SOUTH WESTERN EXAMINATIONS BOARD
for the Certificate of Secondary Education

REGULATIONS AND SCHEMES OF EXAMINATION 1966 & 1967

SOUTH WESTERN EXAMINATIONS BOARD

for the Certificate of Secondary Education

REGULATIONS AND SCHEMES OF EXAMINATION 1966 & 1967

General Information

1. *Correspondence.* All communications should be addressed to:—

   The Secretary,
   South Western Examinations Board,
   Dominions House,
   23–25 St. Augustine's Parade,
   Bristol 1.

2. *Regulations.* Two copies of these regulations will be issued free of charge to Heads of all boys' and girls' schools and three copies to Heads of all mixed schools who have registered with the Board for the 1966 examinations. Additional copies may be obtained from the Secretary, price 5s.0d. (post free in the U.K.). Payment should be made at the time of ordering.

3. *Payments to the Board.* All payments to the Board should be made by cheque, money order or postal order, payable to SOUTH WESTERN EXAMINATIONS BOARD and crossed NOT NEGOTIABLE.

ORDER FORM

SOUTH WESTERN EXAMINATIONS BOARD
for the Certificate of Secondary Education

REGULATIONS AND SCHEMES OF EXAMINATION

To: The Secretary,
South Western Examinations Board,
Dominions House,
23–25 St. Augustine's Parade,
Bristol, 1.

Please send me..... copies of the Regulations and Schemes of Examination for 1966–67, for which I enclose cheque/money order/postal order value..... to cover cost and postage.

Signed .....

Date.....

From: Name/School .....

Full postal address.....

.....

.....

Price per copy 5s.0d. (including postage in the U.K.).

All cheques, etc., to be made payable to SOUTH WESTERN EXAMINATIONS BOARD and crossed NOT NEGOTIABLE.

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Historical Introduction

THE Education Act of 1944 gave rise to major new problems with regard to external examinations. With the great development of secondary education resulting from the Act, large numbers of children began to receive secondary education up to 15 years or over, for most of whom the traditional "grammar school" examination was not necessarily appropriate.

The General Certificate of Education ordinary level examinations, which superseded the School Certificate examinations in 1951, did not provide a satisfactory answer for children in the ability range below those normally admitted to selective schools or streams.

The intention was that the requirements of these children should be met by internal examinations, together with objective tests and the extensive use of school records. But from the outset there was a demand for external examinations for the new non-selective schools. The growing evidence of this demand led the Minister of Education in Circular 289 of July, 1955, to state his objections to any form of systematic external examination for secondary schools other than the G.C.E. This policy was modified in Circular 326 of July, 1957, but only to the extent that the Minister agreed not to discourage regional examinations for 16-year-olds where needed for selection for courses of Further Education.

From the outset, the G.C.E. *O* level examinations attracted a steadily increasing number of entrants, not only from grammar schools and streams but from all kinds of secondary schools and from institutions of Further Education. By 1959 about one-third of all *O* level entries were from establishments other than grammar schools and entrants from modern schools increased even more rapidly after that date.

There was also a parallel growth in entries for other kinds of external examinations, some organised locally by local groups of teachers or by local education authorities, others organised regionally or nationally by independent examining bodies. Many of these developments occurred despite ministerial discouragement.

There was every indication that the numbers taking these examinations would continue to grow and that the individual bodies conducting them would also grow in size and influence. A position would be reached in which the work of external examining below G.C.E. level would be almost exclusively concentrated in the hands of a limited group of bodies, in danger of becoming increasingly remote from the schools and able to pursue their own policies without reference to the long-term needs of the schools or of the educational system as a whole.

It was in this context that on 2nd July, 1958, the Secondary School Examinations Council appointed a committee with the following terms of reference:—

> "To review current arrangements for the examination of secondary school pupils other than by the General Certificate of Education examination, and to consider what developments are desirable, and to advise the Council whether, and if so, what examinations should be encouraged or introduced, and at what ages and levels."

The report of the committee, published by the Ministry of Education in September, 1960, was entitled *Secondary School Examinations other than the G.C.E.*, but it is more commonly known as the *Beloe Report* after Mr. R. Beloe, C.B.E., M.A., then Chief Education Officer of Surrey, who was Chairman of the Committee.

The report recommended the introduction of new examinations which it was hoped would supersede all existing examinations below the G.C.E. *O* level. The examinations would be appropriate for pupils at the end of the fifth year of a secondary school course and they would be specially designed to suit the needs and interests of pupils in the ability range concerned rather than merely providing a replica of G.C.E. examinations at a lower level.

The Secondary School Examinations Council confirmed the main findings of the Beloe Committee in their *Fourth Report* published in May, 1961, and the Minister of Education accepted the Council's proposals for the establishment of the C.S.E. system of examinations, though with some reservations.

The next step was the publication in August, 1962, of the Council's *Fifth Report*, which dealt mainly with organisational arrangements. The report recommended that the new examinations should be teacher controlled and that they should be designed to give the greatest possible freedom to the schools to develop their courses of study as they thought best. These two conditions necessitated the establishment of regional rather than national boards and also acceptance of the principle (long accepted in Further Education) that certificates could be awarded not only on the evidence of externally set examinations but also on the strength of examinations set internally in the schools subject to control and validation by the examining bodies.

In publishing the Fifth Report the Minister accepted the advice that the next moves should be to invite the comments of the teachers and local authority associations on it and at the same time to authorise the Council's C.S.E. Standing Committee to begin preliminary negotiations with potential examining bodies, so that final decisions on the conditions of recognition could be taken in the light of the comments of those mainly concerned.

It remained for the Secondary School Examinations Council to consider in detail the scope and standards of the proposed examinations. This they did in their *Seventh Report*, which was published by the Ministry in October, 1963. The report recommended a move away from the traditional concept of a school leaving examination which pupils could only pass or fail, and the adoption of a system of assessing candidates in grades, leaving it to users of the examinations to decide the grade in each subject which would suit their particular requirements. Grade 1 would be awarded to candidates who were considered to be of G.C.E. *O* level calibre in the subject.

The Seventh Report was followed by the publication of *Examinations Bulletin No. 1—The Certificate of Secondary Education: Some suggestions for teachers and examiners.* This was perhaps the most important document yet published in connection with the new examination. Anyone wishing to understand the aims and organisation of the C.S.E. system is advised to study the Fifth and Seventh Reports and then to read pages 1 to 26 inclusive of the Bulletin. (The Seventh Report is reprinted as Appendix 3 of the Bulletin.)

In the West Country a working party of teachers and local authority representatives was set up following the publication of the Fifth Report and, after lengthy deliberations, the South Western Examinations Board was established. The first meeting of the (provisional) Council was held at Bristol on 10th July, 1963, the Board was officially recognised by the Minister of Education on 2nd August, 1963, and the Secretary to the Board took up his appointment on 1st December, 1963.

NOTE.—The *Secondary School Examinations Council* was set up by the Board of Education in 1917 when the School Certificate and Higher School Certificate examinations were instituted. The universities were recognised as the responsible bodies to conduct the new examinations. To ensure the necessary equivalence of standards and to provide the machinery for periodic review the Board of Education undertook to perform the functions of a co-ordinating authority and the S.S.E.C. was set up to advise them in this task. On 1st October, 1964, the Council was superseded by the *Schools Council for the Curriculum and Examinations* (known briefly as the *Schools Council*) which now advises the Department of Education and Science on all aspects of school examinations and through its Certificate of Secondary Education Committee is responsible to the Department for co-ordinating the activities of the fourteen C.S.E. regional boards.

The C.S.E. System of Examinations

With the introduction of the examinations for the Certificate of Secondary Education the opportunity was taken by the Secondary School Examinations Council to incorporate several features which it is hoped will make the new certificates of maximum benefit to employers and other users. Though some of these features have not hitherto been adopted on any scale in school examinations few will be unfamiliar to those acquainted with examinations conducted in the universities, training colleges and technical colleges.

The main purpose of any system of examinations is to serve as an instrument to measure ability and achievement. If, however, the examinations consist solely of unseen papers and practical tests set at a specific moment of time, they measure one aspect only of total performance and they do so to the disadvantage of candidates who, though able, are bad examinees or who were, by reason of sickness, recent entry to the district or some other cause beyond their control, at a disadvantage at the time they sat for the examination.

An assessment of ability and achievement over the whole duration of the course leading up to the examination would, if taken in conjunction with the results of the examination itself, not only do greater justice to many candidates, but would also enable other qualities to be measured such as the imagination, initiative and perseverance necessary for the planning and completion of a project requiring some investigation or minor research. It was therefore decided that an assessment of some aspect of course work would be permitted and indeed encouraged in the C.S.E. system.

It was also decided at an early stage in the planning of the new system that the disadvantage of many examinations that they encourage concentration on what is going to be examined and hence discourage the freedom of schools to develop their courses of study as they think best, must be overcome. This would be done in two ways, firstly by giving intimate control of the examination syllabuses to the teachers concerned and secondly by permitting schools whose examination requirements were not adequately met by the examining boards to submit their own schemes of examination and, if they wished, to set their own question papers on them—subject to approval and validation by the boards. This could be done not only in subjects examined by theory papers but also in practical subjects (e.g. art, needlecraft and metalwork) where it would enable practical tests to be assessed in the schools, thus freeing them from the restrictions necessarily imposed by postal requirements.

Finally it was decided to introduce a new method of publishing the results of the C.S.E. examinations by dispensing with the pass/fail system and expressing the results in five grades, leaving it to employers and other users of the certificates to decide for themselves which grade in each subject would suit their own particular requirements.

It was felt that the information that some candidates had passed and that others had failed, would not meet the many different needs of the many different users of the C.S.E. examinations. Some users would wish to know whether a certificate described a standard of performance which indicated that the candidate was of ordinary level G.C.E. calibre; others would have useful openings for candidates who were just below this standard; others would be looking for school leavers of average ability; and many would have hybrid requirements in the sense that

they would be looking for evidence of a fairly high standard of performance in one or two subjects but would accept a lower standard in others. It was not for schools or examining boards to define employers' and other users' requirements for them. On the other hand all users of the certificates had a right to expect that, once they had defined their own requirements in terms of a given standard of examination performance, those standards would be maintained with reasonable consistency—and it would be the responsibility of the examining boards and of the Secondary School Examinations Council to see that this was done.

South Western Examinations Board

The Constitution of the Board is printed in full in Appendix 2 of Examinations Bulletin Number 1 published by the Ministry of Education in October, 1963. The following is a summary of its contents:—

The Board is responsible for the Certificate of Secondary Education in the local education authority areas of Gloucestershire, Somerset, Wiltshire, Bath, Bristol and Gloucester City (which comprise the Northern Sub-Region) and Cornwall, Devonshire, Exeter and Plymouth (which comprise the Southern Sub-Region).

The Board is governed by a COUNCIL consisting of 42 representative members (including 30 teachers and 10 L.E.A. representatives) and not more than 8 co-opted members. The Council is required to appoint two main committees, an Examinations Committee and a Finance and General Purposes Committee

THE EXAMINATIONS COMMITTEE, which is responsible for the organisation and conduct of the Board's examinations, consists of 28 members (including 21 teachers and 5 L.E.A. representatives) and not more than 10 co-opted members. The detailed work of preparing syllabuses and planning examinations is carried out by a number of subject panels responsible to the Committee.

The FINANCE AND GENERAL PURPOSES COMMITTEE consists of 16 members of the Council including 10 L.E.A. representatives and 6 other members, of whom at least 3 must be teachers.

The Chairman and Vice-Chairman of the Council and the chairmen of its two Committees are, where relevant, ex-officio members of the Examinations Committee and the Finance and General Purposes Committee.

In addition to representative, co-opted and ex-officio members provision is made for the appointment to the Council and its two committees of certain non-voting assessors.

SUBJECT PANELS consist of not more than 15 serving teachers together with such other members as may be appointed by the Examinations Committee or co-opted by the Panels themselves. Chairmen are appointed by the Committee. Sixteen of the teacher members of the Examinations Committee are required to be chosen from members of Subject Panels.

