taken by **all** candidates and is based on Section I of the syllabus. (Time allowed—40 minutes)

Section II. A written paper with a choice of essay-type questions, candidates to select :—

Either Part A Agriculture
or Part B Horticulture
or * Part C General

Four questions to be answered. (Time allowed—one hour 20 minutes)

* N.B. The instruction at the head of Part C must be carefully noted.

Section III. Practical examination

The Chief Examiner will prepare a list of practical tests to be taken by the candidates at their respective schools where the Rural Studies teachers will conduct the tests ; instructions will be provided as to the way in which they are to be carried out. Further advice can be given if requested.

This examination may be undertaken at any time during the final year but *before* the written examinations take place. Details of this practical examination will be sent to the schools by September 1st each year.

Where schools follow a line of study which is not well covered by these tests, they may submit alternatives to the Board for consideration. (See Regulations for Mode 2 and Mode 3 syllabuses in Part II of the Regulations)

Section IV. Diary, record of work, or study

A candidate will, in the final year, be required to submit written evidence of any individual study relevant to the subject. This will be assessed by the Rural Studies teacher at the school concerned. Instructions as to the way in which this assessment and moderation shall be made will be sent to the schools by the Board.

Assessment

Marks will be divided between the four sections as follows:—

| | |
|-------------------|---------------------------------|
| Section I — 25% | } of value of whole examination |
| Section II — 30% | |
| Section III — 35% | |
| Section IV — 10% | |

The syllabus

SECTION I

The Soil. Origin and formation. Igneous, Sedimentary and Metamorphic rocks—with examples. No chemical details required.

Types of soils. Sand, clay, chalk, loam. Texture and structure. Effects on plant growth.

Improvement of soil. Tillage, drainage and movement of water.

Maintenance of soil fertility. Provision of humus. Nitrogen, phosphate, potash and lime. Correction of soil acidity.

Relation of soil organisms to soil fertility. The Nitrogen and Carbon Cycles.

The Plant. Simple cell structure. The position in the plant kingdom of bacteria, fungi, algae, mosses and ferns, gymnosperms and angiosperms.

The structure of a flower. Pollination and fertilisation. Fruit and seed formation and dispersal.

The seed. Structure of monocotyledenous and dicotyledenous seeds, e.g., maize and bean. Germination and necessary conditions.

Root, stem, leaf. Structure of main tissues.

Transpiration. Osmosis. Photosynthesis. Respiration.

Natural vegetative reproduction. Bulbs, corms, stolons, rhizomes and potato.

The Animal. Simple definitions and common sources of proteins, carbohydrates, fats, vitamins and minerals found in animal foodstuffs.

Elementary structure and physiology of a mammal or bird as a basis for the study of circulation, respiration, digestion, excretion, reproduction.

SECTION II

Part A — Agriculture

A simple study of the distribution of the following types of farming in Britain with regard to position, climate, soils and proximity to markets—dairying, fat stock, poultry, arable, mixed.

Crops. Preparation of seed bed. Seed sowing, subsequent cultivation and manurial requirements, crop rotation, harvesting and storing, simple knowledge of tools and machinery (including a basic knowledge of 2 and 4 stroke engines and safety precautions) used in growing the following crops:—

- (a) Cereals
- (b) Root Crops
- (c) Potatoes
- (d) Forage crops—kale, leys, permanent pastures.

Grasses. The recognition and uses of the main agricultural grasses Perennial Rye, Italian Rye, Cocksfoot, Timothy, Meadow Fescue; the clovers—Kent Wild White, Red; lucerne and sainfoin.

Livestock. The raising of farm or smallholding livestock to illustrate general principles of animal management including the value of breeds for specific purposes, methods of housing, methods of feeding, principles of hygiene and troubles due to deficiencies and faulty management.

Clean milk. Principles of cattle management which are necessary for the production of clean milk.

Pests and Diseases. Recognition and control, in animals or plants of any virus disease, fungus disease, bacterial disease, insect or other pest.

Weeds. Recognition and methods for control of ragwort, thistles, couch grass, charlock, docks.

Harmful effects of Wood Pigeon and Rat. Useful effects of owl and hedgehog.

Part B — Horticulture

A study of the distribution of the following types of horticultural enterprises with regard to position, climate, soils and proximity to markets—market gardens, fruit farms, plant nurseries, glasshouse industry.

Crops, Vegetables. A three course rotation utilising the chief types of vegetables, employing catch and inter-cropping. A knowledge of not more than two varieties of each vegetable used is required. General soil cultivations and manurial requirements. Subsequent management including harvesting and storing.

Fruit. Apples, black and red currants, raspberries and strawberries only. Main principles involved in selecting soil, site and layout. Propagation of apples—suitable stocks, stooling, layering, grafting. Forms of tree—Standard Bush, Cordon, Pyramid. Propagation of soft fruits listed above. Planting, pruning and general management.

Protected Crops. A general knowledge of the chief crops and ornamental plants grown under glass. Routine management of crops under glass. Detailed knowledge of the cultivation of the tomato or cucumber as an example of an economic plant, and of any plant normally grown from cuttings. (Candidates to make their own choice of example.) Use of glass to provide bedding and early vegetable plants.

Flowers and Ornamental Plants. Common hardy and half hardy annuals. Common plants of the herbaceous perennial border and flower beds. Bulbs grown in pots and out-of-doors. Identification of the more common shrubs, ornamental trees and hedge plants.

Lawns. A simple knowledge of the establishment and maintenance of lawns.

Pests and Diseases. Recognition and control of any (a) Virus disease, (b) Fungus disease, (c) Insect or other pest.

Recognition and value of the following:—

- (a) The centipede.
- (b) The ladybird.
- (c) Ichneumon fly.

Weeds. Recognition and control of the following:—

Couch, Docks, Ground Elder, Shepherd's Purse, Groundsel, Buttercup.

Part C—General

A pupil may take in Section II Part C either:—

- (a) Agriculture and Horticulture or
- (b) Agriculture or Horticulture, plus two studies, selected from the following groups—(One study per group):—

Group (i) Fruit Gardening; Ornamental Gardening; Bee Keeping.

Group (ii) Poultry Keeping; Pig Keeping; Rabbit Keeping.

Group (iii) Ecological Studies; Forestry; Rural Survey.

Schools are required to inform the Secretary to the Board (for the guidance of the Chief Examiner), at the time of lodging their Entry Forms, which studies will be attempted by their candidates.

Agriculture. A study of one of the following main types of agricultural enterprises in Britain with regard to position, distribution, climate, soils and proximity to markets—dairying, fat stock, poultry, arable, mixed farming, where possible by means of farm visits.

Use of power and common farm implements for cultivation harvesting and storage of farm crops.

The general management of one of the following—cattle, pigs, sheep, poultry, rabbits, goats.

Grassland. Management of one of the following—short term and long term leys and permanent pastures.

The principles, crop rotation and farm hygiene necessary to efficient management of animal and crop production.

Horticulture. A study, where possible by means of visits, of one of the following types of horticultural enterprises with regard to position, climate, soils, markets—plant nurseries, market gardens, glasshouse industry, fruit farms.

Uses and care of common garden implements, soil cultivation, single and double digging, ridging, mulching, seed bed preparation.

Advantages and methods of crop rotation.

Cultivation and management of one plant from each of the groups used in the rotation.

Differences between and treatment of hardy annuals, half hardy annuals, biennials and perennials, with examples of each.

Common methods of vegetative propagation.

The principles of garden hygiene and weed control necessary for efficient crop production.

GROUP STUDIES

Group (i) *Fruit Gardening.* Soft fruits, raspberries, black and red currants only, propagation, management and varieties in general use.

Top fruits. The propagation and management of apples, including fruit stocks, budding and grafting, early stages of pruning of maiden apple to form cordon or bush, principles of pruning mature trees.

or *Ornamental Gardening.* Design and maintenance emphasising one of the following features. Lawn, bedding scheme, the rock garden, the garden pool, garden paths, hedges.

or *Bee Keeping.* Recognition, metamorphosis and uses of the three castes of the bee colony. Varieties of bee. Types of hive, the straw skep, single and double walled. Main sources of nectar and pollen, wax production, comb building. Value of bees, as pollinators. Seasonal manipulations, wintering, spring cleaning, summer care, extracting.

Group (ii) *Poultry Keeping.* Light and heavy breeds, commercial crosses, sex linked crosses. Selection of breeding stock and eggs, natural incubation and rearing compared with artificial methods. Management. Culling, housing and feeding for eggs and table production.

or *Pig Keeping.* Bacon and pork breeds and commercial crosses. Selection of breeding stock, service and gestation, care of in-pig gilts and sows, farrowing, feeding and care of sows and litters. Types of housing and construction materials, drainage, heat insulation and ventilation. Food conversion, types of food and feeding methods. Markets.

or *Rabbit Keeping.* Fancy, fur and table breeds and crosses. Mating, gestation and ante-natal care, post-natal care of does with litters. Breeding records. Designs for stock and breeding hutches. Feeding, balanced diet, concentrated foods, suitable and harmful plants. Management for meat and fur production.

Group (iii) Ecological Studies. The study of one of the following living communities—field, heath, common, wasteland, hedgerow, wood, pond, stream, seashore, a small area left to natural regeneration, lawn, dry wall, to show the interdependence of the plant and animal populations, the effects on them of soil, water and climate and their adaptations to the environment. Adequate original records of aims and methods of observation, results and conclusions must be kept by candidates for inspection by the examiners.

or Forestry. Facilities for practical work are required. The effects of the plant environment and management problems on the choice of tree planted. The nursery, site selection, seed collection, storage, bed preparation and sowing methods. Transplanting, soil cultivations, planting methods, tools, symbiotic associations. Plantation care, weeding, brashing, thinning, pest disease and fire control, measurement of standing trees. Identification and uses of forest trees.

or Rural Survey. Mapping a locality to show its geology, soils, topography, farms and land utilisation. The position and development of the locality and its industries, buildings and places of historic or public interest.

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SCIENCE

- | | |
|----------------------------|----------------------------------|
| (a) BIOLOGY | (d) PHYSICS |
| (b) CHEMISTRY | (e) ENGINEERING SCIENCE |
| (c) GENERAL SCIENCE | (f) THE SCIENCE OF LIVING |

(A common core paper of 1½ hours, a main paper of 2 hours, and a practical examination of between 1 and 2 hours)

(a) **BIOLOGY**

General introduction :

The Board, on the advice of the Regional Subject Panel for Science, wish to make Biology an examination which gives scope to an imaginative teacher. Aware of the many criticisms which have been made of science teaching, the Panel considers that such criticisms, where they are justified, frequently spring more from the way the subject has been examined than from avoidable defects of teaching.

The Subject Panel finds itself in sympathy with the type of question used in the experiment described in Information Series: Examination No. 2 of the Secondary School Examination Council (obtainable on application to the Schools Council, 38, Belgrave Square, London, S.W.1) where emphasis is laid on the ability to apply scientific knowledge and principles rather than on the memorization of facts. Questions consisting of a number of graded sections, or parts, and some which can be answered at several levels will also assist in distinguishing between the wide range of abilities represented by Grades 1 to 5.

The Subject Panel has been concerned that no matter which branch of science a candidate contemplates he should be confronted with a concerted policy. It is thus suggested that each theory paper (Paper II) in Science should offer a choice of 5 questions to be attempted out of 15 set; there should be a Practical Test in each subject, and a Special Study. For the time being, an aggregate score of those obtained on the Common Core Paper I, the Specialist Paper II, the Practical Test and the Special Study, will be considered when awarding Grades. Later, however, a qualifying pass in the Common Core Paper I may be required.

The Practical Test and Special Study will be assessed by the schools themselves and subsequently moderated externally. A Special Study is considered to possess the merits of assessing some of the course work whilst presenting it in a form which can be more easily moderated.

The Board, in presenting the present Science syllabus, wish them to be considered as interim proposals valid for the years 1965 and 1966 only, after which they may be revised in the light of the evaluation sheets to be prepared for each examination. The syllabuses do not attempt to indicate the way in which the matter should be taught; nor do they mean that no other material may be taught. *The syllabuses should be read solely as lists of topics on which questions may be asked.* (It is anticipated that instruction in the appropriate safety measures will be included with the individual topics, although these have not been included for examination purposes in the present publication).

PART I—COMMON CORE

All candidates will be expected to attempt a written paper based on the Common Core syllabus. This syllabus represents the broad core of scientific knowledge which the Subject Panel believes every boy and girl, who has followed a five-year course in Science, should possess.

A good range of questions will be set, covering the whole range of the Common Core syllabus.

Only elementary calculations will be set on Paper I.

Syllabus

Science and the world around us

Topic 1: Air

- a. The atmosphere. Air pressure and the use of any type of barometer in weather forecasting.
- b. Respiration of living organisms, resulting in the release of energy.
- c. The chemistry of combustion. Oxygen used for metal cutting, and respiration in abnormal conditions.
- d. Composition and properties of air.
- e. Air pollution—smoke, bacteria, corrosive gases and their effects. Smoking and health.

Topic 2: Water

- a. Water sources and water supply. The water cycle. The syphon.
- b. Change of state. Ice, water and steam. Simple applications.
- c. Water as a solvent. Crystals, filtration and distillation.
- d. Chemical composition of water. Hydrogen, its properties and uses in industry.
- e. Water and organic life. All things living need water. Osmosis and diffusion. Water as an environment—adaptations of fishes.

Topic 3: Man and the land

- a. Types of soil. Soil exhaustion and fertilizers. Soil erosion and its prevention. General structure and functions of root, stem, leaves, flower and seed. Pollination, fertilization and seed dispersal.
- b. Chalk, sand and clay. Drainage and capillarity. Concrete, bricks and pottery.
- c. Carbon dioxide, limestone—and their uses.

Topic 4: The Earth in space

- a. The sun as a star. The solar system. Night and day; summer and winter.
- b. Gravitation explains the movement of planets, and satellites (natural and man-made).

Energy and its applications

Topic 5:

- a. Simple ideas of atoms and molecules.
- b. Difference between living and non-living things. Release and use of energy. Simple cell structure.
- c. Transformation and conservation of energy.

- d. Sound waves—vibrations as sources, need for a transmission medium. The speed of sound.
- e. Light—propagation, reflection, refraction, uses of lenses (no quantitative questions involving scale drawings will be set). The spectrum and colour. Extension of the spectrum to include (briefly) radio, infra-red, ultra-violet and X-rays.
- f. Atomic radiation, its uses and dangers. Fall-out and its effect on human life (action of Strontium 90); use of radio-isotopes (e.g., tracer techniques, treatment of cancer). (For most recent information on this topic application could be made to W.H.O. and M.O.H.).

Topic 6: Fuels and Energy

- a. Coal, oil and coal gas—occurrence, refining, uses.
- b. Photosynthesis—the fixation of carbon in green plants—as a source of fuels.
- c. The four strokes of the petrol engine.
- d. Magnets—magnetic field, the compass, industrial uses.
- e. Simple electric circuit. Resistance. Good and bad conductors. Volts, amps, ohms, watts.

Topic 7: Application of energy by machines

- a. The use of levers, wheels and gears, as applied to bicycles.
- b. Friction and lubrication. Bearings.

Topic 8: Science in the home

- a. Thermal expansion and its effects. Thermometers. The regulo and thermostat.
- b. The efficient production, transfer and use of heat. Hot water heating systems. Heat insulation. Ventilation.
- c. The difference between heat and temperature. B.t.u., therm and calorie.
- d. Electrical circuit of the home (including plug wiring and loading). Home electrical appliances, heating and lighting, electric fuses. The K.W.H. Method of costing electricity.
- e. Types of food we require. The balanced diet. The large Calorie.
- f. Fibres and plastics, their simple characteristics and domestic uses.
- g. Soap and detergents. The hardness of water and how it can be softened.
- h. The uses of iron, copper, aluminium, and alloys.

Topic 9: The Human Body

- a. Bones for support and protection.
- b. Movement.
- c. Blood for transport of materials.
- d. Food for energy, growth and repair. The purpose of digestion (no physiological detail required).
- e. Excretion, e.g., kidney and lung (secondary function of skin).
- f. Communication. The function (not structure) of the brain, spinal cord and nerves.
- g. The eye, ear and skin. Function and simple defects.
- h. Reproduction.

Topic 10: Interdependence and environment

- a. Food chains.
- b. Bacteria and disease—personal and domestic hygiene. Food storage and food hygiene.

Topic 11 :

1. Heredity

- a. Selective plant and animal breeding, leading to increased food supply.
- b. Simple explanation of hereditary characteristics, e.g., hair and eye colouring in humans, or any single factor in animals or plants.
- c. Simple account of chromosomes (the use of films is recommended).

2. Evolution

General evidence of the build-up from simple to complex animals (museum visits and the study of fossils are recommended).

PART II—BIOLOGY

This part of the examination will consist of three subsections, which must *all* be taken :

- (b) a theoretical paper ;
- (c) a practical test ;
- (a) a special study.

Subsection (a)—the Theory Paper

This paper will offer the candidate a choice of problems (5 to be attempted out of 15 set), to which he will have to apply his scientific knowledge. Candidates will be asked to answer at least two questions from Section I and at least one question from Section II, the remaining two questions may be taken from either Section.

It is intended that Section II shall contain at least one very general question so that a candidate may make some effort to answer it, even if little applied biology has been attempted in the school course. This, and the degree of choice given, is intended to give teachers freedom in working within the framework of the syllabus. It is the hope of the Subject Panel that the following full and detailed syllabus will assist towards that end ; it is not expected that all parts of the syllabus will be covered.

The marks awarded on this paper will take account of a candidate's originality, the grasp shown of principles of simple experimental investigation and the ability to apply scientific knowledge. These will rank as of equal value to the memorized facts.

Syllabus

Section I represents the "academic" part of the syllabus and Section II its application.

SECTION I

Characteristics of living things

1. Cell structure
2. Specialization of cells
3. Simple classification. Use of keys.

(It is thought possible that all necessary knowledge on this subject could be obtained by keeping some of the animals and plants under observation for a period of time, and also by

ecological studies. It is anticipated that one or two lessons only should be spent on the actual explanation of classification).

a. Invertebrates

protozoa — hydra or sea anemone — earthworm — crustaceans
— insects — mulluses.

b. Vertebrates

(This should be taught from the evolutionary angle :)
fish → frog → reptile → bird → mammal, to include man.

c. Plants

seaweed or other algae — fungi — mosses — ferns — flowering plants.

4. Human anatomy and physiology

Respiration (see Atmosphere B3).

Digestion (see Food B5).

Reproduction (expansion of Common Core, Topic 9h). To include care and development of the foetus.

Skin and temperature control.

Excretion (see Digestion and Respiration).

Circulation (see Digestion and Respiration).

Nervous System (expansion of Common Core, Topic 9f). To include Central Nervous System.

Endocrine System.

5. Anatomy of a flowering plant

Parts of a plant and their uses } (expansion of Common
Parts of a flower and their functions } Core, Topic 3a)

B. Physical and biological aspects

1. The soil—origin and formation of soil—structure in relation to plant needs. (Expansion of Common Core, topic 3a).

2. The gardener and farmer.

Fertilizers—N, K, P, natural and artificial. Importance of humus. Nitrogen cycle—simplified account. (No specific bacteria or chemistry involved.)

3. The atmosphere—photosynthesis—experimental approach.

Carbon cycle as applied only to respiration and photosynthesis (more detail under B5).

The biological problems of Man in Space.

4. Water—as an environment and transport agent—cooling effect, turgor, solvent, regulation, ingredient for photosynthesis, protoplasm, excretion, plasmolysis.

a. Importance to (i) Plant life

1. plasmolysis, turgor, osmosis
2. solvent and protoplasm
3. transpiration and cooling effect
4. photosynthesis
5. transport
6. germination

} Most of this section is taught in Common Core, Topic 2

(ii) **Animal life**

- 1. protoplasm and water as a solvent, digestion (refer to turgor)
 - 2. sweating, temperature control, excretion
 - 3. blood
 - b. Adaptations of organisms to life in water (plant and animal)
 - 1. Respiration
 - 2. Locomotion
 - 3. Buoyancy
 - 4. Temperature—adaptations of warm-blooded animals to this environment
 - 5. Effect on reproduction—ease of reproduction (refer back to evolution)
 - 5. Food—types, uses, deficiency diseases, digestion (nutrition, assimilation, dentition, etc.), food chains, photosynthesis, mineral salts and protein synthesis, diffusion and osmosis.
 - 6. Fermentation and putrefaction of food.
- } Most of this section is taught in Common Core, Topic 2
- } No detail required

SECTION II

C. Applied biology

- 1. Preservation of food
 - a. drying and dehydration
 - b. freezing, chilling, deep freezing
 - c. sterilizing
 - d. pasteurization
 - e. osmotic pressure—salted food, and jam
 - f. smoking
 - g. chemical additives
- 2. Balance of Nature (refer back to carbon and nitrogen cycles—conservation of matter)
 - a. competitive survival of the fittest
 - b. interference—balance of Nature upset (insecticides, pest control),
Nature conservation—revision of work on insects and importance with regard to spread of disease (plant and animal diseases), pollination, destruction of food, scavenging
- 3. Control of environment
 - a. Effective uses of natural resources
 - 1. forestry
 - 2. agriculture
 - 3. horticulture
 - 4. weed control
 - 5. sea husbandry
 - b. Artificial environments
 - 1. length of day
 - 2. factory animal management
 - 3. hydroponics
 - 4. the greenhouse

4. Selective plant and animal breeding
(This would largely be observations based on work over a period of time. It is suggested that one factor be studied in plants or animal breeding to show the effect of selection).
Suggestions :
 1. experiments using variegated maize
 2. a small mammal
 3. animals (cattle, sheep, poultry)—outside visits
(Expansion of Common Core work).
5. Small animal husbandry—housing, feeding, etc.

D. Social and economic aspects

1. Health
 - a. disease causing organisms, bacteria, viruses, fungi, etc.
 - b. treatment of cuts and burns, oral resuscitation
 - c. immunization—vaccination and antibiotics
 - d. revise food preservation
2. Public Health
(Knowledge to be based as far as possible on the result of visits to such places as waterworks, sewage works, disposal of refuse, dairy, department of M.O.H., etc.)
3. A knowledge of the work done by international organizations, particularly F.A.O. (details obtainable from Min. of Agriculture) and W.H.O. (details obtainable from School of Tropical Medicine and Hygiene).

Subsection (b)—the Practical Test

The Board will offer a choice of experiments (requiring relatively simple apparatus such as a razor blade or sharp penknife and a simple pair of tweezers). These will be set out, each on a printed proforma giving adequate instructions about apparatus, procedure and presentation of results. The co-operation of the school staff will be sought in assessing candidates for :

- (a) their ability at interpreting and carrying out instructions ;
 - (b) their grasp of method, procedure, and the accuracy of their technique ;
 - (c) their ability to draw simple conclusions from experimental data.
- The school's assessment will be moderated externally.

Suggestions :

1. an experiment to observe and from which to draw conclusions
2. identification of a specimen using a simple key
3. observation and comparison of specimens
4. one simple experiment to perform themselves (e.g., a food test).

Subsection (c)—the Special Study

The intention of this section is to encourage a candidate to study in depth and detail a specialized aspect of biology, not necessarily on the syllabus, at a level appropriate to his development. It is the hope of the Board that schools will encourage their candidates to carry out this Study in the spirit of investigation. Indeed, evidence of practical work carried out by the candidate must be shewn.

For this Special Study the following subjects are suggested: human biology; social biology; insects; an ecological study; a bird study; flowers; genetic factors; grasses; a tree study; populations.

This Study is a piece of work done over a period of time, to be submitted for assessment. The subject is to be tested orally and assessed in the school by the teacher, the assessment being subject to external moderation. It is suggested that the Study should occupy something of the order of 10 hours' work in the last year, to be regarded as the minimum necessary in producing this Study. This assumes that preparation, in the form of reading, sketching, collecting material, etc., will be done out of school hours, on the candidate's own initiative.

Each Study should be an individual effort; duplication should be discouraged. Assistance rendered should be limited to the provision of facilities and materials, and to constructive criticism while the work is in progress. The candidate should plan his study in outline, and execute it as far as possible on his own initiative, the extent of which should be taken into account by the school in assessing the result.

(b) CHEMISTRY

General introduction

The Board, on the advice of the Regional Subject Panel for Science, wish to make Chemistry an examination which gives scope to an imaginative teacher. Aware of the many criticisms which have been made of science teaching, the Panel considers that such criticisms, where they are justified, frequently spring more from the way the subject has been examined than from avoidable defects of teaching. Acids, bases, elements, atoms, salts, are the bricks and mortar of chemistry but it is up to the teacher to direct the way in which these fundamental concepts are used. Instead of confining chemistry to the laboratory one can look for basic causes and effects in the laboratory, and then having found them apply them to the everyday world. The properties of acids, carbonates and chlorine can, for example, be applied to domestic bleach, soda, Harpic, etc., and thus chemistry can be lifted from a subject that can only be done in a special room and brought within the range of the kitchen and bathroom.

The Subject Panel finds itself in sympathy with the type of question used in the experiment described in Information Series: Examination No. 2 of the Secondary School Examinations Council (obtainable on application to the Schools Council, 38, Belgrave Square, London, S.W.1), where emphasis is laid on the ability to apply scientific knowledge and principles rather than on the memorization of facts. Questions will be included which can be answered at different levels of knowledge. These may consist of graded sections, or parts, in order that whereas a less bright candidate may see a reaction and give an accurate description, and may even be able to name the substances involved, a brighter candidate may extend this to the type of chemical action taking place, and the brightest may be able to comment on a possible energy change, giving reasons for that reaction taking place, and may even be able to give an application to everyday life. In this way it is hoped to distinguish between the very wide range of abilities represented by Grades 1 to 5.

The Subject Panel has been concerned that no matter which branch of science a candidate contemplates he should be confronted with

a concerted policy. It is thus suggested that each theory paper (paper II) in Science should offer a choice of 5 questions to be attempted out of 15 set; there should be a Practical Test in each subject, and a Special Study. For the time being, an aggregate score of those obtained on the Common Core Paper I, the Specialist Paper II, the Practical Test and the Special Study, will be considered when awarding Grades. Later, however, a qualifying pass in the Common Core Paper I may be required.

The Practical Test and Special Study will be assessed by the schools themselves and then subsequently moderated externally. A Special Study is considered to possess the merits of assessing some of the course work whilst presenting it in a form which can be more easily moderated.