The following panels have been appointed in both Northern and Southern Sub-Regions:—

Art and Light Crafts; Commercial Subjects; Domestic Science; English; Foreign Languages; Geography; History; Mathematics; Music; Needlecraft; Religious Knowledge; Rural Studies; Biology; Chemistry; General Science; Physics; Metalwork; Technical Drawing; Woodwork.

ADVISORY GROUPS. The Constitution requires the Examinations Committee to establish a series of Advisory Groups to which schools wishing to enter for the Board's examinations shall belong, thus assuring that all schools shall be able to take an active interest in the work of the Board. Each school is represented by one member on the Advisory Group of its choice.

Twenty Advisory Groups have been established in the Northern Sub-Region and twelve in the Southern Sub-Region. Each group is represented on all subject panels which thus consist of a minimum of 20 *members in the North and* 12 *in the South.*

GENERAL. Membership of the Council and of its Committees, panels and groups is for three years, one-third of the members retiring annually, though they may be re-elected for one further term. The first members of the Council and of its committees, panels and groups will, however, remain in office until 31st August, 1966. The Chairmen of the Council, and of its committees, panels and groups are elected or (in the case of panels) appointed annually.

The Council is required to meet at least once in each year. Committees, panel and groups may, subject to any directions of the Council, meet as often as they think necessary.

The Constitution of the Board may be amended by the Council after at least two months' notice in writing has been given but amendments are subject to approval by the Schools Council.

The scope and standards of the examinations to be set, regulations for the admission of candidates, the form of the certificates to be issued and the manner in which performances are shown thereon will all be determined by the Schools Council and appropriate clauses are inserted in the constitutions of the South Western Examinations Board (and of all other Boards) to ensure national uniformity on these and other important issues. Provision is made for any appeals and representations concerning the activities of the Board to be considered by the Examinations Committee and/or the Council and, in the event of a dispute with the Council, there is a right of appeal to the Schools Council.

Composition of the Council

20 Teachers nominated by teachers' associations:—

- National Union of Teachers—10
- Association of Teachers in Technical Institutions—2
- The Joint Four Association—4
- National Association of Schoolmasters—2
- National Association of Head Teachers—2

10 Teachers nominated by the L.E.A.s (1 per authority)

10 Representatives of the L.E.A.s (1 per authority)

2 Representatives of Institutes of Education

8 Co-opted members:—

- teachers serving in Further Education establishments—2
- representatives of Industry and Commerce—2
- representatives of the Youth Employment Service—1
- other members—not more than 3

Assessors (non-voting):—

- representative appointed by the Council of at least one other regional examinations board—1
- H.M. Inspector of Schools (nominated by the Secretary of State for Education and Science)—1
- other appointments at the discretion of the Council

Composition of the Examinations Committee

21 Teachers appointed by the Council:—

representing northern subject panels—8
representing southern subject panels—8
Council representatives of the teachers' associations (1 per association)—5

5 Representatives of the L.E.A.s (chosen by rotation)

2 Representatives of Institutes of Education

10 Co-opted members:—

representatives of Industry and Commerce—2
representatives of Further Education—2
other members—not more than 6

Ex-officio members:—

Chairman and Vice-Chairman of the Council
Chairman of the Finance and General Purposes Committee

Assessors (non-voting):—

representative appointed by the Council of at least one other regional examinations board—1
H.M. Inspector of Schools (nominated by the Secretary of State for Education and Science)—1
other appointments at the discretion of the Committee

Composition of the Finance and General Purposes Committee

10 Representatives of the L.E.A.s (1 per authority)

6 Other members, of whom at least three shall be serving teachers

Assessor (non-voting):—

representative nominated by the Secretary of State for Education and Science—1

Regulations of the South Western Examinations Board, 1966 and 1967

1. DATES OF THE EXAMINATIONS

The written examinations will commence on Monday, **9th May, 1966,** and Monday, **8th May, 1967,** but practical and oral tests and assessment of course work may be commenced any time after the first day of the Summer Term.

A provisional time-table for the 1966 *examination is given on page* xxi.

2. ELIGIBILITY OF CANDIDATES

(i) Candidates attending schools must have attained the age of *sixteen* on or before the 1st September in the year in which the examination is held *or* must be in the final term of the fifth year of a five-year course of secondary education *or* must have completed such a course (the expression a *five-year course of secondary education* includes, for the purposes of these conditions, any full-time course of five years' duration undertaken in any type of school after the normal age of transfer from primary to secondary education).

This clause is in accordance with the School Regulations 1959 (*Statutory Instrument* 364) *as amended by the Schools* (*Amending*) *Regulations* 1963 (*S.I.* 1468).

(ii) Where, for the time being, pupils are unable, owing to lack of maintained secondary school facilities, to take their fifth year save in a further education establishment, candidates entered by such establishments will be accepted for the examination if they have completed, or are in the last term of, five years' full-time secondary education partly in school and partly in a further education establishment.

(iii) Other candidates may be accepted provided that they are not less than *seventeen* years of age on the 1st September following the summer term in which the examination is taken.

3. MODES OF EXAMINATION

The Board will make provision for the following modes of examination:—

mode 1: examinations set by its own examiners on the schemes in this book;

mode 2: examinations set by its own examiners on syllabuses prepared by individual schools or groups of schools and approved by the Board;

mode 3: examinations set by individual schools or groups of schools on their own syllabuses, both the syllabuses and the examinations to be subject to approval by the Board.

Schools choosing mode 2 or 3 examinations must make application to the Board in accordance with the requirements of paragraph 14 below.

4. STANDARD OF THE EXAMINATIONS

The examinations are designed for the band of candidates extending from those who overlap the group taking ordinary level of the G.C.E. to those who are just below the average of ability of the whole age group. They are offered on a single subject basis, i.e. there are no compulsory subjects and candidates may enter for one subject or more.

5. SPECIAL NOTICE EXAMINATIONS

Examinations on certain syllabuses in this book have been designated *special notice examinations* and schools proposing to enter for them must notify the Board of their intention by **30th September** in the previous year. If the entry in any subject is insufficient, examinations will not be set under mode 1 but papers will be set under mode 2 if required.

A list of all special notice examinations is given on page 2. *In* 1966 *the minimum aggregate entry required for setting these examinations under mode* 1 *will be* 150.

6. REGISTRATION OF SCHOOLS

Schools proposing to enter candidates for the first time are required to register with the Board. Copies of the prescribed registration form will be sent on request and must be returned to the Secretary not later than **31st October** in the year preceding the examinations.

7. ENTRY OF CANDIDATES

Forms of application for entry to the examinations will be sent to all registered schools not later than 30th November in the year preceding the examinations and will be returnable by **31st January** following.

8. PLACE OF EXAMINATION

Candidates will normally be examined at their own schools but the Board reserves the right to require them to attend elsewhere in certain circumstances.

9. CONDUCT OF THE EXAMINATIONS

Heads will be responsible for ensuring that examinations conducted in their schools are carried out in accordance with the rules of the Board currently in force, a copy of which will be sent to them before the examinations. The Board reserves the right to send a representative to a school at any time to inspect the arrangements for the examinations and the manner in which they are conducted.

10. EXAMINATION FEES

For the 1966 examinations there will be an entry fee of £1 per candidate plus a subject entry fee of £1 10s. per candidate. The minimum subject entry fee in respect of each mode 2 examination will be the fee for 10 candidates, i.e. £15.

With the exception of maintained schools, on whose behalf payments will be made by their local education authorities, fees must be paid at the time of entry to the examination, i.e. by 31st January.

Candidates' entry fees will in no circumstances be refunded. Subject entry fees may be refunded, at the discretion of the Secretary, when a candidate withdraws from the whole examination but no refund will be made in respect of candidates withdrawing or absent from part of the examination.

If any alteration in the fees is decided upon for the 1967 *examinations schools will be notified by* 31*st October,* 1966.

11. EXAMINATION RESULTS

The performance of candidates in the examinations will be expressed in the form of five grades as follows:—

Grade 1: equivalent to an ordinary level pass in the G.C.E. examination.

Grade 2: above average and nearer to *O* level standard than to average.

Grade 3: above average but nearer to average than to *O* level standard.

Grade 4: average of all members of the 16-year-old age group who have studied the subject concerned.

Grade 5: slightly below average.

Performances below that required for Grade 5 will be ungraded.

12. AWARD OF CERTIFICATES

Certificates of Secondary Education will be issued to all candidates awarded at least one Grade 4 or better; where certificates are issued they will also record Grade 5 performances. The certificates will be signed by a representative of the Department of Education and Science as evidence that the examinations conform in scope and standard with the national requirements.

Certificates will be sent to Heads, who will be responsible for their distribution. Personal enquiries concerning the results of individual candidates will not be entertained at the Board's offices. Candidates must address their enquiries to their Heads.

13. CERTIFICATION OF RESULTS

When official evidence of a candidate's performance is required by an institution or employer a certifying letter will be sent by the Secretary to the person concerned on receipt of a written request, which must be accompanied by a fee of 3s. The request must state the candidate's name and examination number, and the year of the examination. Certifying letters will not be supplied directly to candidates and, if the original certificate is available, a certifying letter will not normally be issued.

14. SUBMISSION OF MODE 2 AND MODE 3 SCHEMES OF EXAMINATION

Schools wishing to be examined on mode 2 or 3 schemes should submit full particulars to the Board. The Board's chief subject moderators will review schemes submitted and advise on the content of the syllabuses and the form of the examinations. In general the aim of the moderation process will be to ensure that, in any subject, candidates do not obtain a grade more easily in one examination than in another and that the description of the examination on the certificates is apt. The Board will not seek to impose on any school

views on what constitutes a suitable syllabus content or form of examination but, if its recommendations are not accepted, it may not always be practicable to award the higher grades to candidates taking the examinations concerned.

(i) Submission of Schemes of Examination (mode 2 and 3)

A SCHEME OF EXAMINATION is defined as consisting of a *syllabus* (or details of *what* is to be examined) and the *form of the examination* (or details of *how* the syllabus is to be examined). Information is required on both these aspects and should be comprehensive enough to enable the moderators to determine the nature and standard of the examination.

Information concerning the form of an examination should include:—

(*a*) the number of written papers with the time allowance for each and an indication of the number and type of question to be set in each paper or section of a paper;

(*b*) details of practical and oral/aural tests and of any assignments, projects or course work, including particulars of the proposed method of assessment;

(*c*) the percentage marks to be awarded to each paper or part of the examination.

Full specimen papers should *not* be forwarded as part of a scheme of examination. However, an outline paper or specimen questions may be submitted if desired; these may be useful when either the syllabus or the form of the proposed examination is unusual or experimental. In order that the setting of the actual examination papers at a later date may not be prejudiced or made unnecessarily difficult specimen questions may, where practicable, be based on material upon which the candidates will not in fact be examined (e.g. on a different History period or Geography region).

N.B.—Schools wishing to be examined under mode 2 may, if they do not wish to brief the Chief Examiners on the form of their examinations, submit details of their proposed syllabuses only, in which case the Chief Examiners will set examinations in line with the Board's equivalent mode 1 schemes.

Three copies of all schemes of examination must be submitted to the Board in the year *before* the examinations concerned are to take place in accordance with the following schedule:—

Schemes with no mode 1 *equivalents* (e.g. Russian, Engineering Science) by ... ... **31st March**

Schemes with mode 1 *equivalents*

(i) Notification of the intention to submit new schemes or revisions of schemes previously approved, listing the subjects concerned, by ... ... **31st July**

(ii) New schemes by ... ... **30th September**

(iii) Revisions of schemes previously approved by **31st October**

No action need be taken by schools proposing to enter candidates for examinations previously approved provided that the schemes are unchanged or subject only to minor modifications involving no point of principle. Schools proposing to give up examination by mode 2 or 3 should, however, notify the Board of their intention.