The Board, in presenting the present Science syllabuses, wish them to be considered as interim proposals valid for the years 1965 and 1966 only, after which they may be revised in the light of the evaluation sheets to be prepared for each examination. The syllabuses do not attempt to indicate the way in which the matter should be taught; nor do they mean no other matter may be taught. *The syllabuses should be read solely as a list of topics on which questions may be asked.* (It is anticipated that instruction in the appropriate safety measures will be included with the individual topics, although these have not been included for examination purposes in the present publication.)

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GLASGOW

PART I—COMMON CORE

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A good range of questions will be set, covering the whole range of the Common Core syllabus.

Only elementary calculations will be set on Paper I.

Syllabus

Science and the world around us

Topic 1: Air

- a. The atmosphere. Air pressure and the use of any type of barometer in weather forecasting.
- b. Respiration of living organisms, resulting in the release of energy.
- c. The chemistry of combustion. Oxygen used for metal cutting, and respiration in abnormal conditions.
- d. Composition and properties of air.
- e. Air pollution—smoke, bacteria, corrosive gases and their effects. Smoking and health.

Topic 2: Water

- a. Water sources and water supply. The water cycle. The syphon.
- b. Change of state. Ice, water and steam. Simple applications.
- c. Water as a solvent. Crystals, filtration and distillation.
- d. Chemical composition of water. Hydrogen, its properties and uses in industry.
- e. Water and organic life. All things living need water. Osmosis and diffusion. Water as an environment—adaptations of fishes.

Topic 3: Man and the land

- a. Types of soil. Soil exhaustion and fertilizers. Soil erosion and its prevention. General structure and functions of root, stem, leaves, flower and seed. Pollination, fertilization and seed dispersal.
- b. Chalk, sand and clay. Drainage and capillarity. Concrete, bricks and pottery.
- c. Carbon dioxide, limestone—and their uses.

Topic 4: The Earth in space

- a. The sun as a star. The solar system. Night and day; summer and winter.
- b. Gravitation explains the movement of planets, and satellites (natural and man-made).

Energy and its applications

Topic 5:

- a. Simple ideas of atoms and molecules.
- b. Difference between living and non-living things. Release and use of energy. Simple cell structure.

- c. Transformation and conservation of energy.
- d. Sound waves—vibrations as sources, need for a transmission medium. The speed of sound.
- e. Light—propagation, reflection, refraction, uses of lenses (no quantitative questions involving scale drawings will be set). The spectrum and colour. Extension of the spectrum to include (briefly) radio, infra-red, ultra-violet and X-rays.
- f. Atomic radiation, its uses and dangers. Fall-out and its effect on human life (action of Strontium 90); uses of radio-isotopes (e.g., tracer techniques, treatment of cancer). (For most recent information on this topic application could be made to W.H.O. and M.O.H.)

Topic 6 : Fuels and energy

- a. Coal, oil and coal gas—occurrence, refining, uses.
- b. Photosynthesis—the fixation of carbon in green plants as a source of fuels.
- c. The four strokes of the petrol engine.
- d. Magnets—magnetic field, the compass, industrial uses.
- e. Simple electric circuit. Resistance. Good and bad conductors. Volts, amps, ohms, watts.

Topic 7 : Application of energy by machines

- a. The use of levers, wheels and gears, as applied to bicycles.
- b. Friction and lubrication. Bearings.

Topic 8 : Science in the home

- a. Thermal expansion and its effects. Thermometers. The regulo and thermostat.
- b. The efficient production, transfer and use of heat. Hot water heating system. Heat insulation. Ventilation.
- c. The difference between heat and temperature. B.T.U., therm and calorie.
- d. Electrical circuit of the home (including plug wiring and loading). Home electrical appliances, heating and lighting, electric fuses. The K.W.H. Method of costing electricity.
- e. Types of food we require. The balanced diet. The large Calorie.
- f. Fibres and plastics, their simple characteristics and domestic uses.
- g. Soap and detergents. The hardness of water and how it can be softened.
- h. The uses of iron, copper, aluminium and alloys.

Topic 9 : The Human Body

- a. Bones for support and protection.
- b. Movement.
- c. Blood for transport of materials.
- d. Food for energy, growth and repair. The purpose of digestion (no physiological detail required).
- e. Excretion, e.g., kidney and lung (secondary function of skin).
- f. Communication. The function (not structure) of the brain, spinal cord and nerves.
- g. The eye, ear and skin. Function and simple defects.
- h. Reproduction.

Topic 10 : Interdependence and environment

- a. Food chains.
- b. Bacteria and disease—personal and domestic hygiene. Food storage and food hygiene.

Topic 11 :

1. Heredity

- a. Selective plant and animal breeding, leading to increased food supply.
- b. Simple explanation of hereditary characteristics, e.g., hair and eye colouring in humans, or any single factor in animals or plants.
- c. Simple account of chromosomes (the use of films is recommended).

2. Evolution

General evidence of the build-up from simple to complex animals (museum visits and the study of fossils are recommended).

PART II—CHEMISTRY

This part of the examination will consist of three subsections, which must *all* be taken :

- (a) a theoretical paper ;
- (b) a practical test ;
- (c) a special study.

Subsection (a)—the Theory Paper

This paper will offer the candidate a choice of problems (5 to be attempted out of 15 set), to which he will have to apply his scientific knowledge. A greater choice will be allowed from the questions set on Phase II than from those set on Phase I.

Candidates will be expected to show by their answers that *they* have performed practical experiments illustrating the subject matter, particularly the fundamental processes of solution, evaporation, distillation, crystallization, precipitation, neutralization, thermal decomposition and titration.

The marks awarded on this paper will take into account a candidate's originality, the grasp shown of principles of simple experimental investigation, and the ability to apply scientific knowledge. These will rank as of equal value to the memorized facts.

Syllabus

The syllabus has been divided into Phase I and Phase II. It is intended that Phase I should cover the essential concepts and processes of chemistry. Phase II is the selected applications of these processes.

PHASE I

1. Matter

Matter is made of molecules.

The states of matter and their inter-conversion.

Melting and boiling points of some common materials—water, alcohol, naphthalene.

Distillation as a means of purifying liquids.

2. Water

Synthesis by burning hydrogen, and decomposition by electrolysis of dilute sulphuric acid.

Solubility and solubility curves of potassium chlorate and sodium chloride.

Water of crystallization, deliquescence and efflorescence; specify sodium carbonate, potassium chloride, calcium chloride, copper sulphate and sodium hydroxide. Impurities in common salt causing deliquescence.

3. Acids, bases and salts

General properties of acids and bases.

General methods of preparation of acids, bases and salts—

Acids: non-metallic oxide plus water, displacement of volatile by less volatile acid, direct combination;

Bases: direct combination, precipitation of oxides and hydroxides, thermal decomposition of carbonates;

Salts: direct combination, metal plus acid (oxidizing acids to be avoided), acid plus base, acid plus carbonate, double decomposition.

4. Metals

The activity series, K, Na, Ca, Mg, Al, Zn, Fe, Pb, Cu, Hg. Their reaction to air, water and hydrochloric acid.

Extraction of metals from metallic oxide by carbon, coal gas or hydrogen.

5. Nature of matter

Elements, mixtures and compounds as illustrated by iron, sulphur and iron sulphide.

Physical and chemical change. Exothermal and endothermal reactions.

Elementary structure of the atom (protons, neutrons and electrons).

Relative masses of atoms.

Atomic weight scale.

Classification of elements with similar characteristics as an elementary consideration of the Periodic Table.

Electric current as a flow of electrons in metallic conductors and of ions in an electrolyte.

The action of a direct current on substances in solution in water—common salt, copper sulphate, dilute sulphuric acid.

Electron transfer with formation of ions.

Electron sharing to form covalent bond.

Number of electrons gained or lost—valency.

Percentage composition of simple (binary) compounds, leading to ratio of number of atoms present.

Simple formulæ.

The idea of the gram atom. Gram formulæ.

Simple equations and their quantitative interpretation.

PHASE II

1. Compounds of nitrogen

Ammonia, laboratory preparation, basic properties and tests.

Ammonium salts. Chloride. Sulphate.

Laboratory preparation of nitric acid. (Uses of potassium, sodium, calcium nitrates.)

A test for nitrates.

The occurrence of nitrogen and the nitrogen cycle.

Importance of the "fixation" of nitrogen from the air.

(Mention in outline Haber process, bacteria, lightning.)

2. Sulphur and its compounds

Sulphur, its occurrence, crystallization from the melt and from solution in carbon disulphide.

Sulphide ores—the source of zinc, iron, lead, mercury and sulphur. (Methods of extraction are not required.)

Laboratory preparation of hydrogen sulphide. Lead acetate test.

Laboratory preparation of sulphur dioxide from sodium sulphite, and its conversion to sulphur trioxide.

The Contact Process and sulphuric acid.

Tests for sulphates. (Precipitation test.)

3. Chlorine and its compounds

Common salt (occurrence and importance).

Laboratory preparation of hydrogen chloride—its solution in water.

Acid properties of solution.

Preparation (from hydrochloric acid by means of manganese dioxide) and properties of chlorine — bleaching, chlorination of water; burning of hydrogen, sodium, iron in chlorine.

Sodium, calcium, ferric and silver chlorides.

Test for chlorides.

Industrial production of chlorine from brine.

4. Carbon and its compounds

Forms of carbon.

Preparation and properties of carbon dioxide. Solution and acidity.

Combustion, limewater test.

Uses of carbon dioxide.

Carbonates (copper, calcium, sodium).

Tests for carbonates.

Calcium carbonate in Nature—the hardness of water—formation of stalagmites and stalactites.

Bicarbonate of soda and washing soda.

The Solway Process.

Origins of coal, thermal decomposition to give coal gas, ammonia, tar and coke.

Reference to compounds derived from these.

Natural petroleum, fractionation, uses of fractions—petrol, paraffin, lubricating oil, vaseline and paraffin wax.

Cane sugar as an organic compound, simple properties—soluble in water, non-electrolyte, decomposed by heat.

Fermentation of sugar.

Distillation of alcohol.

5. Extraction of iron and manufacture of steels

6. Electrolytic extraction and purification of copper and aluminium

7. Commercial manufacture of oxygen by liquefaction of air, and of hydrogen by any one process

Subsection (b)—the Practical Test

The Board will offer a choice of experiments (requiring relatively simple apparatus). These will be set out, each on a printed proforma, giving adequate instructions about apparatus, procedure and presentation of results. The co-operation of the school staff will be sought in assessing candidates for:

- (a) their ability at interpreting and carrying out instructions;
- (b) their grasp of method, procedure, and the accuracy of their technique;
- (c) their ability to draw simple conclusions from experimental data.

The school's assessment will be moderated externally.

Subsection (c)—the Special Study

The intention of this section is to encourage a candidate to study in depth and detail a specialized aspect of chemistry, not necessarily on the syllabus, at a level appropriate to his development. It is the hope of the Board that schools will encourage their candidates to carry out this Study in the spirit of investigation. Indeed, evidence of practical work carried out by the candidate must be shown.

This Special Study could take any of the following forms:

- (a) An illustrated manuscript book embodying the candidate's investigation of a topic or person of importance in connection with any aspect of the subject;
- (b) A working model,* or an illustrated manuscript book explaining in the candidate's own words the experimental development of some scientific topic, or alternatively its practical applications;
* Any working model, at the candidate's/teacher's discretion, will be acceptable.
- (c) Reports of some simple experimental investigations, devised, carried out and recorded in a methodical and scientific way, with the conclusions stated.

This Study is a piece of work done over a period of time, to be submitted for assessment. The subject is to be tested orally and assessed in the school by the teacher, the assessment being subject to external moderation. It is suggested that the Study should occupy something of the order of 10 hours' work in the last year, to be regarded as the minimum necessary in producing this Study, this time to be spent on the actual physical preparation of the booklet, model, report, etc. This assumes that preparation, in the form of reading, sketching, collecting material, etc., will be done out of school hours, on the candidate's own initiative.

Each Study should be an individual effort; duplications should be discouraged. Assistance rendered should be limited to the provision of facilities and materials, and to constructive criticism whilst the work is in progress. The candidate should plan his study in outline, and execute it as far as possible on his own initiative, the extent of which should be taken into account by the school in assessing the result.

(c) GENERAL SCIENCE

General introduction :

The Board, on the advice of the Regional Subject Panel for Science, wish to make General Science an examination which gives scope to an imaginative teacher. Aware of the many criticisms which have been made of science teaching, the Panel considers that such criticisms, where they are justified, frequently spring more from the way the subject has been examined than from avoidable defects of teaching.

The Subject Panel finds itself in sympathy with the type of question used in the experiment described in Information Series: Examination No. 2 of the Secondary School Examinations Council (obtainable on application to the Schools Council, 38, Belgrave Square, London, S.W.1) where emphasis is laid on the ability to apply scientific knowledge and principles rather than on the memorization of facts. Questions consisting of a number of graded sections, or parts, and some which can be answered at several levels will also assist in distinguishing between the very wide range of abilities represented by Grades 1 to 5.

The Subject Panel has been concerned that no matter which branch of science a candidate contemplates he should be confronted with a concerted policy. It is thus suggested that each theory paper (paper II) in Science should offer a choice of 5 questions to be attempted out of 15 set; there should be a Practical Test in each subject, and a Special Study. For the time being, an aggregate score of those obtained on the Common Core Paper I, the Specialist Paper II, the Practical Examination and the Special Study, will be considered when awarding grades. Later, however, a qualifying pass in the Common Core Paper I may be required.