(ii) **Submission of question papers (mode 3 only)**

Question papers, mark schemes and other relevant documents must be submitted in triplicate in accordance with the information given below. When received by the Board, the draft papers and supporting documents will be sent to the relevant chief subject moderator for comment. One copy of each paper will eventually be returned to the school either approved (with or without minor modifications which may be incorporated if desired) or with modifications of such importance that further drafts may be necessary before agreement is reached on the final form of the papers. It will not be mandatory on a school to accept the moderator's recommendations in full but, in general, his views should prevail on matters which may affect the awarding of grades.

Presentation: the approved question papers in their final form should be modelled on the style of presentation adopted by the Board for its mode 1 examinations. They should be prepared on white quarto paper and should bear the Board's standard headings. The Board will allot a serial number to each paper when the draft is finally approved. The number alone will identify the paper and no reference to the name of the school or to the fact that it is a mode 3 examination may be made.

Preparation: the following points should be noted during the preparation of the question papers and supporting documents:—

(i) The approved syllabus must be adequately and widely covered by questions.

(ii) The standard of all question papers should be comparable to that of the equivalent papers of the Board, taking into account differences of syllabus. A question paper set on a syllabus which is narrower than the Board's must examine in greater depth than the Board's own paper.

(iii) Care should be taken to ensure that the answers to short, factual questions are not given or suggested by later questions.

(iv) Compulsory and optional questions should normally be divided into separate sections.

(v) Optional questions must satisfy three conditions. They must (*a*) be of equal difficulty, (*b*) require approximately equal times for answering, and (*c*) carry equal marks.

(vi) The marks allotted to questions must not be stated on the question papers.

(vii) *Practical and oral/aural papers:* question papers in respect of practical and oral/aural tests must be accompanied by statements giving such additional information concerning the preparations to be made and/or the procedure to be followed as will enable the moderators to gauge the standard of the tests.

(viii) *Course work, assignments, etc.:* details of the form and of the standard of assessment to be adopted must be given in respect of course work, assignments, etc., which form an integral part of an examination.

(ix) *Mark Schemes:* mark schemes are required in respect of all papers. They must show the allocation of marks to each part of a solution or answer. In certain cases this may necessitate the provision of detailed solutions (e.g. for calculations, technical drawing and objective type questions), or notes on the answers expected (for descriptive and similar questions).

(x) *Time-table:* the date and time chosen for each examination should coincide as far as possible with those of the equivalent examination of the Board but in any event each examination must be completed by the last date on the Board's time-table for the subject in question.

(xi) *Security:* absolute security at all stages from the preparation of the first drafts to the examination itself must be maintained.

Three copies of draft question papers, mark schemes and any supporting documents prepared as above, must be forwarded to the Board by the following dates:—

if based on new schemes of examination	**31st December**
if based on existing or revised schemes	**31st January**

Additional copies of the question papers as finally approved (but not of mark schemes or supporting documents) will be required to meet the demand of moderators and the secretariat. The exact number will be notified to schools concerned.

SUMMARY OF RELEVANT DATES

	1966 Examinations	*1967 Examinations*
Mode 2 and 3 schemes of examination for which there are *no* mode 1 equivalents to be submitted to the Board by	31st March, 1965	31st March, 1966
Notification of *intention* to submit new or revised mode 2 or 3 schemes for which there *are* mode 1 equivalents to be sent to the Board by ...	31st July, 1965	31st July, 1966
Mode 2 and 3 schemes of examination for which there *are* mode 1 equivalents to be submitted to the Board by:—		
New schemes ...	30th Sept., 1965	30th Sept., 1966
Revised schemes ...	31st Oct., 1965	31st Oct., 1966
Notification of intention to enter for *Special Notice* mode 1 examinations to be sent to the Board by	30th Sept., 1966	30th Sept., 1967
Registration with the Board by schools entering for the first time required by	31st Oct., 1965	31st Oct., 1966
Entry forms will be sent to schools by	30th Nov., 1965	30th Nov., 1966
Entry forms returnable to the Board by	31st Jan., 1966	31st Jan., 1967
Mode 3 question papers to be submitted to the Board by:—		
New schemes ...	31st Dec., 1965	31st Dec., 1966
Other schemes ...	31st Jan., 1966	31st Jan., 1967
Examinations Commence	9th May, 1966	8th May, 1967
Last date of birth of pupils eligible for entry*	1st Sept., 1950	1st Sept., 1951

*Pupils whose birthdays are later than this date are ineligible for entry unless they will have completed a full five-year course of secondary education by the same date.

SOUTH WESTERN EXAMINATIONS BOARD

CERTIFICATE OF SECONDARY EDUCATION EXAMINATIONS, 1966

PROVISIONAL TIME TABLE

DATE	MORNING		AFTERNOON	
Monday, 9th May	Domestic Science I (A & B). *Planning Session* Woodwork I (A & B). *Practical—1st Session*†	9.0—10.30 9.0—12.0	Domestic Science II (A) Domestic Science II (B) Woodwork I (A & B). *Practical—2nd Session*†	2.0—3.0 2.0—3.30 1.0—4.0
Tuesday, 10th May	Needlecraft I (B). *Practical* Metalwork I (A & B). *Practical—1st Session*†	9.0—12.0 9.0—12.0	Metalwork I (A & B). *Practical—2nd Session*† Typewriting	1.0—4.0 Tests start at 2 p.m.
Wednesday, 11th May	General Science I (A). *Practical—1st Session*† General Science I (A). *Practical—2nd Session*†	9.0—10.30 11.30—1.0	Geography I (A & B)	2.0—4.0
Thursday, 12th May	MUNICIPAL ELECTIONS—NO EXAMINATIONS			
Friday, 13th May	Basic Science (A) General Science I (B) Commerce (A & B)	9.0—9.45 9.0—9.45 10.30—12.30	Technical Drawing I (A) Technical Drawing I (B)	2.0—4.30 2.0—4.0
Monday, 16th May	Mathematics I (A) Mathematics I (B) Mathematics II (A)	9.0—10.15 9.0—11.0 11.15—12.30	Geography II (A & B)	2.0—4.0
Tuesday, 17th May	English I (A) General English I (B)	9.0—10.0 9.0—11.0	Woodwork II (A & B)	2.0—4.0
Wednesday, 18th May	English II (A) General English II (B)	9.0—10.30 9.0—11.0	Technical Drawing II (A) Technical Drawing II (B) Shorthand	2.0—4.30 2.0—4.0 Tests start at 2 p.m.
Thursday, 19th May	ASCENSION DAY—NO EXAMINATIONS			
Friday, 20th May	Mathematics III (A) Mathematics II (B)	9.0—10.0 9.0—11.0	General Science II (A) General Science II (B)	2.0—4.0 2.0—3.45
Monday, 23rd May	Physics I (A) Physics I (B) Business Practice Paper A—*Office Practice*	9.0—10.0 9.0—9.45 11.0—12.30	English III (A) English Literature (B)	2.0—4.0 2.0—4.0
Tuesday, 24th May	History (A) Papers I History (B) first paper History (A) Papers II History (B) second paper	9.0—10.30 9.0—10.30 11.30—12.30 11.30—1.0	German I (A) German I (B) Spanish I	2.30—3.30 2.30—4.15 2.30—3.30
Wednesday, 25th May	Biology I (A) Biology I (B) Citizenship	9.0—10.0 9.0—9.45 11.0—12.30	French I (A) French I (B) French II (A)	2.0—3.0 2.0—3.45 3.30—4.30
Thursday, 26th May	Chemistry I (B) French III (A) French II (B)	9.0—9.45 10.45—12.45 10.45—12.0	Physics II (A) Physics II (B)	2.0—3.30 2.0—3.45
Friday, 27th May	Music III (A & B). *Practical* Tests start at 9 a.m.		Rural Studies III (B). *Laboratory Tests*	Tests start at 2 p.m.
30th May—3rd June	WHITSUN HOLIDAY—NO EXAMINATIONS			
Monday, 6th June	Chemistry (A) Chemistry II (B) Music II (A & B). *Listening Test*	9.0—11.0 9.0—10.45 11.45—12.15	Metalwork II (A & B) Needlecraft (A) Needlecraft II (B)	2.0—4.0 2.0—3.0 2.0—3.30
Tuesday, 7th June	Religious Knowledge I (A) Religious Knowledge (B)	9.0—10.30 9.0—11.0	Religious Knowledge II (A)	2.0—3.30
Wednesday, 8th June	Principles of Accounts Business Practice Paper B—*Accounts* German II (A) German II (B) Spanish II	9.0—11.0 9.0—10.30 11.30—12.30 11.30—12.45 11.30—12.30	Human Biology II (A) Human Biology II (B)	2.0—3.30 2.0—3.45
Thursday, 9th June	Biology II (A) Biology II (B) German III (A)	9.0—10.30 9.0—10.45 11.45—12.15	Rural Studies I (A) Rural Studies I (B)	2.0—3.30 2.0—2.30
Friday, 10th June	Human Biology I (A) Human Biology I (B) Music I (A) Music I (B)	9.0—10.0 9.0—9.45 10.30—12.0 10.30—12.30	Rural Studies II (A) Rural Studies II (B) Business Practice Paper C—*Business Calculations*	2.0—3.0 2.0—4.0 2.0—3.30

†One paper only will be set for the practical examinations in these subjects. Schools entering large numbers of candidates may take the examination in two sessions if necessary.

The following arrangements should be observed for untimetabled examinations and other work:—

1.—*Oral English, French, German and Spanish:* to take place between the first day of the Summer Term and the last date on the time table for the subject concerned.

2.—*Practical Domestic Science (A & B) and Oral Domestic Science (A):* to take place between 11th and 27th May.

3.—*Art and Light Crafts:* question paper to be handed to candidates on 2nd May; work to be completed by 10th June.

4.—*Other untimetabled examinations and compulsory coursework, projects, assignments, etc.:* to be completed by the last date on the time table for the subjects concerned.

5.—*Optional coursework, projects, assignments, etc.:* to be completed preferably by the end of the Spring Term but not later than 2nd May.

6.—*All mode (ii) and (iii) examinations:* to be completed by the last date on the time table for the subjects concerned.

Notes on the timing of examinations:—

1.—The times on the time table do not include the ten-minute period for reading the question papers which will be allowed to candidates in all subjects unless stated otherwise in the instructions to be issued.

2.—Examinations may be timed to start up to thirty minutes earlier or later than the commencing times shown on the time table.

3.—Examinations may be transferred from the morning to the afternoon session *of the same day*, or vice versa only if this is necessary to avoid a clash with an examination of another Board. Where advantage is taken of this clause full security precautions must be taken.

The provisional time table for 1967 will be the same as that for 1966 except that the examinations will commence on Monday, 8th May, Ascension Day will be on Thursday, 4th May, and the Whitsun holiday will commence on Monday, 15th May.

Schemes of Examination for 1966 and 1967

1. The schemes of examination below are those on which the Board's question papers for 1966 and 1967 will be set. In most subjects, two alternative schemes are available and all schools, wherever they are situated within the area of the Board, may enter candidates for whichever seems to be the more appropriate to their requirements.

2. Changes from the 1965 examination, which are in any way significant, whether by alteration, addition or omission, have been indicated by a thick vertical line in the margin.

3. The syllabuses within the various examination schemes do not claim to be exhaustive in content, and omission of a topic or item should not be taken to mean that it will not be examined, unless it is specifically stated that this is the intention. It is emphasised that the syllabuses are examination syllabuses and not teaching syllabuses and that their sole purpose is to give an indication of the material upon which question papers will be based. Candidates will always be given credit for knowledge outside the confines of a syllabus provided that it is relevant.

4. Throughout the schemes of examination, *course work*, *assignment* and *project* are defined as follows:—

   Course work—any work done during the course of normal school hours and homework. *Selective course work* will imply that selection is allowed.

   Assignment—a continuous piece of individual or group work involving some investigation and research of not less than one term's duration.

   Project—a piece of individual or group work carried out on a specific topic and involving some investigation and research of short duration.

5. Schools are reminded that if their requirements are not adequately met by the Board's examinations, they may submit their own schemes under mode 2 or mode 3. Under mode 2, the question papers will be set by one of the Board's Chief Examiners. Under mode 3, the question papers will be set by the school but validated by the Board's Chief Moderator. For information regarding the submission of schemes under mode 2 and mode 3, see paragraph 14, pages xvi to xix, of the Regulations.

6. *Special Notice Examinations:* the subjects referred to in paragraph 5, page xv, of the Regulations for which examinations under mode 1 will not be set if the entry is insufficient, are:—

German A and B.
Music A and B.
Spanish.
Commerce B.
Religious Knowledge B.
Rural Studies B.
Metalwork B.
Woodwork B.
Geography A:—
Paper IIB (including the Mediterranean).
Paper IIC (including the U.S.S.R.).
Paper IIE (including South America).
Paper IIF (including Africa).
Paper IIH (including India and South-East Asia).
Paper IIJ (including China and Japan).
History A:—
Papers I/IIB From prehistoric times to about 1688.
I/IID Social and economic to A.D. 410.
I/IIE Social and economic 410–1485.
I/IIF Social and economic 1485–1700.
I/IIH Social and economic prehistoric to present day.
I/IIJ Man's Progress in Knowledge and Technology.
I/IIK Modern History 1900–1955.
History B:—
Paper A Roman Britain.
B Anglo-Saxon England.
C 1066–1485.
H World 1870–1950.
L The Commonwealth.
M Costume.
N Land Transport.
O English Architecture.
P Trade Unions.
Q Sea Transport.
R Agriculture.
S Parliament.

7. (i) Certificates and grades will be awarded on the basis of aggregate marks unless the contrary is specifically stated in a scheme of examination.

(ii) The times allowed for examinations do not include time for reading the question papers, for which additional time will always be given, unless otherwise stated.

(iii) No books may be taken into the examination room unless the contrary is specifically stated.

(iv) Moderators shall have the right to inspect course work and to interview candidates even though schemes of examination allot no marks to this aspect of candidates' work.

(v) Candidates suffering from speech defects may be excused from taking oral examinations provided that they produce certificates signed by their Heads stating that it would be impossible for them to compete with other candidates on equal terms.

(vi) Candidates suffering from handicaps which impede the speed at which they can work may be granted additional time for relevant examinations provided that application (accompanied by appropriate medical certificates) be made to the Board not later than the date of entry to the examination.

(vii) Compulsory or voluntary projects and assignments may be typed provided:—

(*a*) the typing is done by the candidate himself;
(*b*) the candidate's signature is appended; and
(*c*) the typing is countersigned by the teacher as being the unaided work of the candidate.

Expressions of intention contained in the text or in the Appendix to the Regulations and Schemes of Examination, 1965, *which do not appear in this edition must be deemed to have been dropped for the time being.*

Subject panels have been asked to consider whether they require major revisions to their syllabuses for the 1968 *examinations. It is hoped to publish the Schemes of Examination for* 1968 *before the end of the Summer Term,* 1966.

ART AND LIGHT CRAFTS

One examination only will be provided in this subject.

The aim of the examination in Art and Light Crafts is to assess candidates' visual awareness, imaginative ability, and creative use of tools and materials. The examination, which is designed to give to teachers and pupils alike freedom to follow their personal enthusiasms and inclinations, will consist of course work, and the completion of a single piece of work based on an examination paper.

Schools which do not wish to enter for an externally set examination are reminded that they may submit their own schemes to the Board for approval. The Board's only requirement for such schemes is that candidates must submit (*a*) one piece of work certified by his teacher as unaided (whether taken as the result of an examination paper or not), and (*b*) a minimum of four pieces of course work.

Course work. Candidates will be required to submit for assessment a minimum of four pieces of work to be selected from the work done during the course of their secondary education. Folders, sketch books, and note books may be submitted in addition.

The *question paper* will offer a wide choice in all sections of the syllabus, and candidates must do one piece of work only. The paper will be given to candidates one week before they will be allowed to start the work, and four weeks will be given for completion. The work will be done under the supervision of the school and must not be taken from the school premises. Teachers will be required to certify that it is the original and unaided work of the candidate concerned and that the conditions required for completion have been fulfilled.

Marks will be allotted as follows:—

Course Work: 60%. The piece of examination work: 40%.

SYLLABUS

The syllabus gives the sections under which questions will be set in the examination paper and indicates the qualities that the examiners will be looking for.

Candidates are free to use any media and there are no restrictions on size.

Composition

This may be from imagination or from observation in any media. The examiners will look for work which expresses a personal reaction to the subject, and for evidence of the candidate's ability to interpret this visually. Creative talent and individual outlook will be as important as executive skill.

Drawing and Painting from observation

This means drawings or paintings from life, plant, animal, natural or man-made forms. The examiners will look for evidence of visual discovery, reflecting sympathy for the media.

Pattern and Design

This may include work in any media, flat or three-dimensional. The forms used may be invented or observed. The examiners will look for exploitation of colour, form and texture.

Bookcraft and Lettering and allied crafts

Any examples of these crafts may be submitted alone or combined with illustration. The examiners will look for clarity of presentation, layout, good draughtsmanship and craft ability.

Fabric crafts

These may include spun, dyed, printed or woven fabrics. Decorative needlecraft, which must be of original design, may comprise hand and/or machine embroidery and appliqué. The examiners will look for exciting and imaginative use of materials.

Pottery, modelling and sculpture

These may include original handbuilt, wheelmade or moulded work, tiles, mosaic or any clay work in two or three dimensions; sculptures, constructed, modelled or carved in any materials. The examiners will look for a creative approach, good craftsmanship and appreciation of the intrinsic qualities of the materials.

Theatrical Design

This may include puppetry, two- or three-dimensional sets, back drops costume and properties. The examiners will look for a practical understanding of problems of theatrical design.

CITIZENSHIP

One examination only will be provided in this subject.

This examination is not a Special Notice examination but schools intending to take it in 1966 should notify the Board by 30th September, 1965.

The aim of the examination is to provide opportunity and encouragement for candidates:—

(i) to acquire that body of knowledge which the good thinking citizen needs to understand and vote upon vital issues in the modern world.

(ii) to gain first-hand experience and participation in the most important processes of contemporary life.

(iii) to discover and develop certain understandings, skills and attitudes which are set out below.

Understandings: the place of the individual in society. The character of that society—industrial, economic, social, cultural. The fundamentals of a democratic society. The nature and values of other systems. Contemporary world problems.

Skills: gathering and selecting material, observing. Arranging and interpreting this information. Using and interpreting charts and statistics. Speaking or writing clearly and with relevance.

Attitudes: a respect for evidence and a critical approach to any problem. An open mind and an objective assessment of evidence which may conflict with preconceived notions. A willingness to work as a member of a group, to accept certain responsibilities, and (optionally) to undertake some positive individual or group project.

The same arrangements for assessing candidates' work in 1966 and 1967 will operate as in 1965. These arrangements, which are still to be regarded as experimental, are that candidates' grading shall be determined by:—

(i) continuous assessment by the candidates' teachers, subject to moderation by the Board, carrying two-thirds of the marks;

(ii) a written paper of 1½ hours, carrying one-third of the marks.

Course of Study

Candidates should spend a fair proportion of time gathering fact and information, not only outside text-books, but also outside the school, visiting, interviewing and questioning, observing. Formal speaking, debate, mock councils and mock elections are obvious activities which should be attempted on real local, national or international problems.

Later in the course, wherever possible, candidates might be allowed to undertake as individuals or as groups some useful task or service, e.g. a survey of local traffic problems, black spots or bottlenecks, or organisation of help for old people. The nature of this would vary with the locality but it would be entirely voluntary; those who participated could gain credit, but those who did not would not be penalised.

In an attempt to achieve the aims set out above, the content of the course has been divided into seven sections and framed quite deliberately in the form of questions. These are some of the questions that pupils should be asked or should ask themselves and be able to answer.

1.—The Individual

What is my place in modern society? How am I identified?—birth and christening. The Education Act: going to school and school leaving. What rights and freedoms have I?—riding a motor cycle, driving a car. What limitations and responsibilities? No vote, no responsibility for debt.
How are we prepared for life? The education system; types of school, new departures, tripartite or comprehensive, Leicestershire plan, school buildings. Changes in education over the years. Further education. Universities, Colleges of Education, C.A.T.'s, W.E.A. Youth Employment offices. Apprenticeship system.
How can we spend our leisure time? Receiving via entertainment; radio, T.V., cinema, theatre, watching sport. Participating via group activities; all ages, all types—church fellowship to T.A. Giving via voluntary organisations; helping others.

2.—Defence, Law and Order

How do we defend ourselves against attack? The armed services. N.A.T.O., M.L.F. What commitments have we in the Commonwealth, in the U.N.? What use is Civil Defence? How do we defend ourselves against less obvious enemies? Fire—Fire Brigade. Storms—coastguard, R.N.L.I. Disease—vaccination and inoculation.
How do we protect our Society against crime and violence? What are our responsibilities as citizens? The Police Force. The law courts, magistrates, J.P.s. The Coroner. What is the jury system? Pains and penalties: are they fitting? What use are prisons? The Probation Service.

3.—The Welfare State

What is the Welfare State? How does it help us? Public Health Acts; against dirt, disease, illness. Value of drainage, sanitation, pure water. The Ministry of Health and the N.H.S.—hospitals, nursing homes, the welfare worker, health visitor. The problem of the old and lonely. Against unemployment?—what happens when we are out of a job? Against poverty—when are we regarded as "poor"? What about retirement, O.A.P. and Retirement Pensions. Ministry of Pensions. Can we provide for ourselves?—insurance, endowment, superannuation. Where do Charities and charity come in?

4.—Finance: paying for everything

How do we pay our way as individuals? Is this why we work? The wage packet and deductions. The family budget. Rents, mortgages, insurances,

H.P. How do we pay our way as a community? What is the rate and what do we get? Grants in aid.
How do we pay our way as a nation? The national taxation system, the Budget and Government spending. Brief outline—trade and balances of payments to link with Section 5.

5.—Trade, Industry, Communication

Why do we work and what work is there? Survey of local industry, occupations: opportunities available. How are others employed elsewhere? Private and national concerns. Workers and employers. Relationships, negotiations: T.U.'s and Employers' Federations.
How is trade and industry sustained? What sources of power are available?—Future prospects. Public and private users. Moving things. Inland transport: what forms and how useful? Roads and the private motorist. Transport by water, coastal and ocean going. Ports, harbours, lighthouses. What part is played by air traffic?
How do we communicate? Post Office—telephone, telegraph. Radio, V.H.F., "hams", T.V. Press: local paper, national and international, specialised publications.

6.—Governing ourselves

How do we govern ourselves at local level? Local elections. The councils and the permanent officials. Councils' powers and functions—how do they affect us? Rating—link with Section 4. What can we build and where can we live? Town and country planning. Public and private buildings. What sort of buildings do we put up and use? Housing—estates and private development. How do we govern ourselves at national level? What does the Monarch do? Place of Cabinet and Parliament. Ministries and Departments. What is the Civil Service and what does it do? Party system: elections—why should we vote? How is the law made? How does a law affect us? Study, perhaps, a group of related acts and their impact: gaming, housing, public health.

7.—The Great Powers and World Problems

How used we to govern others? What is the Commonwealth? Colonies and Dominions. Problems of independence.
How do others govern themselves—U.S.A., U.S.S.R., China and India? In what ways are these powers similar to each other and to us in their systems? The new nations.
What are the great problems confronting the world and how are we trying to solve them? Peace, disarmament, justice—U.N.O. Ignorance—U.N.E.S.C.O. Health—W.H.O. Famine and under-production—F.A.O. Freedom from hunger, trade—G.A.T.T., E.F.T.A., Missionary Societies.

Commercial Subjects:

COMMERCE

EXAMINATION A

The examination in Commerce will test candidates' knowledge of the general principles of everyday commercial practice. It will also provide an opportunity for candidates to show how the main sections of commercial life can and do influence their own lives and the lives of the community in which they live. Candidates will be expected to show that they are able to obtain information on commercial topics from a number of sources including books of reference, newspapers, trade publications and by studying their local commercial and industrial units.

The examination will consist of a written paper of 2 hours' duration. Optionally and additionally, candidates may submit a project for assessment.