The Practical Test and Special Study will be assessed by the schools themselves and subsequently moderated externally. A Special Study is considered to possess the merits of assessing some of the course work whilst presenting it in the form which can be more easily moderated.

The Board, in presenting the present Science syllabuses, wish them to be considered as interim proposals valid for the years 1965 and 1966 only, after which they may be revised in the light of the evaluation sheets to be prepared for each examination. The syllabuses do not attempt to indicate the way in which the matter should be taught; nor do they mean that no other matter may be taught. *The syllabuses should be read solely as lists of topics on which questions may be asked.* (It is anticipated that instruction in the appropriate safety measures will be included with the individual topics, although these have not been included for examination purposes in the present publication.)

PART I—COMMON CORE

All candidates will be expected to attempt a written paper based on the Common Core syllabus. This syllabus represents the broad core of scientific knowledge which the Subject Panel believes every boy and girl, who has followed a five-year course in Science, should possess.

A good range of questions will be set, covering the whole range of the Common Core syllabus.

Only elementary calculations will be set on Paper I.

Syllabus

Science and the world around us

Topic 1: Air

- a. The atmosphere. Air pressure and the use of any type of barometer in weather forecasting.
- b. Respiration of living organisms, resulting in the release of energy.
- c. The chemistry of combustion. Oxygen used for metal cutting, and respiration in abnormal conditions.
- d. Composition and properties of air.
- e. Air pollution—smoke, bacteria, corrosive gases and their effects, Smoking and health.

Topic 2: Water

- a. Water sources and water supply. The water cycle. The syphon.
- b. Change of state. Ice, water and steam. Simple applications.
- c. Water as a solvent. Crystals, filtration and distillation.
- d. Chemical composition of water. Hydrogen, its properties and uses in industry.
- e. Water and organic life. All things living need water. Osmosis and diffusion. Water as an environment—adaptations of fishes.

Topic 3: Man and the land

- a. Types of soil. Soil exhaustion and fertilizers. Soil erosion and its prevention. General structure and functions of root, stem, leaves, flower and seed. Pollination, fertilization and seed dispersal.
- b. Chalk, sand and clay. Drainage and capillarity. Concrete, bricks and pottery.
- c. Carbon dioxide, limestone—and their uses.

Topic 4: The Earth in space

- a. The sun as a star. The solar system. Night and day; summer and winter.
- b. Gravitation explains the movement of planets, and satellites (natural and man-made).

Energy and its applications

Topic 5 :

- a. Simple ideas of atoms and molecules.
- b. Difference between living and non-living things. Release and use of energy. Simple cell structure.
- c. Transformation and conservation of energy.
- d. Sound waves—vibrations as sources, need for a transmission medium. The speed of sound.
- e. Light—propagation, reflection, refraction, uses of lenses (no quantitative questions involving scale drawings will be set). The spectrum and colour. Extension of the spectrum to include (briefly) radio, infra-red, ultra-violet and X-rays.
- f. Atomic radiation, its uses and dangers. Fall-out and its effect on human life (action of Strontium 90) ; use of radio-isotopes (e.g. tracer techniques, treatment of cancer). (For the most recent information on this topic application could be made to W.H.O. and M.O.H.)

Topic 6 : Fuels and energy

- a. Coal, oil and coal gas—occurrence, refining, uses.
- b. Photosynthesis—the fixation of carbon in green plants—as a source of fuels.
- c. The four strokes of the petrol engine.
- d. Magnets—magnetic field, the compass, industrial uses.
- e. Simple electric circuit. Resistance. Good and bad conductors. Volts, amps, ohms, watts.

Topic 7 : Application of energy by machines

- a. The use of levers, wheels and gears, as applied to bicycles.
- b. Friction and lubrication. Bearings.

Topic 8 : Science in the home

- a. Thermal expansion and its effects. Thermometers. The regulo and thermostat.
- b. The efficient production, transfer and use of heat. Hot water heating system. Heat insulation. Ventilation.
- c. The difference between heat and temperature. B.t.u., therm and calorie.
- d. Electrical circuit of the home (including plug wiring and loading). Home electrical appliances, heating and lighting, electric fuses. The K.W.H. Method of costing electricity.
- e. Types of food we require. The balanced diet. The large Calorie.
- f. Fibres and plastics, their simple characteristics and domestic uses.
- g. Soap and detergents. The hardness of water and how it can be softened.
- h. The uses of iron, copper, aluminium, and their alloys.

Topic 9 : The Human Body

- a. Bones for support and protection.
- b. Movement.
- c. Blood for transport of materials.
- d. Food for energy, growth and repair. The purpose of digestion (no physiological detail required).

- e. Excretion, e.g., kidney and lung (secondary function of skin).
- f. Communication. The function (not structure) of the brain, spinal cord and nerves.
- g. The eye, ear and skin. Function and simple defects.
- h. Reproduction.

Topic 10 : Interdependence and environment

- a. Food chains.
- b. Bacteria and disease—personal and domestic hygiene. Food storage and food hygiene.

Topic 11 :

1. Heredity

- a. Selective plant and animal breeding leading to increased food supply.
- b. Simple explanation of hereditary characteristics, e.g., hair and eye colouring in humans, or any single factor in animals or plants.
- c. Simple account of chromosomes (the use of films is recommended).

2. Evolution

General evidence of the build-up from simple to complex animals (museum visits and the study of fossils are recommended).

PART II—GENERAL SCIENCE

This part of the examination will consist of three subsections, which must *all* be taken :

- (a) a theoretical paper ;
- (b) a practical test ;
- (c) a special study.

Subsection (a) — the Theory Paper

This paper will offer the candidate a choice of problems (5 to be attempted out of 15 set), to which he will have to apply his scientific knowledge.

- (i) to explain everyday observations or happenings ;
- or (ii) to devise simple ways of testing, in a scientific context, an everyday statement or advertising assertion ;
- or (iii) to exercise his imagination to suggest a simple scientific hypothesis, which might account for a given set of "observed facts."

The marks awarded on this paper will take account of a candidate's originality, the grasp shown of principles of simple experimental investigation and the ability to apply scientific knowledge. These will rank as of equal value to the memorized facts.

The Syllabus and its relationship to the examination

The Subject Panel does not propose directly to test the range of a candidate's knowledge beyond the Common Core syllabus, but the syllabus will be treated in greater depth and detail. It aims to shift the emphasis of the examination from memorization of facts or theories to the intelligent application of what is known, and the development of a spirit of investigation. It hopes thus to leave teachers free to develop science teaching along the lines which will stimulate pupils. But if the minimum coverage of the Common Core syllabus were to become the maximum taught, the Panel would feel that the whole aim of the more

liberal approach were lost. It is certain, however, that schools will be able to profit fully by a greater degree of freedom.

Subsection (b) — the Practical Test

The Board will offer a choice of experiments (requiring relatively simple apparatus). These will be set out, each on a printed proforma, giving adequate instructions about apparatus, procedure and presentation of results. The co-operation of the school staff will be sought in assessing candidates for:

- (a) their ability at interpreting and carrying out instructions;
 - (b) their grasp of method, procedure, and the accuracy of their technique;
 - (c) their ability to draw simple conclusions from experimental data.
- The school's assessment will be moderated externally.

Subsection (c) — the Special Study

The intention of this section is to encourage a candidate to study in depth and detail a specialised aspect of general science, not necessarily on the syllabus, at a level appropriate to his development. It is the hope of the Board that schools will encourage their candidates to carry out this Study in the spirit of investigation. Indeed, evidence of practical work carried out by the candidate must be shown.

This Special Study could take any of the following forms:

- (a) An illustrated manuscript book embodying the candidate's investigation of a topic or a person of importance in connection with any aspect of the subject;
- (b) A working model,* or a set of at least six posters of personally-designed diagrams; or an illustrated manuscript book explaining in the candidate's own words the experimental development of some scientific topic, or alternatively its practical applications;
- (c) Reports of some simple experimental investigations, devised, carried out and recorded in a methodical and scientific way, with the conclusions stated.

* Any working model, at the candidate's/teacher's discretion, will be acceptable.

This Study is a piece of work done over a period of time, to be submitted for assessment. The subject is to be tested orally and assessed in the school by the teachers, the assessment being subject to external moderation. It is suggested that the Study should occupy something of the order of 10 hours' work in the last year to be regarded as the minimum necessary in producing this Study, this time to be spent on the actual physical production of the booklet, model, report, etc. This assumes that preparation, in the form of reading, sketching, collecting material, etc., will be done out of school hours, on the candidate's own initiative.

Each Study should be an individual effort; duplication should be discouraged. Assistance rendered should be limited to the provision of facilities and materials, and to constructive criticism while the work

One representative of Youth Employment Service :

is in progress. The candidate should plan his/her study in outline, and execute it as far as possible on his/her own initiative, the extent of which should be taken into account by the school in assessing the result.

(d) PHYSICS

General introduction :

The Board, on the advice of the Regional Subject Panel for Science, wish to make Physics an examination which gives scope to an imaginative teacher. Aware of the many criticisms which have been made of science teaching, the Panel considers that such criticisms, where they are justified, frequently spring more from the way the subject has been examined than from avoidable defects of teaching.

The Subject Panel finds itself in sympathy with the type of question used in the experiment described in Information Series: Examination No. 2 of the Secondary School Examinations Council (obtainable on application to the Schools Council, 38, Belgrave Square, London, S.W.1) where emphasis is laid on the ability to apply scientific knowledge and principles rather than on the memorization of facts. Candidates will, at times, be required to devise their own experimental procedure, and the capacity to do this will obviously need encouragement and development. The Special Study should provide one of the opportunities to develop this capacity. Questions consisting of a number of graded sections, or parts, and some which can be answered at several levels will also assist in distinguishing between the very wide range of abilities represented by Grades 1 to 5.

The Subject Panel has been concerned that no matter which branch of science a candidate contemplates he should be confronted with a concerted policy. It is thus suggested that each theory paper (paper II) in Science should offer a choice of 5 questions to be attempted out of 15 set; there should be a Practical Test in each subject, and a Special Study. For the time being, an aggregate score of those obtained in the Common Core Paper I, the Specialist Paper II, the Practical Test and the Special Study, will be considered when awarding Grades. Later, however, a qualifying pass in the Common Core Paper I may be required.

The Practical Test and Special Study will be assessed by the schools themselves and subsequently moderated externally. A Special Study is considered to possess the merits of assessing some of the course work whilst presenting it in a form which can be more easily moderated.

The Board, in presenting the present Science syllabuses, wish them to be considered as interim proposals valid for the years 1965 and 1966 only, after which they may be revised in the light of the evaluation sheets to be prepared for each examination. The syllabuses do not attempt to indicate the way in which the subject matter should be taught; nor do they mean that no other may be taught. *The syllabuses should be read solely as lists of topics on which questions may be asked.* (It is anticipated that instruction in the appropriate safety measures will be included with the individual topics, although these have not been included for examination purposes, in the present publication.)

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PART I—COMMON CORE

All candidates will be expected to attempt a written paper based on the Common Core syllabus. This syllabus represents the broad core of scientific knowledge which the Subject Panel believes every boy and girl, who has followed a five-year course in Science, should possess.

A good range of questions will be set, covering the whole range of the Common Core syllabus.

Only elementary calculations will be set on Paper I.

Syllabus

Science and the world around us

Topic 1: Air

- The atmosphere. Air pressure and the use of any type of barometer in weather forecasting.
- Respiration of living organisms, resulting in the release of energy.
- The chemistry of combustion. Oxygen used for metal cutting, and respiration in abnormal conditions.
- Composition and properties of air.
- Air pollution—smoke, bacteria, corrosive gases and their effects. Smoking and health.

Topic 2: Water

- Water sources and water supply. The water cycle. The syphon.
- Change of state. Ice, water and steam. Simple applications.
- Water as a solvent. Crystals, filtration and distillation.
- Chemical composition of water. Hydrogen, its properties and uses in industry.
- Water and organic life. All things living need water. Osmosis and diffusion. Water as an environment—adaptations of fishes.

Topic 3: Man and the land

- Types of soil. Soil exhaustion and fertilizers. Soil erosion and its prevention. General structure and functions of root, stem, leaves, flower and seed. Pollination, fertilization and seed dispersal.
- Chalk, sand and clay. Drainage and capillarity. Concrete, bricks and pottery.
- Carbon dioxide, limestone—and their uses.

Topic 4: The Earth in space

- The sun as a star. The solar system. Night and day; summer and winter.
- Gravitation explains the movement of planets, and satellites (natural and man-made).

Energy and its applications

Topic 5:

- Simple ideas of atoms and molecules.
- Difference between living and non-living things. Release and use of energy. Simple cell structure.
- Transformation and conservation of energy.

- d. Sound waves—vibrations as sources, need for a transmission medium. The speed of sound.
- e. Light—propagation, reflection, refraction, uses of lenses (no quantitative questions involving scale drawings will be set). The spectrum and colour. Extension of the spectrum to include (briefly) radio, infra-red, ultra-violet and X-rays.
- f. Atomic radiation, its uses and dangers. Fall-out and its effect on human life (action of Strontium 90); uses of radio-isotopes (e.g., tracer techniques, treatment of cancer). (For most recent information on this topic application could be made to W.H.O. and M.O.H.)