The *written paper* will be in two sections. Section A will consist of three questions, all of which must be answered. The answers required will be of the short, factual type. Section B will consist of not less than eight questions from which candidates must answer three.

The *project* (optional) may be on any commercial topic and will be judged on its quality and originality rather than on its length. A project presented mainly in written form need not be more than 1,500 words in length. Credit will be given for sketches, diagrams, maps and other forms of illustration, and a certain amount of illustration will be expected. Candidates are entirely free to choose their own method of presentation but each project should be the result of individual research and observation.

Marks within the two sections of the written paper will be allotted as follows:—

Section A: 60%. Section B: 40%.

If a project is submitted, it will be marked out of a maximum of 20. The marks awarded may be used to up-grade candidates, but will *not* be used to down-grade them.

SYLLABUS

Marketing

The functions of the retailer. The types of retail business—the small shop keeper, co-operative societies, multiples, departmental stores, mail order businesses, supermarkets, discount houses, direct selling. The functions of the wholesaler—the services offered to the retailer and the manufacturer; the work of agents. The organisation of the wholesale warehouses. Branded goods and resale price maintenance. A simple treatment of imports and exports.

Buying and Selling

Methods of buying, pricing and quoting; terms and conditions of sale. Trade and cash discount. The advantages and disadvantages of credit sales, hire purchase and other instalment systems. The meaning of gross profit, net profit, turnover, rate of turnover.

Methods of Payment

Cash and the concept of legal tender; postal orders, money orders and cheques; credit transfers. Cash with order and cash on delivery.

Banking

Joint Stock and Savings Bank and their functions. Current and deposit accounts, the cheque book, the bank statement, the payments book, credit transfer. Services—standing order, bank loans and overdrafts. The Bank of England and the Clearing House system.

Transport and Insurance

The various types of transport and their advantages and disadvantages. Main principles of insurance—utmost good faith, insurance interest and indemnity. Various kinds of policy.

Business Documents

The documents used in business transactions—enquiries and orders; price lists and illustrated catalogues; invoices; statements; credit and debit notes; delivery notes.
Foreign trade documents will *not* be included.

Advertising

A study of the various forms of advertising including, among others, television, newspapers, and trade magazines. Methods of consumer protection.

Types of Business Units

Sole trader, partnerships, limited companies, co-operative societies, public ownership.
The functions of the Stock Exchange.

EXAMINATION B

This examination is a Special Notice examination and papers will be set only in accordance with paragraph 5 of the Board's Regulations (see page xv).

The aim of the examination is to test the kind of economic knowledge required by candidates living in a highly industrialised society, so as to help them to become wise and efficient consumers. Familiarity with the vocabulary, terms and abbreviations used in retail business will be expected.

The examination will consist of a written paper of two hours' duration. Additionally and optionally candidates may submit a project for assessment.

The *written paper* will be in two sections. Section A will consist of not less than twenty questions requiring word or sentence answers, all of which should be attempted. Section B will consist of not less than seven questions requiring essay-type answers. Candidates will be required to answer either three or four.

Project (optional). Projects should be the result of candidates' own original research. Greater credit will be given for originality and quality than for length. Candidates will be given the greatest possible freedom in the choice of subject and in the method of presentation, e.g. a statistical survey made up mainly of charts and graphs would gain as much credit as a literary study of equal merit. The only stipulation as to subject is that it should be related to the syllabus below.

Marks for the written paper will be allotted as follows:—

Section A: 40%. Section B: 60%.

If a project is submitted, it will be marked out of a maximum of 20. The marks awarded may be used to up-grade candidates, but will *not* be used to down-grade them.

SYLLABUS

The details given below are not exhaustive and questions may be asked on topics which are closely related to those given, which are clearly implicit in the syllabus, and which may reasonably be expected to be taught to the pupils for whom the examination is intended.

Buying wisely

Money management; planned and impulse buying; the advantages of an individual budget, planning for income and expenditure; constituent parts of expenditure of individual and family, necessities and luxuries; budget records.

Planned shopping; ascertaining needs; comparing price, quality and value; effect of changes in supply and demand; advertising and publicity, its functions, methods and dangers; branding, resale price maintenance; indications of quality, trade marks and quality labels, British Standards Institution, consumer protection organisations; magazine services; seasonal and other "sales"; using the advice of the sales assistant; after-sales service.

Buying on credit; the meaning of credit and its function in the economic system; credit as a loan requiring the payment of interest; opening an account with a retailer, the different types of customers' accounts; the invoice and statement of account; credit trading clubs; buying on hire-purchase and by instalments; loans, security for loans, borrowing from money lenders, banks, insurance companies, building societies.

Savings and investment

The need for saving; reason for saving; degree of safety, speed of withdrawal, rate of interest earned; methods of saving such as National Savings, Post Office, and Trustee Savings Banks, bank deposits, insurance policies, building societies, investing in shares, dividends, investing in a house, comparison of buying and renting, methods of buying a house; capital gains and losses.

Means of payment

Essential role of money, variations in the value of money; cheque system and other banking facilities, opening an account, making deposits and drawing cheques; Post Office facilities for money transfers, postal orders and money orders.

Insurance

Kinds of personal risks; insurance as a pooling of risk; how insurance protects the individual and his property; accident and fire insurance, main varieties of life assurance; how to insure.

Travel

Reasons for the importance of easy and rapid movement of persons and goods; comparison of passenger transport by land, water and air; reasons for the differences in regularity and frequency of services, comfort and cost. Factors affecting the sending of freight by land, sea and air.

Communication

Importance of rapid communication; written and oral communication by letter, telephone, telegram and other G.P.O. facilities; use of the telephone directory and Post Office guide; technique of using the telephone.

Public services

The principles of public ownership; names and chief functions of nationalised industries and public corporations for the supply of coal, gas, electricity, water, transport and communications; marketing boards; consumer councils; purpose and incidence of rates and taxes.

Protection of the consumer

A general treatment of the law in relation to the consumer; contracts, "guarantee"; importance of reading and understanding documents before signing; free legal aid; principles of minimum food standards; weights and measures; rights and responsibilities of (a) passengers (b) hotel guests.

Production, distribution and exchange of goods

Elementary treatment of how the economic system operates; how consumers' needs are met; links in the chain from production to consumption, and the place of the manufacturer, wholesaler, retailer and consumer; mass production and the division of labour, occupational distribution; channels of distribution; co-operative society, communal and state enterprise; types of retail business; the individual as a producer and consumer; interdependence of individuals in modern communities; the interdependence of countries and Great Britain's dependence upon imports.

PRINCIPLES OF ACCOUNTS

One examination only will be provided in this subject.

The examination will consist of a written paper of 2 hours' duration, containing not less than seven questions, of which candidates will answer Question 1 and any three others. Question 1 will carry approximately one-third of the marks.

Candidates who take this paper may *not* take Paper B (Accounts) of the Business Practice examination.

SYLLABUS

Candidates will need to have reasonable non-specialist knowledge of the common documents of business (e.g. invoices, statements, cheques, receipts, etc.), and to understand how these are passed through the books of account; and how a business man can assess the profit or loss of his business and the value of his assets at any given time.

Candidates may be required to answer questions on the following topics and techniques and to produce answers which are not only accurate but also well-presented:—

The necessity for book-keeping and accounts to assist in the work of Commerce by recording the exchange of goods and services. Recording of transactions by double entry in relation to the accounts of sole traders, partnerships and non-trading concerns. Significance of these accounts.

The recording of purchases, sales, returns and cash; the ledger and types of accounts; subsidiary books (including cash and trade discounts); sources of information. The trial balance.

The trading period; trading and simple manufacturing accounts; the profit and loss account; distinction between capital and revenue; the balance sheet. Gross and net profits and their relation to turnover, capital and expenses. Fixed and current assets. Long-term and current liabilities. Types of capital—capital owned, capital employed, fixed capital, circulating capital, working capital. Valuation of stock. Profit as an increase of net assets. Easy problems on profit and loss from incomplete records. Elementary treatment of payments made in advance and items due but unpaid. Provision for bad and doubtful debts, depreciation.

Partnership accounts; sharing of profits; interest on capital; current accounts.

Columnar analysis in day books, petty cash books and simple departmental accounts.

Bank reconciliation statements (including understanding of overdrafts).

The accounts of clubs and other non-trading associations; receipts and payments account; income and expenditure account.

BUSINESS PRACTICE

One examination only will be provided in this subject.

Candidates will be required to take two papers, chosen from Office Practice (Paper A), Accounts (Paper B) and Business Calculation (Paper C). Each paper will be of 1½ hours' duration.

Papers A and B will consist of not less than six questions, of which candidates will answer four. At least nine questions will be set in *Paper* C, of which candidates must answer six.

Candidates electing to take Paper B may *not* take the examination in Principles of Accounts.

SYLLABUS

Paper A—Office Practice

Candidates will need to have a knowledge of the main duties of office staff and the most efficient methods of carrying them out. In particular they need to be familiar with the following topics:—

A general understanding of the principles of filing.
Some knowledge of existing filing systems.
Time recorders; time cards; job cards. Preparation of simple payrolls and simple costing charges.
Approach to the use of the telephone; telephone switchboards; intercomm.; tannoy systems.
The work of the shorthand/typist, private secretary, and other office workers; qualifications needed for these posts.
Handling of daily correspondence in the office.
Understanding of the main features of the postal system.
Methods of copying in general.
Sources of information. Reference books, time tables (including use of twenty-four hour clock) and ready reckoners.
Preparation of minutes and understanding of general committee procedure.
Forms of office machinery, e.g. typewriters and teleprinters; adding, calculating, photographic, copying and addressing machines; bookkeeping, punch card, postal franking and sealing machines; computers.
Use of simple business documents such as advice note, packing note, consignment note, invoice, statement, debit note, credit note, cheque, receipt.

Paper B—Accounts

This paper is a Special Notice paper and will be set only in accordance with paragraph 5 of the Board's Regulations. (See page xv.)

Candidates will need to know the elementary principles of accounts and understand the necessity for book-keeping and accounts to assist in the work of commerce by recording the exchange of goods and services. Questions on this section will be straightforward and of a practical type and will be concerned with any of the following topics:—

Recording of transactions by double entry in relation to the accounts of sole traders and non-trading concerns.
Significance of these accounts. The recording of purchases, sales, returns and cash; the ledger and types of accounts; subsidiary books (including cash and trade discounts); sources of information. The trial balance.
The trading period; simple trading and profit and loss accounts; the balance sheet. Distinction between capital and revenue.
Petty cash books, including the principles of analysis.
The accounts of clubs and other non-trading associations; receipts and payments account; income and expenditure account.

Paper C—Business Calculations

Most of the questions in this section will be related to business problems though many will also have a bearing on the everyday activities in which candidates are likely to be concerned.

Candidates will be required to demonstrate that they not only have a good knowledge of the topics given below, but that they can work accurately and speedily, and present their work well.
Ordinary processes of arithmetic: number, weight, measures, fractions and decimals. Metric system and foreign exchange. Ratio and proportion; percentages. Linear graphs. Simple decimalisation. Simple and compound interest. Depreciation; profit and loss. Simple costing of areas and volumes. Averages; cash and trade discount. Simple problems in income tax, rates, rent, household accounts (including public utilities), insurance, mortgages, bankruptcy, hire purchase, purchase tax, stocks and shares.

SHORTHAND

One examination only will be provided in this subject.

Examinations in Pitman's Shorthand will be set at speeds of 50, 60, 70 and 80 words per minute. *Examinations may also be set at speeds of* 90 *and* 100 *words per minute and in other shorthand systems, if schools notify the Board by* 31*st October, in the year preceding the examination, that they require them.*

Candidates may elect to take the examination at any two consecutive speeds, but will submit scripts at one speed only. Teachers are allowed to assist their candidates in deciding at which speed they elect to submit them.

The examination, at all speeds will consist of (*a*) two passages of transcription and (*b*) an outlines test taken from dictation at 30 words per minute, a transcription of which will not be required.