Topic 6 : Fuels and energy

- a. Coal, oil and coal gas—occurrence, refining, uses.
- b. Photosynthesis—the fixation of carbon in green plants as a source of fuels.
- c. The four strokes of the petrol engine.
- d. Magnets—magnetic field, the compass, industrial uses.
- e. Simple electric circuit. Resistance. Good and bad conductors. Volts, amps, ohms, watts.

Topic 7 : Application of energy by machines

- a. The use of levers, wheels and gears, as applied to bicycles.
- b. Friction and lubrication. Bearings.

Topic 8 : Science in the home

- a. Thermal expansion and its effects. Thermometers. The regulo and thermostat.
- b. The efficient production, transfer and use of heat. Hot water heating system. Heat insulation. Ventilation.
- c. The difference between heat and temperature. B.t.u., therm and calorie.
- d. Electrical circuit of the home (including plug wiring and loading). Home electrical appliances, heating and lighting, electric fuses. The k.W.h. Method of costing electricity.
- e. Types of food we require. The balanced diet. The large Calorie.
- f. Fibres and plastics, their simple characteristics and domestic uses.
- g. Soap and detergents. The hardness of water and how it can be softened.
- h. The uses of iron, copper, aluminium, and alloys.

Topic 9 : The Human Body

- a. Bones for support and protection.
- b. Movement.
- c. Blood for transport of materials.
- d. Food for energy, growth and repair. The purpose of digestion (no physiological detail required).
- e. Excretion, e.g., kidney and lung (secondary function of skin).
- f. Communication. The function (not structure) of the brain, spinal cord and nerves.
- g. The eye, ear and skin. Function and simple defects.
- h. Reproduction.

Topic 10 : Interdependence and environment

- a. Food chains.
- b. Bacteria and disease—personal and domestic hygiene. Food storage and food hygiene.

Topic 11 :

1. Heredity

- a. Selective plant and animal breeding leading to increased food supply.
- b. Simple explanation of hereditary characteristics, e.g., hair and eye colouring in humans, or any single factor in animals or plants.
- c. Simple account of chromosomes (the use of films is recommended).

2. Evolution

General evidence of the build-up from simple to complex animals (museum visits and the study of fossils are recommended).

PART II—PHYSICS

This part of the examination will consist of three subsections, which must *all* be taken :

- (a) a theory paper ;
- (b) a practical test ;
- (c) a special study.

Subsection (a) — the Theory Paper

This paper will offer the candidate a choice of problems (5 to be attempted out of 15 set) to which he will have to apply his scientific knowledge.

- (i) to explain everyday observations or happenings ;
- or (ii) to devise simple ways of testing, in a scientific context, an everyday statement or advertising assertion ;
- or (iii) to exercise his/her imagination to suggest a simple scientific hypothesis, which might account for a given set of "observed facts."

The marks awarded will take account of a candidate's originality, the grasp shown of principles of simple scientific experimental investigation and the ability to apply scientific knowledge. These will rank as of equal value to the memorized facts.

Syllabus

This syllabus has been devised to provide a background of knowledge of the subject which will enable a student to understand in some measure what is going on in the world around him and to follow new developments in physics as they arise.

Sections have been included, for example that on radioactivity, which may be considered by some too advanced for the type of student who will take this examination ; the Board consider however that their subject matter is already an important part of life today and will become more important in the future. A simplified study can be made with profit, provided only elementary aspects are considered.

In general the Subject Panel believes that this syllabus should provide scope for a stimulating and interesting new approach to physics.

Items covered in the Common Core syllabus

(The number in brackets after the item refers to the topic number in the Common Core syllabus.)

The atmosphere. Air pressure and the use of any type of barometer in weather forecasting. (1a)

Change of state. Ice, water and steam. Simple applications. (2b)

The syphon. (2a)

The sun as a star. The solar system. Night and day; summer and winter. (4a)

Gravitation explains the movement of planets, and satellites (natural and man-made). (4b)

Simple ideas of atoms and molecules. (5a)

Transformation and conservation of energy. (5c)

Sound waves—vibrations as sources, need for transmission medium.

Speed of sound. (5d)

Light—propagation, reflection, refraction, use of lenses. The spectrum and colour. Extension of the spectrum to include (briefly) radio, infra-red, ultra-violet and X-rays. (5e)

Atomic radiation, its uses and dangers. (5f)

The four strokes of the petrol engine. (6c)

Magnets—magnetic field, the compass, industrial uses. (6d)

Simple electric circuit. Resistance. Good and bad conductors. Volts, amps, ohms and watts. (6e)

The uses of levers, wheels and gears, as applied to bicycles. (7a)

Friction and lubrication. Bearings. (7b)

Thermal expansion and its effects. Thermometers. The regulo and thermostat. (8a)

The efficient production, transfer and use of heat. Hot water heating system. Heat insulation. Ventilation. (8b)

The difference between heat and temperature. B.t.u., therm and calorie. (8c)

The electric circuit of the home (including plug wiring and loading).

Home electrical appliances, heating and lighting, electric fuses.

The k.W.h. Method of costing electricity. (8d)

The eye. Function and simple defects. (9g)

1. Energetics

Simple velocity and acceleration treated experimentally (but not involving equations of motion); force, work and power.

Changes in forms of energy as in internal combustion engines, and steam and gas turbines.

Heat exchanges, specific heat; changes of state, latent heat. (Simple calculations may be set on all parts of this section. Candidates will be allowed a choice of c.g.s. or British units, alternative questions being set. Questions involving heat will ignore the heat capacity of any containing vessel.)

2. Structure

Time and distance measurements. Limitations of human sense perceptions.

Differences of molecular state to be found in solids, liquids and gases. Size of molecule (see S.M.A. Report on Teaching Modern Physics).

Molecules — atoms — electrons (static positive and negative charges, etc.).

The atom as a miniature "solar system"; protons, neutrons and electrons (charge and relative size); idea of "free" electrons.

3. Current electricity

Conductors as materials with random movement of free electrons; insulators; electric current as a unidirectional movement of free electrons (the ampere as a definite rate of flow of electrons);

e.m.f. as the energy necessary to produce this movement. Use of voltmeter and ammeter, to measure p.d. and current respectively. Use of voltmeter and ammeter, and assumption of Ohm's Law, to determine resistance (resistance being defined as the ratio of p.d. and current); resistances in series and parallel (including simple problems). Concepts of coulomb, ampere, volt, ohm and watt (no formal definitions will be asked for).

4. Magnetism

Simple molecular theory of magnetism. Attraction between magnetic poles, lines of force, magnetic field, field due to one or more bar magnets, field due to a current flowing in a straight conductor and in a coil, effect of magnetic core, difference in magnetic properties of iron and steel, the electro-magnet and simple practical applications.

5. Force on a current carrying conductor

(Note: to enable teachers to use either electron flow or conventional flow of current in their teaching, in both this section, section 8 and section 9, a knowledge of the relative directions of current, e.m.f. and magnetic field, as given by the Left and Right Hand Rules, will not be tested.)

Force on a straight wire in a magnetic field; moving coil meter; electric motor (construction of simple electric motors); moving coil loudspeaker.

6. Chemical effect of a current

Electrolytes and non-electrolytes; electrolysis, ions and ionic drift, electro-plating — dependence of weight of deposit on current and time.

Chemical change producing an electric current, Galvani, Volta, simple voltaic cell (polarization treated superficially). Use of cells in series and parallel. Use, care and charging of lead-acid accumulators.

7. Heating effect of an electric current

The amount of heat produced dependent upon current, resistance and time. Power in an electric circuit, examples from the home. Reading the electric meter, the kilowatt hour, costing electricity (simple mathematical calculations may be set).

8. Electromagnetic induction

Effect of moving a magnet in a coil, simple qualitative ideas of magnetic induction; primary and secondary coils, induction coil, car ignition system, transformers; generators (construction of simple models), difference between alternating current and direct current, cycle dynamo.

9. Generation and distribution of electricity

Alternators and the methods by which they are driven. The National Electric Grid system. Need for transmission at high voltage and the convenience of alternating current.

10. Radioactivity

(Subject to the findings, as far as practical work is concerned, of the Association for Science Education and the S.S.E.C., the results of whose deliberations are likely to be published in January, 1965.)

Mass number, unstable nuclei, disintegrations, half life; conversion of mass into energy, chain reaction, the atomic bomb; action of a moderator, atomic reactors; fusion.

Background radiation (for example, natural radiation, cosmic rays, T.V. sets). Uses of radioisotopes (for example, tracer techniques). (It is hoped that demonstrations of half life, and the use of radio-isotopes will be arranged. The effect of radiation on photographic film might be included to give a basis for more practical work. But see *Notes, IRN, 1964 (Department of Education and Science)*).

11. Simple electronics

Construction of simple circuits using semiconductor diodes for half wave rectification (without smoothing) and transistors for audio frequency amplification.

High voltage discharge through air, discharge at low pressure; fluorescent lamp; cathode ray tube, magnetic and electrostatic deflection of negative rays. (DO NOT OPERATE HIGH VACUUM TUBES AT MORE THAN 5,000 volts, i.e. 5mm. spark between points of an induction coil. See *Notes, IRN, 1964*.)

Emission of electrons from a heated filament; the diode valve (use as rectifier); the triode valve (use in amplifying circuit). (See *Department of Education Pamphlet No. 13—"Safety Precautions in Schools"*).

12. Sound

Vibrations at sources of sound; need for a transmission medium. Speed of sound and simple means of its estimation; echoes.

Sound emitted by strings and pipes; pitch, frequency, wavelength; resonance.

13. Mechanics

Levers, block and tackle, inclined plane and screw thread, and their uses. Efficiency as the ratio of work output to work input (not efficiency = M.A./V.R.).

Density of solids and liquids by direct measurement of mass and volume; displacement method of measuring solid volumes. Relative density—the ratio of two densities.

Pressure in fluids. Mercury and aneroid barometers. Floating and sinking.

14. Light

(No quantitative questions involving scale drawings will be set.)

Uses of curved mirrors.

Refraction through glass and water; total internal reflection and its applications.

Uses of converging and diverging lenses; magnifying glass; eye, correction for long and short sight; camera and projector.

Prisms, dispersion of light; the spectrum.

Colour mixing by addition and subtraction. Effects of different lights on coloured objects.

Subsection (b) — the Practical Test

The Board will offer a choice of experiments (requiring relatively simple apparatus). These will be set out, each on a separate proforma, giving adequate instructions about apparatus, procedure and presentation of results. The co-operation of school staff will be sought in assessing candidates for:

- (a) their ability at interpreting and carrying out instructions ;
 - (b) their grasp of method, procedure, and the accuracy of their technique ;
 - (c) their ability to draw simple conclusions from experimental data.
- The school's assessment will be moderated externally.

Subsection (c) — the Special Study

The intention of this section is to encourage a candidate to study in depth and detail a specialized aspect of physics, not necessarily on the syllabus, at a level appropriate to his/her development. It is the hope of the Board that schools will encourage their candidates to carry out this Study in a spirit of investigation. Indeed, evidence of practical work carried out by the candidate must be shown.

This Special Study could take any of the following forms :

- (a) an illustrated manuscript book embodying the candidate's investigation of a topic, or a person of importance, in connection with any aspect of physics ;
- (b) a working model,* or a set of at least six posters or personally-designed diagrams ; or an illustrated manuscript book explaining in the candidate's own words the experimental development of some scientific topic, or alternatively its practical applications ;
- (c) reports of some simple experimental investigations, devised, carried out and recorded in a methodical and scientific way, with the conclusions stated.

* Any working model, at the candidate's/teacher's discretion, will be acceptable.

This Study is a piece of work done over a period of time to be submitted for assessment. The subject is to be tested orally and assessed in the school by the teachers, the assessment being subject to external moderation. It is suggested that the Study should occupy something of the order of 10 hours' work in the last year, to be regarded as the minimum necessary in producing this Study, this time to be spent on the actual physical production of the booklet, model, report, etc. This assumes that preparation, in the form of reading, sketching, collecting material, etc., will be done out of school hours, on the candidate's own initiative.

Each Study should be an individual effort ; duplication should be discouraged. Assistance rendered should be limited to the provision of facilities and materials, and constructive criticism while the work is in progress. The candidate should plan his study in outline and execute it as far as possible on his own initiative, the extent of which should be taken into account by the school in assessing the result.

(e) ENGINEERING SCIENCE

General introduction :

This syllabus is considered suitable for those who hope to specialise later in civil, electrical, marine or mechanical engineering.

The rationalised MKS system of units is to be used throughout. This implies not only the use of the rationalised MKS units and formulæ, but also that the rationalised MKS approach to the subject should be

adopted. Heat problems should be worked in joules or kilocalories, as is appropriate.

It is hoped that teachers will place emphasis on the understanding of principles rather than on rote learning, and to this end a list of formulæ, definitions and laws will be provided in the examination from which candidates may glean necessary information. Simple calculations may be set, but the object of these will be to test understanding rather than mathematical prowess. This syllabus, however, is not a teaching syllabus and it does not necessarily indicate the order in which subject matter should be taught, nor does it mean that no other may be taught. Indeed, candidates will be expected to be familiar with those parts of the Common Core syllabus dealing with physics and particularly those leading to the material contained in this syllabus.