Grades will not be awarded in this subject. In order to obtain a certificate, candidates must achieve 97%* accuracy in the two trans-

* The percentage of accuracy required to obtain a certificate will be given further consideration by the Panels concerned.

cription passages. The accuracy percentage will be based on aggregate errors in the two passages. Candidates must also reach a minimum standard in their outlines test.

The speed at which candidates are successful will be recorded on their certificates.

DETAILS OF THE EXAMINATION

Shorthand notes may be written with either a pencil or a pen and will be handed in with the transcriptions. A fair-copy must not be made of these notes but candidates may underline incorrect outlines and write amended ones in the margin.

The two transcription passages at all speeds will be of three minutes' duration each. At the conclusion of the dictation, candidates will be given ten minutes for reading their notes, during which time transcription will not be allowed. The time allowed for transcription will be at the rate of eight words per minute. Transcriptions must be either in ink or typewritten.

Errors in spelling in the transcription will be penalised at one-third. A punctuation error which alters the sense of the passage will be penalized as a full error; otherwise it will be penalized at one-third.

The outlines test will be based on a passage of approximately 100 words. Three minutes will be given at the end of the test for corrections which, again, shall be done by underlining the incorrect outline and writing the amended version in the margin. Shorthand outlines may be non-vocalised.

TYPEWRITING

One examination only will be provided in this subject.

The examination in typewriting will test the ability of candidates not only to operate the typewriter accurately and methodically at a reasonable speed, but also to set out and display their work in a pleasing and orderly manner.

The examination will consist of five practical tests which, together, will take about 2 hours. These tests will be arranged in two sections. Section A will consist of a copying test of 5 minutes' duration, an accuracy test of 10 minutes' duration, and a simple letter to be typed from material needing amendment. Section B will consist of a manuscript letter or report, and *either* display and/or tabulation work *or* composition of a letter or memorandum from given notes.

Marks will be allotted as follows:—

Section A: 60%. Section B: 40%

Grades will be awarded in this subject and reference will not be made to speeds.

DETAILS OF THE EXAMINATION

Candidates must do the tests in Section A in the order given above. In Section B, candidates may do the two tests in whichever order they prefer.

Erasers must not be used in the copying test or the accuracy test.

The accuracy test will carry the highest proportion of marks but failure in this test will not necessarily mean failure in the examination as a whole. The test will be set on a passage of about 500 words, marked off

at 50 word intervals, and candidates will type as much as they can in 10 minutes. Full marks can be obtained by candidates who type a perfect copy at 25 words per minute.

Marks, throughout the examination, will be deducted for all errors, and in particular for faulty use of erasers, mis-spellings, over-printing, omissions and words wrongly divided at line-ends. Candidates may use any generally accepted system of spacing after punctuation provided it is used consistently.

DOMESTIC SCIENCE

EXAMINATION A

The examination will consist of a written paper of 1 hour's duration, a practical test of 2½ hours' duration, and an assignment.

The *written paper* will be set on the basic Domestic Science course and will be divided into four sections. Sections A, B and C will each consist of three multiple questions requiring short, factual answers on food, fabrics, and the family, respectively. Section D will consist of three questions relating to any part of the basic Domestic Science course and requiring longer answers. Candidates must answer one question from each section, making four questions in all.

Practical test. The practical test will also be set on the basic Domestic Science course. Each candidate will be required to do a specific test which will be allocated alphabetically. A period of 1½ hours' planning time will be given at least two days before the test. Books may be used during this period and during the examination itself. No specific dishes will be set in cookery tests. An oral examination will form part of this test, but will not necessarily be taken at the same time.

Assignment. This will be based on an additional course of study during the three terms preceding the examination chosen by the candidates and assessed by the candidates' own teachers.

Marks will be allotted as follows:—

Written Paper: 30%.
Practical Test: 55% (of which 5% will be given for the oral examination).
Assignment: 15%.

SYLLABUS

The written paper and the practical test will be set on the basic Domestic Science syllabus. The assignment will be based on the Special Study syllabus.

BASIC DOMESTIC SCIENCE

Food

Knowledge of the nutritional value of food. Wise feeding of all members of the family. Planning, cooking and serving of well-balanced meals. This should include consideration of the requirements of different age groups, different occupations, different occasions, and sensible use of convenience foods.

Marketing, including consideration of self-service stores and small shops. Choice and cost of food. Hygiene in shops and in the home. Storage of food in the home.
Preservation of food—the amount and variety of work done to be related to the area in which the candidates live.

Fabrics

Good grooming and personal hygiene. Valeting of clothes.
Laundering of manmade and natural fibres—to include consideration of water, soaps, soapless detergents and simple stain removal.
Consideration of the family wash—to include hand and machine washing, and laundries and launderettes.

Family

The routine work to be done in the home. The modern approach to daily, special and thorough cleaning in the home, to include the care of surfaces encountered in this work and to stress the importance of hygiene in the home.
Consideration of labour-saving appliances, including choice, care, use and value. Consideration of consumer protection.
The management of time in the home. Planned work of the home to promote the comfort of all without over-taxing the housewife. Contribution to be made by all members of the family. Wise use of leisure.
Management of money. Planned spending and simple budgeting. Simple forms of saving.
Kitchen planning.
Safety in the home.
Hospitality in the home, especially related to the serving of meals, duties and responsibilities of guests, hosts and hostesses.

Special Study

This course of study may be based on any aspect of home making and will normally be undertaken during the three terms prior to the examination. Schools will be free to follow the same topic with all their candidates, or to undertake activities in small groups, or to allow candidates to study aspects of individual interest. The following topics are suggested for guidance and it is emphasised that teachers and candidates are completely free to make their own choice within or outside these topics:—

Child care. Social services—related to the family. The house—selection, purchasing and construction. The home. Simple repairs. Simple interior decorating. Experimental work on food, equipment, etc. Rural studies (possibly special reference to deep freezing). First aid. Home nursing.

Teachers are free to assess, or candidates to present, their assignment in the following ways:—

(i) Folders showing the individual work, supervised or unsupervised, of the candidate, or

(ii) An internally set and marked examination paper on the selected course of study, or

(iii) A record of visits and/or investigations undertaken and conclusions reached, or

(iv) A detailed assessment by the teacher of the candidate's efforts in this section of the syllabus, showing the practical, written and oral attainments.

EXAMINATION B

The aims of the examination are to assess the soundness of candidates' working routines, their understanding of some of the scientific principles involved, their awareness of the need for high standards of cleanliness and safety in the home, and their self-reliance. Credit may be obtained, through the optional project, by studying some broader aspect of domestic science.

The examination will consist of a written paper of 1½ hours' duration, and a practical test of 2½ hours' duration. Additionally and optionally, a project may be submitted for assessment.

The *written paper* will be in two sections. Section A will consist of twenty-four questions, each requiring a short answer. There will be about eight questions each on basic cookery, textiles and laundry, and homemaking and housewifery. Candidates should attempt all questions in this section. Section B will consist of five questions on any part of the syllabus, from which candidates must answer two.

The *practical test* will be preceded by a planning session of 1½ hours, which will take place not less than three days before the test. Books may be used during this session and during the examination itself. The original choice of test will be done by lot, but within each test there will be an alternative. The tests will be based on situations likely to occur in everyday life.

Project (optional). Candidates may submit a special study for assessment based on any part of the syllabus.

Marks will be allotted as follows:—

Written Paper: 40%. Practical Test: 60%.

Grades will depend not only on aggregate marks, but also on reaching minimum standards in both parts of the examination.

If a project is submitted, it will be marked out of a maximum of 20. The marks awarded may be used to up-grade candidates, but will *not* be used to down-grade them.

SYLLABUS

Cookery and Nutrition

Basic methods of cookery, with emphasis on nutrition and value for money in the production and service of good balanced meals within real situations.

Textiles and Clothing

A brief study of the sources of supply and structure of the chief textiles. Laundering and cleaning. Some knowledge of modern laundry apparatus, commercial laundry facilities and dry cleaning services.

Design for Living

Homemaking, including guidance in choosing furnishings, equipping and running a home, and the organisation of time and management of money. Safety in the home and treatment of minor ailments.

It is hoped that, during these studies, candidates will become aware of pressures from the commercial world, of the need to possess a sense of discrimination, and of the services available to the community.

ENGLISH (A)

This is a unified examination in Language, Literature and Oral English. It may not be taken with either General English B or English Literature B.

The examination will consist of three written papers, an oral test, and the submission of a folder of original work.

Paper I (1 hour) will require a composition. A wide choice of subjects will be given.

Paper II (1½ hours) will test ability in the use and interpretation of English and will consist of three questions, all of which must be answered.

Paper III (2 hours) will be a literature paper based either on texts prescribed by the Board or on texts supplied by the schools themselves. Candidates will be required to answer three questions, one each from sections on prose, drama and poetry. A wide choice of questions will be given in each section. Candidates may elect to submit course work for assessment in place of taking either the prose or the drama section of this paper.

The *Oral Test* (about 15 minutes per candidate) will consist of three tests in a group situation.

A *folder* of ten pieces of unaided original work done in the candidates' fourth and fifth years as part of their normal course of study will be submitted for assessment.

Marks will be allotted as follows:—

Paper I: 15%. Paper II: 20%. Paper III: 35%.
Oral Test: 20%. Folder: 10%.

DETAILS OF THE EXAMINATION

Paper I—Composition

The hour allowed for this paper includes ten minutes for preparation and no other reading time will be allowed. Notes made during this time will be written in pencil and will be handed in at the end of the examination. Candidates should be advised to select their topics carefully after due consideration of all the subjects offered.

Examiners will look particularly for the ability to create and present ideas, convey feeling and write coherently. Not more than 15 per cent of the marks allotted to the paper will be deducted for mechanical errors. Candidates may be guided by additional printed information or suggestions.

Paper II—Use and Comprehension

Question 1 will test ability to write clear, accurate and appropriate English. It may take the form of a letter, of instructions, of directions or of the description of a simple common process. There will be a choice of topics.

Question 2. A passage will be provided and candidates will be asked to discriminate between fact and opinion. They may be asked to summarize the main points and to answer questions on the argument of the passage. The passage might be an advertisement, a political speech, or an extract from a newspaper.

Question 3. Some facts or figures of a report will be given and candidates will be required to assimilate, interpret and recast them in accurate connected prose. Particular questions may be asked.

One-fifth of the aggregate marks for the paper will be allotted to Question 1 and two-fifths each to Questions 2 and 3.

Paper III—Literature

Two alternative papers will be set, both of which will be divided into sections on Prose, Drama and Poetry. Candidates must answer one question from each section.

The Poetry section will be common to both papers, and questions will be set on *Discovering Poetry Book IV* (Parker) and *Rhyme and Reason* (O'Malley and Thompson). Provided that no notes have been added to the printed text, either or both of these anthologies may be taken into the examination room. Lengthy and indiscriminate quotations should, however, be avoided. Candidates may make reference in their answers to poems not in either of these books but must not take any other book into the examination room.

Paper IIIA is designed to encourage wide and varied reading in Prose and Drama, and questions will be set in sufficiently general terms that they may be answered from reading done on book-lists chosen by the individual schools. Prose books may include biography, travel and other non-fictional types of work.

The Board does NOT require schools intending to take this paper to submit a book-list.

Paper IIIB. Questions will be set on the following prescribed works:—

Prose: Huckleberry Finn—Twain; Under the Greenwood Tree—Hardy; Mr. Polly—Wells; Jane Eyre—Bronte; Animal Farm—Orwell; Day of the Triffids—Wyndham; The Old Man & the Sea—Hemingway; Cider with Rosie—Lee.

Drama: Julius Cæsar—Shakespeare; The Rivals—Sheridan; Arms and the Man—Shaw; An Inspector Calls—Priestley; The Long Sunset—Sherriff; Roots—Wesker.

Course work may be submitted for assessment in place of either the prose or the drama section of Paper III. Candidates electing to submit course work will be given one hour and twenty minutes to answer the other two sections of the paper.

Course work will be based either on at least two works submitted by the school, in the case of Paper IIIA, or on two of the text-books prescribed by the Board in Paper IIIB. One of the works chosen for the prose section in Paper IIIA should be a novel.