It is hoped that candidates who obtain, say, Grade 4 in this examination and have obtained the requisite standard in, say, mathematics, English, technical drawing and metalwork, may be admitted directly into the G* or City and Guilds Technician courses, and those obtaining Grade 1, with the appropriate supporting subjects, may enter directly into the Ordinary National Certificate course.

PART 1—COMMON CORE

All candidates will be expected to attempt a written paper based on the Common Core syllabus. This syllabus represents the broad core of scientific knowledge which the Subject Panel believes every boy or girl, who has followed a five-year course in Science, should possess.

A good range of questions will be set, covering the whole range of the Common Core syllabus.

Only elementary calculations will be set on Paper I.

Syllabus

Science and the world around us

Topic 1: Air

- a. The atmosphere. Air pressure and the use of any type of barometer in weather forecasting.
- b. Respiration of living organisms, resulting in the release of energy.
- c. The chemistry of combustion. Oxygen used for metal cutting, and respiration in abnormal conditions.
- d. Composition and properties of air.
- e. Air pollution—smoke, bacteria, corrosive gases and their effects. Smoking and health.

Topic 2: Water

- a. Water sources and water supply. The water cycle. The syphon.
- b. Change of state. Ice, water and steam. Simple applications.
- c. Water as a solvent. Crystals, filtration and distillation.
- d. Chemical composition of water. Hydrogen, its properties and uses in industry.
- e. Water and organic life. All things living need water. Osmosis and diffusion. Water as an environment—adaptations of fishes.

Topic 3 : Man and the land

- a. Types of soil. Soil exhaustion and fertilizers. Soil erosion and its prevention. General structure and functions of root, stem, leaves, flower and seed. Pollination, fertilization and seed dispersal.
- b. Chalk, sand and clay. Drainage and capillarity. Concrete, bricks and pottery.
- c. Carbon dioxide, limestone—and their uses.

Topic 4 : The Earth in space

- a. The sun as a star. The solar system. Night and day ; summer and winter.
- b. Gravitation explains the movement of planets, and satellites (natural and man-made).

Energy and its applications**Topic 5 :**

- a. Simple ideas of atoms and molecules.
- b. Difference between living and non-living things. Release and use of energy. Simple cell structure.
- c. Transformation and conservation of energy.
- d. Sound waves—vibrations as sources, need for a transmission medium. The speed of sound.
- e. Light—propagation, reflection, refraction, uses of lenses (no quantitative questions involving scale drawings will be set). The spectrum and colour. Extension of the spectrum to include (briefly) radio, infra-red, ultra-violet and X-rays.
- f. Atomic radiation, its uses and dangers. Fall-out and its effect on human life (action of Strontium 90) ; use of radio-isotopes (e.g., tracer techniques, treatment of cancer). (For most recent information on this topic application could be made to W.H.O. and M.O.H.).

Topic 6 : Fuels and Energy

- a. Coal, oil and coal gas—occurrence, refining, uses.
- b. Photosynthesis—the fixation of carbon in green plants—as a source of fuels.
- c. The four strokes of the petrol engine.
- d. Magnets—magnetic field, the compass, industrial uses.
- e. Simple electric circuit. Resistance. Good and bad conductors. Volts, amps, ohms, watts.

Topic 7 : Application of energy by machines

- a. The use of levers, wheels and gears, as applied to bicycles.
- b. Friction and lubrication. Bearings.

Topic 8 : Science in the home

- a. Thermal expansion and its effects. Thermometers. The regulator and thermostat.
- b. The efficient production, transfer and use of heat. Hot water heating system. Heat insulation. Ventilation.
- c. The difference between heat and temperature. B.t.u., therm and calorie.
- d. Electrical circuit of the home (including plug wiring and loading). Home electrical appliances, heating and lighting, electric fuses. The K.W.H. Method of costing electricity.
- e. Types of food we require. The balanced diet. The large Calorie.
- f. Fibres and plastics, their simple characteristics and domestic uses.

- g. Soap and detergents. The hardness of water and how it can be softened.
- h. The uses of iron, copper, aluminium, and their alloys.

Topic 9: The Human Body

- a. Bones for support and protection.
- b. Movement.
- c. Blood for transport of materials.
- d. Food for energy, growth and repair. The purpose of digestion (no physiological detail required).
- e. Excretion, e.g., kidney and lung (secondary function of skin).
- f. Communication. The function (not structure) of the brain, spinal cord and nerves.
- g. The eye, ear and skin. Function and simple defects.
- h. Reproduction.

Topic 10: Interdependence and environment

- a. Food chains.
- b. Bacteria and disease—personal and domestic hygiene. Food storage and food hygiene.

Topic 11:

1. Heredity

- a. Selective plant and animal breeding leading to increased food supply.
- b. Simple explanation of hereditary characteristics, e.g., hair and eye colouring in humans, or any single factor in animals or plants.
- c. Simple account of chromosomes (the use of films is recommended).

2. Evolution

General evidence of the build-up from simple to complex animals (museum visits and the study of fossils are recommended).

PART II—ENGINEERING SCIENCE

This part of the examination will consist of three subsections, which must *all* be taken:

- (a) a theoretical paper;
- (b) a practical test;
- (c) a special study.

Syllabus

Subsection (a)—the Theory Paper

1. Mechanics

Simple treatment of velocity and acceleration (including graphical treatment and the equations of motion). Distinction between mass and weight. Simple treatment of force (including the relationship $\text{Force} = \text{mass} \times \text{acceleration}$; work, work done by a force inclined to the direction of motion; power; energy. Machines: efficiency as the ratio of power output to power input, or work output to work input if output and input occupy the same time (not efficiency = M.A./V.R.); mechanical advantage and velocity ratio. Lever, wheel and axle, block and tackle, inclined plane and screw thread as examples of machines.

Energy conversions between different forms of mechanical energy (including potential and kinetic energy), heat, electrical and chemical energy.

Static and dynamic coefficients of friction.

Force and velocity vectors; resultant of two or more forces (by drawing); equilibrium of forces at a point, triangle or forces.

Resolution of a force into two components at right angles (by drawing or calculation).

Forces applied to solids: tension, compression and shear; the meaning of stress and strain; Hooke's Law, tensile testing of materials, load extension graph to breaking point.

Moment of a force about a point, equilibrium of moments. Centre of gravity, its position in oblong, triangular and circular laminas, cylinder, sphere and cuboid.

Densities of solids and liquids by direct measurement of mass and volume; displacement method of measuring solid volumes. Relative density—the ratio of two densities. Floating and sinking. Force, area and pressure. Pressure at a point in a liquid. Archimedes' principle.

2. Heat

Temperature and its measurement (including thermocouples).

Expansion of solids, liquids and gases, coefficient of linear expansion; simple temperature, pressure, volume relationships; the absolute scale of temperatures.

Quantity of heat, heat exchanges, thermal capacity; changes of state, melting point, boiling point, latent heat. (Examination questions will ignore the heat capacity of any containing vessel.)

3. Structure of Matter

Time and distance measurements. Limitations of human sense perceptions.

Differences of molecular state to be found in solids, liquids and gases. Size of molecule (see S.M.A. Report on Teaching of Modern Physics).

Molecules, atoms, electrons (static positive and negative charges, etc.).

The atom as a nucleus with orbiting electrons; protons, neutrons and electrons (charge and relative size); the concept of "free electrons."

4. Current Electricity

Conductors as materials with random movement of free electrons; insulators; electric current as the net unidirectional movement of free electrons.

Use of ammeter and voltmeter to measure current and p.d. respectively; use of voltmeter and ammeter (and assumption of Ohm's Law) to determine resistance (resistance being defined as the ratio of p.d. and current), dependence of resistance upon length and cross-sectional area, resistivity; change of resistance with temperature, temperature coefficient of resistance; resistances in series and parallel.

Concepts of quantity of electricity, current, e.m.f., p.d., resistance, energy, power, and their units.

5. Magnetism

Magnetic field of a straight current-carrying conductor; magnetic field of a loop; magnetic field of a solenoid, effect of introducing iron core. Ferro-magnetism explained by simple domain theory—molecular electromagnets. Different magnetic properties of iron and steel. Magnetic flux; flux density.

Moving iron instruments, their construction and principles of operation.

6. Motor and Generator Action

Force between two straight current-carrying conductors parallel to each other.

Force on a straight current-carrying conductor at right angles to a magnetic field—motor action.

E.m.f. induced in a conductor by relative motion of conductor and magnetic field—generator action. Back e.m.f. as reaction.

Moving coil instruments, their construction and principle of operation, shunts and multipliers. D.C. motors and generators (basic principles only), electrical-mechanical energy conversion.

7. Alternating Currents

Generation of an alternating e.m.f. by relative motion of conductor and magnetic field. Amplitude, periodic time, frequency, and their graphical representation.

8. Induction

Inductive effect of a alternating current flowing in a straight conductor on a conductor parallel to it. Inductive effect of an alternating current flowing in a loop on another loop parallel to it. Self inductance. Effect of iron cores. Primary and secondary coils; transformer action.

9. Heating Effect of Currents

Amount of heat produced in a resistor by a direct current dependent on voltage, current, resistance, time. Power in an electric circuit. Electrical equivalent of heat. Heating effect of an alternating current. R.M.S. value of alternating current and voltage.

10. Chemical Effect of a Current

Electrolytes and non-electrolytes; electrolysis, ions and ionic drift; electro-plating, dependence of mass of deposit on current and time, electro-chemical equivalent.

Subsection (b)—the Practical Test

The Board will offer a choice of experiments (requiring relatively simple apparatus). These will be set out, each on a printed proforma, giving adequate instructions about apparatus, procedure and presentation of results. The co-operation of the school staff will be sought in assessing candidates for:

- (a) their ability at interpreting and carrying out instructions;
- (b) their grasp of method, procedure, and the accuracy of their technique;
- (c) their ability to draw simple conclusions from experimental data.

The school's assessment will be moderated externally.

Subsection (c) — the Special Study

The intention of this section is to encourage a candidate to study in depth and detail a specialised aspect of engineering science, not necessarily on the syllabus, at a level appropriate to his development. It is the hope of the Board that schools will encourage their candidates to carry out this Study in the spirit of investigation. Indeed, evidence of practical work carried out by the candidate must be shown.

This Special Study could take any of the following forms :

- (a) An illustrated manuscript book embodying the candidate's investigation of a topic or person of importance in connection with any aspect of the subject ;
- (b) A working model,* or an illustrated manuscript book explaining in the candidate's own words the experimental development of some scientific topic, or alternatively its practical applications ;
* Any working model, at the candidate's/teacher's discretion, will be acceptable.
- (c) Reports of some simple experimental investigations, devised, carried out and recorded in a methodical and scientific way, with the conclusions stated.

This Study is a piece of work done over a period of time, to be submitted for assessment. The subject is to be tested orally and assessed in the school by the teachers, the assessment being subject to external moderation. It is suggested that the Study should occupy something of the order of 10 hours' work in the last year to be regarded as the minimum necessary in producing this Study, this time to be spent on the actual physical production of the booklet, model, report, etc. This assumes that preparation, in the form of reading, sketching, collecting material, etc., will be done out of school hours, on the candidate's own initiative.

Each Study should be an individual effort ; duplications should be discouraged. Assistance rendered should be limited to the provision of facilities and materials, and to constructive criticism while the work is in progress. The candidate should plan his study in outline, and execute it as far as possible on his own initiative, the extent of which should be taken into account by the school in assessing the result.

(f) THE SCIENCE OF LIVING

General introduction :

This syllabus has been devised after consultation with representatives of the schools, technical education and the nursing profession. It is intended to be a broadly based course of work leading to the acquisition of knowledge required to measure positive health rather than the prevention and cure of ill-health.

It is hoped that despite some of the rather academic-sounding list of topics, the subject will be taught very broadly and that excessive detail will be avoided, particularly when dealing with topics such as the skeleton. Memorisation of names of all the bones and muscles will definitely *not* be required.

It is intended that the syllabus shall be acceptable to both sexes.

It is essential that the theoretical knowledge gained from such a syllabus should be applied in daily life towards the development of habits leading to a happy and healthy mode of living. There are numerous ways in which this linkage of theory and practice can be achieved ; it is not for the Board to dictate the methods. For the benefit of those who seek further guidance a memorandum of suggested practical work may be obtained on application to the Board.

PART I—COMMON CORE

All candidates will be expected to attempt a written paper based on the Common Core syllabus. This syllabus represents the broad core of scientific knowledge which the Subject Panel believes every boy and girl, who has followed a five-year course in Science, should possess.

A good range of questions will be set, covering the whole range of the Common Core syllabus.

Only elementary calculations will be set on Paper I.

Syllabus

Science and the world around us

Topic 1: Air

- The atmosphere. Air pressure and the use of any type of barometer in weather forecasting.
- Respiration of living organisms, resulting in the release of energy.
- The chemistry of combustion. Oxygen used for metal cutting, and respiration in abnormal conditions.
- Composition and properties of air.
- Air pollution—smoke, bacteria, corrosive gases and their effects. Smoking and health.

Topic 2: Water

- Water sources and water supply. The water cycle. The syphon.
- Change of state. Ice, water and steam. Simple applications.
- Water as a solvent. Crystals, filtration and distillation.
- Chemical composition of water. Hydrogen, its properties and uses in industry.
- Water and organic life. All things living need water. Osmosis and diffusion. Water as an environment—adaptations of fishes.