Although course work will vary in form and content, it is expected that it will be mainly in connected prose and will display sound knowledge of the texts and some individual judgment. Credit will be given for reference to other works by the same author or to books of a nature similar to the texts offered.

Oral Test

This is intended to test candidates' ability to communicate facts, ideas and opinions, and to speak and read effectively. The test is mainly one of communication. Local accents will be acceptable so long as they do not interfere with communication. The test will be taken in a group situation, each group consisting of not more than twelve candidates. It will be in three parts:—

(i) Each candidate will present a prose or poetry book which he has studied and will read aloud a short passage chosen by the examiner.

(ii) He will then talk continuously to the group for two to four minutes on a subject chosen by himself, and will answer questions from the examiner and/or his fellow candidates. Candidates may use notes and relevant visual material.

(iii) Finally, he will discuss with the examiner topics which will enable him to present his own ideas and opinions. His folder of original work might well, initially, provide a basis for discussion, but other topics in which he has shown interest should be explored. This discussion will probably best be conducted in an informal atmosphere around a table.

Folder of original work

The candidate will present a folder of ten items of unaided, original work done in the normal course of study during the fourth and fifth years. The work should be of a creative nature, such as original verse or short stories or writing in response to given stimuli—visual, aural or tactile—or dramatic dialogue. It should not include mechanical exercises. The items should be presented in their original form; they may show corrections by the teacher but must not be corrected fair copies.

GENERAL ENGLISH (B)

This examination may be taken with English Literature B but not with English A.

The aim of the examination is to assess candidates' ability to communicate intelligibly and to receive with understanding, information, ideas and feelings (both written and spoken) appropriate to set situations. Candidates will be expected to exercise reasonable accuracy in the use of language and to be able to arrange their thoughts in logical sequence upon subjects in which they can be expected to be interested.

The examination will consist of two papers, each of 2 hours' duration, and an oral test. Candidates may, additionally and optionally, submit a project for assessment.

Paper I will test composition and will consist of two questions, both of which must be answered.

Paper II will test the use and interpretation of English and will consist of six questions, from which candidates must answer any four.

Oral Test. Eight activities are listed from which candidates must choose two in which to be examined.

Project (optional). Additionally and optionally, candidates may submit for assessment a folder of personal work of a detailed nature.

Marks will be allotted as follows:—

Paper I: 40%. Paper II: 40%. Oral Test: 20%.

If a project is submitted, it will be marked out of a maximum of 20. The marks awarded may be used to up-grade candidates, but will *not* be used to down-grade them.

DETAILS OF THE EXAMINATION

Paper I—Composition

Candidates will be advised to spend 15 minutes in preparation. Notes made during this period should be in pencil and must be handed in. Two compositions are required:—

Question 1. A composition of about 300 to 350 words chosen from a number of topics, some of which will be outlined. (Candidates need not necessarily use these outlines.) The topics will provide an opportunity for candidates to demonstrate their ability to express themselves in any of the following styles—narrative, descriptive, argumentative, reflective.

Question 2. A composition of about 200 words in which candidates will be required to show evidence of general reading, and of their interest in and understanding of what they have read. A wide choice of subjects will be offered. Books to which candidates refer may be either fiction or non-fiction but should be by reputable authors.

Five-eighths of the aggregate marks for the paper will be allotted to Question 1 and three-eighths to Question 2, i.e. 25% and 15 % respectively of the aggregate marks for the whole examination.

Paper II

A prose passage of about 400 words, or two shorter passages, will be set. The subject matter will present a problem or set a situation. There will be six questions from which candidates must answer four. The questions will be designed to test some or all of the following: understanding of factual information, reactions to the use of language, ability to summarise, to use appropriate language for a given purpose, to form reasoned opinions, and to interpret a diagram or table of statistics. Candidates may be asked to answer in any of the following forms: a letter, a report, a statement, a conversation, a set of minutes. Questions on formal grammar and vocabulary will not be set.

Oral Test

Regional accents will be fully acceptable provided that they can clearly be understood by persons not familiar with them.

Candidates may choose any two of the following:—

(i) Reading aloud a passage of prose or poetry and discussing its content with the examiner. (Candidates will choose the book or set of poems, and the examiner will select the passage to be read) *or*
Reading aloud and answering questions on a passage of prose or poetry set by the examiner. (Candidates will be allowed ten minutes for preparation.)

(ii) Giving a prepared talk and answering questions on the subject matter.

(iii) Discussing a topic selected by the examiner from the school course work.

(iv) Listening to a prepared talk or reading and then discussing it with the examiner.

(v) Discussing a prepared topic with a group of not more than six.

(vi) Explaining the significance of a graph or histogram.

(vii) Presenting dramatically a passage from a play or poem. The passage is to be chosen by the candidate or candidates.

(viii) Improvising in pairs. (Candidates will be allowed ten minutes for preparation.)

Project

The purpose of this optional part of the examination is to give credit to candidates who develop interests and enthusiasms inside or outside their normal work in school. Evidence of individual research should be shown but candidates will be given complete freedom of choice both as to the subject matter and form of presentation.

ENGLISH LITERATURE (B)

This examination may be taken with General English B but not with English A.

The aim of the examination is to assess the breadth of candidates' reading.

There will be a *written paper* of 2 hours' duration which will be divided into four sections—Prose Fiction, Biography and Travel, Drama, Poetry—each consisting of not less than five questions. Candidates must answer four questions in all, chosen from not less than three sections.

Questions will be designed to assess understanding of story, plot and character, appreciation of a writer's reflections of or upon the world in which we live, and candidates' personal reactions to language as an instrument of creative writing.

Candidates may bring into the examination room un-annotated copies of the poems which they have studied. Books relating to sections other than the poetry section may not be brought in.

SYLLABUS

The following reading list is given only as an indication of the type and quality of reading which candidates will be expected to have undertaken. It should not be regarded as a list of "set books" and candidates need not therefore be restricted to the titles given.

Prose Fiction

Harrap Book of Modern Short Stories; Murder Must Advertise—Sayers; Jane Eyre—Bronte; The Cruel Sea—Monsarrat; The Invisible Man—Wells; A Tale of Two Cities—Dickens; Animal Farm—Orwell; Fair Stood the Wind for France—Bates; King Solomon's Mines—Haggard; Tarka the Otter—Williamson.

Biography and Travel

The Wooden Horse—Williams; The Kontiki Expedition—Heyerdahl; A Tale of Two Horses—Tschiffely; My Family and other Animals—Durell; My Early Life—Churchill; Reach for the Sky—Brickhill; Brother to the Ox—Kitchen; Lark Rise—Thompson; The Egg and I—Macdonald; My Life—Keller.

Drama

Nine Modern Plays—ed. Hampden; You Never Can Tell—Shaw; An Inspector Calls—Priestley; Christopher Columbus—MacNiece; The Winslow Boy—Rattigan; Badger's Green—Sherriff; New Directions—ed. Durband, pub. Hutchinson; Shakespeare:—The Trial Scene (Merchant of Venice); The Funeral Orations of Brutus and Mark Antony (Julius Cæsar); The Tricking of Malvolio (Twelfth Night); The Gadshill Robbery and Falstaff's account of it (Henry IV Pt. 1); The Play of Pyramus and Thisbe (A Midsummer Night's Dream).

Poetry

Examples of narrative, lyric, reflective and humorous verse.

Foreign Languages:

FRENCH

EXAMINATION A

The examination in French will test candidates' ability to understand the language both in the written and spoken form, and to express themselves in speech and writing. Such understanding and expression will be based on simple everyday usages and situations. The examination will take account of the clearly overwhelming view that translation should not appear and that the teaching of grammar should not be an end in itself. Since the oral section of the Examination carries one-half of the total marks, teachers will feel able to give great emphasis to the spoken language.

The examination will consist of three written papers, and an oral test comprising reading and conversation.

Paper I (1 hour) will consist of two comprehension tests. The first will require candidates to answer in English about five questions written in English on a passage of about 200 words of narrative or descriptive French. The second will require answers in French to ten to fifteen questions written in French on a conversational or narrative passage of about 150 words.

Paper II (1 hour) will require a composition of about 120 words. A choice of not less than four subjects will be given.

Paper III (2 hours) will consist of three aural tests to be given by the candidates' own teachers. These will consist of a dictation of between 80 and 100 words and two aural comprehension tests based on passages of between 100 and 150 words each, the first requiring answers in English to questions printed in English, the second requiring answers in French to questions given orally in French.

Oral Test. Candidates will be required to read a short passage after studying it for 5 minutes. Thereafter the examiner will conduct conversations with them in French on everyday topics, situations, and interests.

Marks will be allotted as follows:—

Paper I: 25%. Paper II: 25%. Paper III: 35%. Oral Test: 15%.

SYLLABUS AND DETAILS OF THE EXAMINATION

Subject matter and vocabulary will be such as might reasonably occur within the experience of candidates taking the examination. Marking throughout the examination will be positive, i.e. marks will be awarded for whatever is correct and of value irrespective of errors which occur elsewhere.

There will be no need for candidates to have knowledge of the subjunctive mood.

Paper I—Comprehension

Questions will be asked in the order of occurrence of the answers in the text. There will be two tests in this paper:—

(i) Questions in English to be answered in English on a passage of approximately 200 words of narrative or descriptive French. There will be about five questions, some asking "why", "how", etc., others calling for descriptions of people or places. Each question will require from two to four points of detail. Marks will not be deducted for English expression nor, within reason, for spelling.

(ii) Questions in French to be answered in French on a passage of approximately 150 words of conversational or narrative French. There will be ten to fifteen short questions. Answers in conversational style, e.g. "Parce que . . .," "Pour + Infinitive", etc., will be acceptable. Examiners will look for the replacement of nouns with pronouns where this would be natural. Credit will be given both for comprehension and expression.

Paper II—Free Composition

Approximately 120 words. Marks will be neither deducted nor awarded for writing more than 120 words. There will be five alternative questions and at least one will be set in each of the following forms:—

A series of pictures telling a simple story; a personal letter; the development of a simple outline story taking the form either of short phrases or questions in French; and a dialogue.

Paper III—Dictation and Aural Comprehension

Dictation: the dictation passage, of 80 to 100 words in length, will be given by the candidates' own teachers. Punctuation must be in French. Grammatical traps will be avoided. The first part of the passage will be simple and in the present tense. The second part will be somewhat more difficult in tense and vocabulary.

Method: Reading at normal speed; dictation of each phrase—repeated; three-minute revision; final reading—slightly slower than usual, with short pauses for checking; two-minute revision.

Aural Comprehension: this will take the form of two separate tests:—

(i) A passage of 100 to 150 words—the test to be given by the candidates' own teachers.
First reading after which the candidates will be given the questions printed in English.
Two minutes allowed to the candidates for reading the questions.
Second reading during which the candidates may make notes.
Ten minutes allowed for writing the answers in English.
Final reading and three minutes allowed for final check.

(ii) A passage of 100 to 150 words—the test to be given by the candidates' own teachers.
First reading of the passage.
Second reading in sections with a spoken question in French after each section and a pause for thought after each question.
Third reading as for second reading with a pause for note-taking after each question.
Ten minutes allowed for writing answers in French.
Final reading and three minutes allowed for final check.

Oral test

Reading and Conversation: candidates will be required to read a short passage after studying it for five minutes. They should aim at reading with understanding and should pronounce vowel sounds correctly. Extra credit will be given for good intonation, use of the uvular "r", and correct liaison.

After hearing candidates read, the examiner will conduct a conversation with them in French on everyday topics, situations and interests. He will also expect candidates to obey simple instructions given in French and to respond to the normal forms of greeting and politeness. Part of the conversation may be based on a picture selected by the candidate from four chosen by the examiner.

Excluding the five minutes taken to prepare the reading passage, the test will occupy approximately 15 minutes.