Topic 3: Man and the land

- Types of soil. Soil exhaustion and fertilizers. Soil erosion and its prevention. General structure and functions of root, stem, leaves, flower and seed. Pollination, fertilization and seed dispersal.
- Chalk, sand and clay. Drainage and capillarity. Concrete, bricks and pottery.
- Carbon dioxide, limestone—and their uses.

Topic 4: The Earth in space

- The sun as a star. The solar system. Night and day; summer and winter.
- Gravitation explains the movement of planets, and satellites (natural and man-made).

Energy and its applications

Topic 5:

- Simple ideas of atoms and molecules.
- Difference between living and non-living things. Release and use of energy. Simple cell structure.
- Transformation and conservation of energy.
- Sound waves—vibrations as sources, need for a transmission medium. The speed of sound.
- Light—propagation, reflection, refraction, use of lenses (no quantitative questions involving scale drawings will be set). The spectrum and colour. Extension of the spectrum to include (briefly) radio, infra-red, ultra-violet and X-rays.

- f. Atomic radiation, its uses and dangers. Fall-out and its effect on human life (action of Strontium 90); uses of radio-isotopes (e.g., tracer techniques, treatment of cancer). (For most recent information on this topic application could be made to W.H.O. and M.O.H.).

Topic 6: Fuels and Energy

- a. Coal, oil and coal gas—occurrence, refining, uses.
- b. Photosynthesis—the fixation of carbon in green plants—as a source of fuels.
- c. The four strokes of the petrol engine.
- d. Magnets—magnetic field, the compass, industrial uses.
- e. Simple electric circuit. Resistance. Good and bad conductors. Volts, amps, ohms, watts.

Topic 7: Application of energy by machines

- a. The use of levers, wheels and gears, as applied to bicycles.
- b. Friction and lubrication. Bearings.

Topic 8: Science in the home

- a. Thermal expansion and its effects. Thermometers. The regulo and thermostat.
- b. The efficient production, transfer and use of heat. Hot water heating system. Heat insulation. Ventilation.
- c. The difference between heat and temperature. B.t.u., therm and calorie.
- d. Electrical circuit of the home (including plug wiring and loading). Home electrical appliances, heating and lighting, electric fuses. The K.W.H. Method of costing electricity.
- e. Types of food we require. The balanced diet. The large Calorie.
- f. Fibres and plastics, their simple characteristics and domestic uses.
- g. Soap and detergents. The hardness of water and how it can be softened.
- h. The uses of iron, copper, aluminium, and their alloys.

Topic 9: The Human Body

- a. Bones for support and protection.
- b. Movement.
- c. Blood for transport of materials.
- d. Food for energy, growth and repair. The purpose of digestion (no physiological detail required).
- e. Excretion, e.g., kidney and lung (secondary function of skin).
- f. Communication. The function (not structure) of the brain, spinal cord and nerves.
- g. The eye, ear and skin. Function and simple defects.
- h. Reproduction.

Topic 10: Interdependence and environment

- a. Food chains.
- b. Bacteria and disease—personal and domestic hygiene. Food storage and food hygiene.

Topic 11:

1. Heredity

- a. Selective plant and animal breeding leading to increased food supply.

- b. Simple explanation of hereditary characteristics, e.g., hair and eye colouring in humans, or any single factor in animals or plants.
- c. Simple account of chromosomes (the use of films is recommended).

2. Evolution

General evidence of the build-up from simple to complex animals (museum visits and the study of fossils are recommended).

PART II—THE SCIENCE OF LIVING

This part of the examination will consist of three subsections, which must *all* be taken :

- (a) a theoretical paper ;
- (b) a practical test ;
- (c) a special study.

Syllabus

Subsection (a)—the Theory Paper

1. The Human Body

Body cells and tissues. Basic structure and function. Skeleton as a framework. (Details of specialised cells and tissues in relation to their function are included in the relevant sections.)

2. Energy

- (a) *Food and digestion*
 - (i) Types of food and their uses.
 - (ii) Regions of the alimentary canal and associated glands and enzymes. Mechanical and chemical digestion.
 - (iii) Absorption and assimilation.
 - (iv) Functions of the liver.
 - (v) Balanced diet, regular personal habits, oral hygiene, including the structure of teeth.
- (b) *Circulatory system*
 - (i) Heart and blood vessels as a double pump with a system of conducting vessels.
 - (ii) Structure of blood and functions of its component parts.
 - (iii) Tissue fluid and lymph with a simple idea of functions.
 - (iv) Pressure points and arterial bleeding.
- (c) *Respiratory system*
 - (i) Structure and function of the system.
 - (ii) Exchange and transport of gases, and release of energy by cells.
 - (iii) Effects of exercise on temperature, pulse rate and breathing rate.
 - (iv) Hygiene — air pollution, smoking, industrial diseases, ventilation, artificial respiration.

3. Response to Environment

- (a) *Nervous system*—function.
- (b) Parts—Central nervous system (3 main parts of the brain and their functions, spinal cord), nerves, sense organs.
- (c) Simple reflex action—conditioned reflexes—voluntary actions.
- (d) Hygiene—mental health, uses and abuses of drugs, care of the sense organs.
- (e) *Skeletal and locomotive systems*—Axis with appended limbs.

- (f) Composition and structure of bone tissue.
- (g) Functions of the skeleton.
- (h) Movement—importance of joints, levers, muscles, tendons.
- (i) Types of joint—synovial (ball and socket, hinge), fixed.
- (j) Posture—importance of exercise and rest—muscle tone.
- (k) *Skin*—simple structure.
- (l) Temperature control—clothing.
- (m) Other functions of skin—protective, sensory, etc.
- (n) Hygiene.
- (o) *Endocrine system*—co-ordination—a balanced system of control.
Pituitary, thyroid, pancreas, adrenal and sex glands and their position in the body. Functions of their principal hormones.

4. Reproduction

- (a) Structure, position and simple physiology of male and female organs.
- (b) Fertilisation, growth and development of the foetus.
- (c) Birth.
- (d) Growth, development, puberty.
- (e) Personal hygiene.
- (f) Family life.
- (g) Heredity—cell structure (revision) including chromosomes.
Cell division and reduction division, recessive and dominant characteristics, some inherited characteristics.

5. Wastes

- (a) Excretion—urine, carbon dioxide, etc.—structure and function of kidneys, lungs, etc.
- (b) Elimination—faeces, etc.
- (c) Sewage.
- (d) Refuse collection and disposal.

6. Healthy Living

- (a) Clean air.
- (b) Clean food.
- (c) Clean water.
- (d) Personal hygiene—all aspects.
- (e) Parasitic animals—agents of diseases.
- (f) Protection against occupational disease.
- (g) National Health Scheme.

7. Diseases

- (a) Causes—diet, glandular, bacteria, viruses, fungi and radiation.
- (b) Ways in which diseases are transmitted.
- (c) Food poisoning, typhoid, smallpox, malaria, common cold, venereal diseases, poliomyelitis.
- (d) Immunity—natural and artificial.
- (e) Famous fighters against disease and their discoveries.
- (f) Control of disease.

8. Home safety

- (a) Causes and avoidance of accidents in the home, e.g., burns and scalds, electric shock, poisoning, falls.
- (b) Simple first aid treatment.

9. Homes

- (a) Housing.
- (b) Heating.
- (c) Lighting.
- (d) Ventilation.
- (e) Water Supply.
- (f) Sanitation—washing and toilet facilities.
- (g) Refuse collection and disposal.
- (h) Town planning.

10. International Health

- (a) International organisations, e.g., F.A.O., W.H.O.
- (b) World food problems
- (c) Populations.

Subsection (b) — the Practical Test

The Board will offer a choice of experiments (requiring relatively simple apparatus). These will be set out, each on a printed proforma, giving adequate instructions about apparatus, procedure and presentation of results. The co-operation of the school staff will be sought in assessing candidates for:

- (a) their ability at interpreting and carrying out instructions;
- (b) their grasp of method, procedure, and the accuracy of their technique;
- (c) their ability to draw simple conclusions from experimental data.

The school's assessment will be moderated externally.

Subsection (c) — the Special Study

The intention of this section is to encourage a candidate to study in depth and detail a specialised aspect of the science of living, not necessarily on the syllabus, at a level appropriate to his development. It is the hope of the Board that schools will encourage their candidates to carry out this Study in the spirit of investigation. Indeed, evidence of practical work carried out by the candidate must be shown.

This Special Study could take any of the following forms:

- (a) An illustrated manuscript book embodying the candidate's investigation of a topic or a person of importance in connection with any aspect of the subject;
- (b) A working model,* or a set of at least six posters of personally-designed diagrams; or an illustrated manuscript book explaining in the candidate's own words the experimental development of some scientific topic, or alternatively its practical applications;
- (c) Reports of some simple experimental investigations, devised, carried out and recorded in a methodical and scientific way, with the conclusions stated.

* Any working model, at the candidate's/teacher's discretion, will be acceptable.

This Study is a piece of work done over a period of time, to be submitted for assessment. The subject is to be tested orally and assessed in the school by the teacher, the assessment being subject to external moderation. It is suggested that the Study should occupy something of the order of 10 hours' work in the last year, to be regarded as the

minimum necessary in producing this Study, this time to be spent on the actual physical preparation of the booklet, model, report, etc. This assumes that preparation, in the form of reading, sketching, collecting material, etc., will be done out of school hours, on the candidate's own initiative.

Each study should be an individual effort; duplication should be discouraged. Assistance rendered should be limited to the provision of facilities and materials, and to constructive criticism while the work is in progress. The candidate should plan his study in outline, and execute it as far as possible on his own initiative, the extent of which should be taken into account by the school in assessing the result.

TECHNICAL DRAWING

(Two papers of 2 hrs. each)

General introduction

Although the content of the syllabus is of necessity essentially traditional, the desire of the Regional Subject Panel is to break away from a too-formal examination, and it is hoped that this will produce sound teaching techniques as well as leaving time for individual experiment.

The subject provides a meeting point between the practical and academic activities of the school and drawing examples should be taken from the workshops or any other aspect of school work or spare time activity. A basic knowledge of geometry will be required but each problem or construction should immediately be related to its practical application.

Students should be able to make clear outline sketches, using centre lines and the accepted conventions where necessary; the use of squared and isometric paper may be helpful in this respect. No bias has been shown towards any craft or subject as it is felt that a sound course of Technical Drawing prepares a boy to read, comprehend and use a drawing in any field of craftwork. It should be clearly understood that a knowledge of the principles involved is as important as skill in the use of instruments.

The final year's course work should be safely preserved because, before the examination, the teacher will be asked to submit a graded assessment of the ability of each student, based on the course work.

Syllabus

The recommendations of the British Standards Institution should be followed in the preparation of drawings. Details are given in B.S. Specification 308/1953 (incorporating subsequent amendments)—“Engineering Drawing Practice.”

Plane Geometry

General constructions of lines and angles involving bisections

Erection of perpendiculars.

Angles in semi-circle.

Proportional division of a line.

Construction of triangles by simple methods including 3-4-5 triangle.

Construction of regular polygons—square, rectangular, hexagonal and octagonal only.

Parts of circle—radius, diameter, circumference, chord, arc, segment, sector.

Circumscribed and inscribed circles.

Tangents.

Construction of ellipse by trammel, string and concentric circles.

Scales—plain and diagonal.

Loci of simple mechanisms including use of trammels.

Circles of given radius and lines in contact having practical application (engineering components, spanner, car gasket, etc.)

Solid Geometry

Orthographic projection. Representation of simple geometrical solids based on the cube, square, hexagon, octagon and rectangular prisms, cylinder, pyramid and cone.

Sections and true shapes of sections at set square angles to main planes.

Developments of the surfaces of simple solids, with practical applications.

Isometric drawing without Isometric scale and Oblique drawing standardised at 45° with a depth of $\frac{1}{2}$ scale—to include circles and curves at both front and oblique faces.

Technical Drawing. The candidate should be able to :—

Produce, read and understand simple technical drawings in First or Third Angle Projection, the questions having been set in First Angle only.

Prepare drawings from sketches and actual objects in various materials.

Produce sections horizontal and vertical.

Show conventional representations of screw threads by the simplified parallel line method, BSW hexagonal nuts, bolts and washers.

Produce simple assembly drawings from given details or conversely to make drawings of details taken from a given assembly.

Draw in good proportion without the use of instruments, constructions in orthographic or pictorial form, such as to convey information clearly and easily.

Form of the examination

The examination will consist of two papers, each of two hours' duration. Part of one of the papers will consist of a series of short-answer questions (to be answered on the question paper) ranging over the whole of the syllabus and taking not more than one hour.

The remainder of the examination time will be devoted to answering a number of questions as it is not intended to set one major question of the traditional type occupying the larger part of any one paper.

WOODWORK

(One theory paper of 2 hrs. and a practical examination of 4 hrs.)

General introduction

The headings in this syllabus should be covered during the course on the basis of general knowledge rather than detailed study. It is not suggested in any way that the total content should form the basis for the theory paper. The headings are, in fact, the barest outline that can be considered to give a comprehensive background to the craft.

Syllabus

A general course of study embracing knowledge of :—

- Tree structure
- World distribution of timber
- Hard and Soft woods in general use
- Conversion of timber
- Seasoning of timber
- Common defects and diseases
- Storage of timber
- Common stock sizes, sawn and prepared
- Manufactured boards and materials
- Adhesives—preparation and properties
- Screws
- Nails
- Basic constructions and processes
- Basic joints and their applications
- Glueing and assembling
- Cutting lists
- Wood finishing processes
- Simple functional design
- Common hand tools, their care and maintenance, construction and use
- Simple wood turning
- Basic safety precautions

Form of examination

The Woodwork examination will be in three Sections :—

- (a) Practical Test of 4 hours' duration.
- (b) An assessment of the candidate's Course work,
- (c) Theory Paper of 2 hours' duration.

Each Section carries equal weight. The candidate will be required to satisfy the examiner in each section.

(a) Practical Test

A formal test of woodworking of 4 hours' total duration will be held in two sessions on the same day, the first session to be of at least 2½ hours.

There will *not* be a choice of questions. The test will be worked in a mild hardwood (such as rauli or abura) which is to be supplied by the school, prepared to size. Only *one* issue of material will be allowed.

Materials for the test will be supplied by the schools and prepared according to instructions issued by the Board. During January schools will be given details of the materials that may be required.

The test will be presented in the form of a first angle orthographic projection to a simple scale supplemented by a pictorial representation of the test.

It is intended that the candidate should be able to complete the test in the stated time using hand tools normally found in the school workshop.

There may be included a suggested sequence for working the test.

The practical test to be marked externally.

Note : In all relevant sections the schools will be given freedom to timetable the Practical Examination (within certain specified dates)

to suit their own conditions. This is suggested in view of the numbers expected to take the examination as compared with the available accommodation.

Practical Examination question papers will be withdrawn at the end of each test and withheld until the entire examination programme is completed.

(b) Coursework

The candidate shall offer work made by him from either his own working drawings (not to be assessed) or from any other source which shall be available, and completed, or nearly so, during his fifth school year. This work will be assessed by the teacher responsible and moderated by the Board.

(c) Theory Paper

This paper of a practical searching nature will be in two parts:—

Part 1. A printed paper of 20 questions on which the brief answers shall be either written and/or sketched. The candidate will be expected to attempt **ALL** questions, but it is suggested that this section should take approximately 40 minutes. These questions will be set on general basic principles of woodwork.

Part 2. Six questions, involving writing, sketching or both, from which the candidate may attempt three. These questions to be somewhat more demanding and extended than those in Part 1. All questions will be related to experience likely to have been gained within the normal teaching in the school workshop.

In the Theory Paper the marks will be awarded in the proportion 40% for the short answers and 60% (20% each) for the three longer answers.

The theory paper will be marked externally.

GENERAL NOTE

To help schools, the Panel and the Chief Examiner have drawn up the following list of tools which will in future be referred to as the Basic Tools. This list would not preclude the use of any other tools (except any debarred by the examiners) nor does it mean that schools must not provide better proportions if they have the means to do so.

All of these tools will not necessarily be used in every test every year.

BASIC TOOL LIST

One to each candidate

Jack Plane
 Tenon Saw
 Marking Knife
 Marking Gauge
 Steel Rule 12"
 Try Square
 Mallet
 Bench Hook
 Firmer Chisels
 $\frac{1}{4}$ ", $\frac{3}{8}$ ", or $\frac{1}{2}$ ", $\frac{3}{4}$ ", or 1"
 Pair of Compasses

One to every 4 candidates

Hand Saw—Cross-cut or Panel
 Bow Saw or Coping Saw
 Hammer
 Spokeshaves, Flat and Round
 Sliding Bevel
 Cutting Gauge

One to every 10 candidates

Plough Plane with cutters $\frac{1}{8}$ "— $\frac{1}{2}$ " by 1/16ths, Router, Side Fillister, Shoulder Plane, Shooting Board.

One to every 2 candidates

Smoothing Plane
 Mortise Gauge
 Mortise Chisels $\frac{1}{4}$ " and $\frac{5}{16}$ "
 Bevelled Edge Chisels $\frac{1}{4}$ " and $\frac{3}{8}$ "
 Dovetail Saw
 G-Cramp

One to every 8 candidates

Screwdriver—to suit No. 4, 6, 8 screws
 Bradawl for above screws
 Crank Brace
 Wheel Brace
 Drill Set or Spoon Bits $\frac{1}{8}$ " to $\frac{1}{4}$ "
 Bits:—
 Twist, $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", and $\frac{1}{2}$ "
 Centre, $\frac{5}{8}$ ", $\frac{3}{4}$ ", $\frac{7}{8}$ ", 1", 1 $\frac{1}{4}$ "
 Countersink, $\frac{3}{8}$ " or $\frac{1}{2}$ "
 Sash Cramp

PART VI

(a) LIST OF CHIEF SUBJECT MODERATORS

| <i>Subject</i> | <i>Chief Moderator</i> |
|-----------------------|---------------------------|
| Art and Crafts | A. Bowerman, Esq. |
| Civics | M. J. Hollingsworth, Esq. |
| Commercial Subjects | F. Wenban, Esq. |
| English | D. Saville, Esq. |
| Geography | M. Harding, Esq. |
| History | E. J. Hood, Esq. |
| Housecraft | Mrs. A. F. Coop |
| Mathematics | Miss J. Thomson |
| Metalwork | B. Sherman, Esq. |
| Modern Languages | J. Perkins, Esq. |
| Music | W. H. Stroude, Esq. |
| Needlework | Miss S. Garrett |
| Religious Knowledge | P. Court, Esq. |
| Rural Studies | R. W. C. Short, Esq. |
| Science : | |
| (i) Biology | Mrs. J. Morrissey |
| (ii) Chemistry | G. A. K. Plumley, Esq. |
| (iii) General Science | J. Barlow, Esq. |
| (iv) Physics | L. Semaine, Esq. |
| Technical Drawing | H. A. Freebury, Esq. |
| Woodwork | A. T. Marshall, Esq. |

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PART VI

(b) *LIST OF CHIEF SUBJECT EXAMINERS*

| <i>Subject</i> | <i>Chief Examiner</i> |
|-----------------------------|--|
| Art and Crafts | Miss Joan Charlton |
| Civics | J. A. Nobbs, Esq., B.Sc.(Econ.) |
| Commercial Subjects | D. M. Duncan, Esq., B.Com. |
| English | K. J. Collier, Esq., B.A. |
| Geography | J. S. Byrne, Esq., B.A. |
| History | J. B. Simpson, Esq., M.A. |
| Housecraft | Miss R. J. Wigner |
| Mathematics | A. B. Tookey, Esq. |
| Metalwork | A. J. Hall, Esq. |
| Modern Languages : | |
| (i) French | D. L. G. Rose, Esq., M.A. |
| (ii) German | H. Peters, Esq., M.A. |
| (iii) Spanish | H. G. Bone, Esq., B.A. |
| Music | I. G. Hartles, Esq., A.R.C.M., L.R.A.M., L.L.C.M. |
| Needlework : | |
| (Embroidery and Fashion) | Miss S. Martin |
| Religious Knowledge | B. J. Brown, Esq., B.D. |
| Rural Studies | L. S. Betts, Esq. |
| Science : | |
| (i) Biology | O. C. Jenks, Esq., B.Sc. |
| (ii) Chemistry | W. F. Dodge, Esq. |
| (iii) General Science | R. S. Taplin, Esq., B.Sc. |
| (iv) Physics | M. W. Turner, Esq., B.Sc. |
| Technical Drawing | A. H. Payne, Esq. |
| Woodwork | F. W. Worsley, Esq. |

PART VII

OFFICERS OF COUNCIL, COMMITTEES AND SUBJECT PANELS

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Chairman : B. S. Braithwaite, Esq., M.A.

Vice-Chairman : F. J. Drake, Esq., B.Sc.

Examinations Committee

Chairman : D. R. Mather, Esq., M.A.

Vice-Chairman : R. S. Rothwell, Esq., B.A.

Finance and General Purposes Committee

Chairman : Miss M. Maplesden Noakes, M.B.E.

Vice-Chairman : C. R. V. Bell, Esq., O.B.E.

Subject Panels

| <i>Subject Panel</i> | <i>Chairman</i> | <i>Correspondent</i> |
|----------------------|--------------------|----------------------|
| Art and Crafts | Mr. V. A. Freeborn | Mr. A. Shepherd |
| Civics | Mr. J. R. Haynes | Mr. W. Preston |
| Commercial Studies | Miss G. F. Sladden | Miss A. Cavadini |
| English | Mr. J. A. Bolton | Miss J. N. Kelly |
| Geography | Mr. A. M. Morse | Mrs. M. Key |
| History | Mr. E. P. Wilmot | Mr. J. P. Ray |
| Housecraft | Miss M. J. Dodson | Miss Z. Howe |
| Mathematics | Mr. C. S. Smith | Mrs. D. Grice |
| Metalwork | Mr. P. E. Haskell | Mr. P. E. Dawson |
| Languages | Mr. R. S. Rothwell | Mr. H. H. Turpin |
| Music | Mr. F. W. Capelin | Mrs. V. O. Bensusan |
| Needlework | Mrs. I. Unsworth | Miss B. Wood |
| Religious Knowledge | Miss E. V. Wheeler | Mr. K. P. J. Tullett |
| Rural Studies | Mr. J. N. Campbell | Mr. D. T. Edmed |
| Science | Mr. L. J. Campbell | Mr. R. J. Carlton |
| Technical Drawing | Mr. J. W. Ball | Mr. A. Payne |
| Woodwork | Mr. T. E. Davis | Mr. W. E. Brooke |

P. N. Anderson, Esq., B.A.

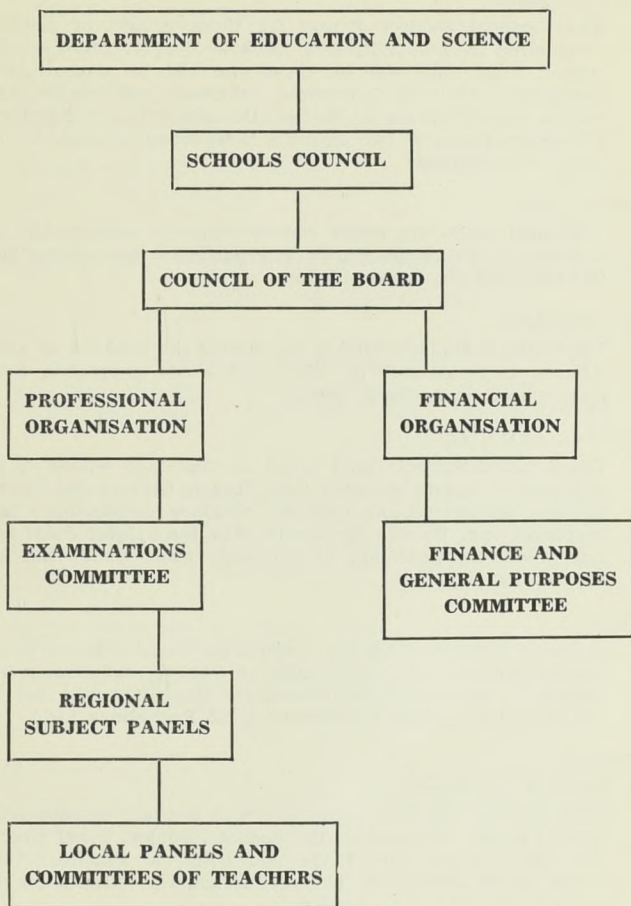
Secretary to the Board

1st July, 1965

NOTE

A booklet entitled: *Membership of Council, Examinations Committee, Finance and General Purposes Committee and Subject Panels* is available on request to the Secretary. This lists the names and schools, or other addresses, of all members of the Board and their various Committees and Panels.

ADMINISTRATIVE ORGANISATION OF THE BOARD



APPENDIX

The Notes which follow indicate changes in syllabuses, or new syllabuses, which are currently under consideration for introduction in 1966 or thereafter.

ART AND CRAFTS :

Additional options to those printed in the 1966 syllabus are being considered. Schools are invited to suggest any particular option for which they feel a need for an examination.

COMMERCIAL SUBJECTS :

MATHEMATICS :

}
The Regional Subject Panels for these groups of subjects are considering the possibility of a "common" examination syllabus and subject which will cater for those who wish to concentrate on the Commercial side, with Commercial Arithmetic, and also for those who wish to concentrate on the Mathematics side, with Home Mathematics. (These are shewn as two separate, independent subjects in the 1966 range of syllabuses.)

GEOGRAPHY :

Additional topics are under consideration for examination in 1967. Schools are invited to suggest any particular topic for which they feel the need for an examination.

HOUSECRAFT :

The Regional Subject Panel is considering the need for an additional syllabus in Housecraft for Boys and would appreciate comments from schools upon the proposal.

MODERN LANGUAGES :

The Regional Subject Panel is not, at this stage, willing to provide syllabuses in languages other than French, German and Spanish. If however certain schools wish to introduce examinations in other languages (e.g., Russian, Esperanto, etc.) the Subject Panel will give sympathetic consideration to proposals made under the Mode 3 regulations.

MUSIC :

A limited number of the L.P. recordings (2) used in the first C.S.E. examinations in 1965 are available, *on loan*, to schools upon request. (Owing to copyright regulations these recordings may not be sold and remain the property of Messrs. E.M.I. Recordings, Ltd.)

SCIENCE :

Common Core Paper :

With reference to the warning Notes in the four Science syllabuses printed in the 1965 booklet, the Regional Subject Panel gives notice that the Common Core Paper and both the Practical Test and Special Study sections of the syllabus and the examination will be required in 1966 and thereafter.

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