EXAMINATION B

The aim of the examination is to test candidates' ability to:—

(i) understand the language when spoken by a native speaker talking on a subject within their experience, provided the pace is not too fast and that unusual turns of speech are avoided;

(ii) reply intelligibly in speech to straightforward questions on subjects within their experience;

(iii) read with reasonable fluency and good understanding a straightforward prose passage in French;

(iv) express themselves with reasonable accuracy in speech and in writing on subjects within their linguistic experience.

The examination will consist of two written papers of $1\frac{3}{4}$ hours' and $1\frac{1}{4}$ hours' duration respectively, and three oral tests. Additionally and optionally, a project may be submitted.

Paper I ($1\frac{3}{4}$ hours) will consist of a composition, and a combined translation and comprehension test. No choice will be given in respect of the composition but candidates will be assisted by a series of pictures, by a set spoken commentary based on these pictures and by being given a summary of the story written in French. They will then be asked to write a composition of not less than 125 words based on what they have seen and heard. For the combined translation and comprehension test, candidates will be required to translate about one-third of a passage in French of approximately 250 words. Questions in English, to be answered in English, will be set on the remainder of the passage.

Paper II ($1\frac{1}{4}$ hours) will consist of dictation, and an aural test. For dictation, a simple passage of about 100 words will be given by the candidates' teacher. The aural test will be given from a passage of French prose recorded on a disc or on tape. After the first hearing, candidates will be given a question paper in English; after a second hearing, they will answer the questions in English.

Oral tests. Candidates will be tested in each of the following:—

(i) An assessment will be made, by their own teachers, of candidates' oral abilities and attainments.

(ii) Candidates will be tested by their teachers on their spoken response to a number of questions in French.

(iii) Candidates will be required to read a passage of French prose, of about 120 words.

Project (optional). Candidates may submit a project on any aspect of French life which is of interest to them.

Marks will be allotted as follows:—

Paper I: 40%. Paper II: 20%. Oral tests: 40%.

If a project is submitted, it will be marked out of a maximum of 20. The marks awarded may be used to up-grade candidates, but will *not* be used to down-grade them.

SYLLABUS

The references below to Le Français Fondamental are intended to serve as a guide only, for the purposes of the examination. They are not meant to be a limitation upon vocabulary or grammar content for teaching purposes.

Vocabulary: this will be as far as possible that suggested in Le Français Fondamental, premier degré.

Grammar: the grammatical content will also follow closely the lines suggested by Le Français Fondamental, premier degré, with certain major amendments to the sections dealing with the verbs which are summarised as follows:—

Knowledge of the following parts of the verb will be expected: present, imperfect, perfect (passé composé), future simple, imperative, present infinitive, past participle, gerundive.
Recognition only of the following parts is expected: past historic, present conditional, past infinitive.
Candidates will not be expected to know the subjunctive, nor use constructions requiring the subjunctive.
Knowledge of parts of the verb not referred to is not expected.

GERMAN

Both German examinations are Special Notice examinations and papers will be set only in accordance with paragraph 5 of the Board's Regulations. (See page xv.)

EXAMINATION A

The aims of the examination are the same as for French Examination A.

The examination will consist of two written papers each of 1 hour's duration and an oral section comprising dictation, two reading tests and conversation.

Paper I will consist of two comprehension tests based on different passages in German of reasonable length. The first will require answers in English to questions set in English; the second will require answers in German to questions set in German.

Paper II will be a composition of between 100 to 150 words. The choice of subjects will include:—

(i) A composition story based on at least four pictures.
(ii) A description based on two or three pictures.
(iii) A letter on a simple, everyday theme.
(iv) Dialogue.

Paper III will be a dictation passage of between 80 and 100 words and will be given as described in French Examination A.

Paper IV will consist of two reading tests. The first will require the reading of prescribed sentences to test accuracy and the second the reading of a passage to test fluency.

The *Oral test* will be a conversation test. The examiner is advised to start by asking simple questions, and then lead on to general unprepared conversation and conversation based on pictures dealing with everyday scenes and topics.

Marks will be allotted as follows:—

Paper I: 30%. Paper II: 20%. Paper III: 10%.
Paper IV: 15%. Oral Test: 25%.

SYLLABUS

Subject matter and vocabulary will be such as might reasonably occur within the everyday experience of candidates taking the examination.

EXAMINATION B

The form of the examination will follow closely the one shown for French Examination B.

SPANISH

One examination only will be provided in this subject.

This examination is a Special Notice examination and papers will be set only in accordance with paragraph 5 of the Board's Regulations. (See page xv.)

The examination will consist of two written papers each of one hour's duration and an oral section comprising four tests.

Paper I will consist of two questions, both of which must be answered. The first will require the translation of a passage from Spanish into English, and the second will be based on a passage in Spanish on which questions in Spanish will be answered in Spanish.

Paper II will require a composition of about 150 words. There will be a choice of at least four subjects.

Oral Tests.

(i) Re-telling Test: candidates will be required to re-tell in Spanish a simple story or episode previously read to them by the examiner.

(ii) Reading Test: candidates will be given a passage in Spanish to study for five minutes and will then read it to the examiner.

(iii) Conversation: the examiner by simple and straightforward questions will lead candidates into an informal discussion centred on their life and experience.

(iv) Picture Description Test: a picture or series of pictures will be shown to candidates and they will be required to describe them in Spanish.

Marks will be allotted as follows:—

Paper I: 30%. Paper II: 20%. Oral Tests: 50%.

SYLLABUS

Subject matter and vocabulary will be such as might reasonably occur within the everyday experience of candidates taking the examination.

GEOGRAPHY

EXAMINATION A

The examination will consist of two written papers, each of two hours' duration.

Paper I will be in three sections—Map Reading, Physical Geography, and General World Geography. The map reading section will consist of either one or two compulsory questions. The Physical Geography and General World Geography sections will be alternative and at least four questions will be set in each section. Some of the questions in both sections will be of the short, objective type and candidates must answer two questions from these two sections.

Paper II will be set in nine alternatives—IIA to IIJ. Each paper will be in three sections—Section A, British Isles; Section B, a regional study; and Section C, topics. Questions on Sections A and C will be common to all papers but each Section B will be devoted to a different region. A wide choice of questions will be given on the British Isles and regional study sections, and one question will be set on each of the seven Topics. Candidates must answer two questions on the British Isles, and any two questions from the other two sections, thus answering four questions in all.

The two papers will carry equal marks.

Atlases may be taken into the examination room and used in both papers. The ones used must not contain written passages of an explanatory nature, illustrations, diagrams or detailed economic maps, and schools may be required to state the atlas or atlases which their candidates have used.

Paper I SYLLABUS

Map Reading

Map reading from O.S. 1 inch or 2½ inch map extract will test a knowledge of conventional signs, map co-ordinates, use of scale and direction, contour shapes, gradient, intervisibility, settlement, occupations, transport; also an understanding of the relationships of the features shown on the map. The use of photographs may be included in this section.
The landscape types to be examined may include a coastal area, a chalk area, a limestone area, and a glaciated highland area.

Physical Geography

This section will make use of objective testing, diagrams, photographs, etc., to examine:—

(i) the earth as a sphere, movement and results, day and night, seasons, latitude and longitude, time;

(ii) agents of erosion and deposition and their resultant land forms.

General World Geography

Human response to environment in the major natural regions will be the theme and a knowledge of the climate, vegetation, crops, mineral wealth and trade of these regions will be expected.

Papers IIA to IIJ

British Isles (*common to all papers*)

A working background knowledge will be expected—physical features, climatic differences, major population centres, major occupations. In addition, one question will be set covering each of the following:—

1. Bristol Channel coastal hinterland: Land's End to St. David's, and Lower Severn Basin including Worcester and Vale of Evesham.
2. A general study of ports: Plymouth, Bristol, Newport, Swansea, Liverpool, Southampton, London, Hull, Dublin, Belfast, Glasgow.
3. The fishing industry.
4. The textile industry.
5. A farming area: Fens and East Anglia or S.E. England or the Highlands and Islands of Scotland.
6. A study of a region of heavy industry: Central Scotland or North East England or the Midlands of England.
7. Means of transport, especially as it affects the West Country.
8. Movement of population in the British Isles.
9. Town sites.

Regions

The study of *one* of the following regions:—

Paper IIA: North West Europe—Norway, Sweden, Denmark, Belgium, Netherlands, France, West Germany.
Paper IIB: The Mediterranean Coastland.
Paper IIC: U.S.S.R.
Paper IID: North America (excluding Mexico and West Indies).
Paper IIE: South America.
Paper IIF: Africa.
Paper IIG: Australia and New Zealand.
Paper IIH: India, Pakistan, Burma, Malaysia, Indonesia.
Paper IIJ: China and Japan.

Geography A papers IIB, C, E, F, H and J are Special Notice papers and will be set only in accordance with paragraph 5 of the Board's Regulations. (See page xv.)

Topics (*common to all papers*)

One question only will be set on each of several topics. Traditional essay-type questions will be included but will be set in such a way as to give adequate leads to candidates. Topics for 1966 and 1967 will be: soil erosion and conservation; irrigation; major air routes; plantation agriculture; sources of power; areas, sparsely or densely populated; production and trade in one commodity—timber or meat or oil.

EXAMINATION B

The examination will consist of two written papers each of 2 hours' duration, and the submission of a field notebook. Additionally and optionally, course work may be submitted for assessment.

Paper I will be in two sections. Section A will be on map work and Section B on the study of a Local Area—which, for each school, shall consist of the county in which it is situated and one adjacent county within the area of the Board. There will be one compulsory question in Section A. Section B will be divided into four parts. One part will consist of a compulsory question based on a map; in the other three parts a choice of questions will be given. Candidates must answer one question from each part, i.e. four questions in Section B, making five questions on the whole paper.

Paper II will also be in two sections. Section A will be on the British Isles and Section B on General World Geography. A compulsory map question will be included in each section. Section A will consist of three other, and Section B of two other, parts. In these parts a choice of questions will be given. Candidates must answer one question from each part, i.e. four questions on the British Isles and three questions on General World Geography, making a total of seven questions on the whole paper.

Field Notebooks. Field Geography shall be recorded in notebooks which should contain equivalent to at least one day per term spent in the field during candidates' fourth and fifth years. An oral examination may be required in connection with the Field Notebook.

In all parts of the examination, credit will be given for the use of illustrative material such as sketch maps, other sketches and diagrams, graphs, etc.

Marks will be allotted as follows:—

Paper I: 40%. Paper II: 45%. Field Notebook: 15%.

If course work is submitted, it will be marked out of a maximum of 20. The marks awarded may be used to up-grade candidates, but will *not* be used to down-grade them.

SYLLABUS

The details given in the syllabus below are not exhaustive and questions may be asked on topics which are closely related to those given, which are clearly implicit in the syllabus and which may reasonably be expected to be taught to the pupils for whom the examination is intended.

The syllabus has been framed on the assumption that the physical basis of Geography shall provide the background knowledge required in all parts of the examination.

Paper I

Section A—Map work:

The 1 inch Ordnance Survey maps (seventh series) will be used to test the following: scale, distance and direction, six figure grid references, symbol identification; the reading and appreciation of major relief and drainage, and their effects on communications and settlement sites.

Section B—Local Area

Specific questions may be set on Cornwall and Devonshire (for whom Examination B was originally designed) but alternative questions will be set in general terms so that they may be answered by schools in other areas of the Board.

Definition of boundaries; relief, drainage and variety of coastal features; the climate in relation to the remainder of the country, and the influence of relief on rainfall, snowfall and temperature; water supplies; agricultural and industrial land utilisation in its broadest sense, with attention to climate, slope, shelter and other factors; the economy of the area based on its natural resources, including the origin and development of industry (e.g. mining, quarrying, forestry, fishing, agricultural, engineering and textile industries); special problems of the area (e.g. effects of distance from markets, lack of fuels, seasonal unemployment); the influence of relief on communications; geographical factors affecting the growth and functions of settlements; the tourist industry.

Paper II

Section A—British Isles

The general appreciation of the major physical features, weather and climate.

The major characteristics of British farming today; the study of an upland and a lowland farming area; mixed, arable, intensive and extensive farming; the relation of these areas to their markets.

The fishing industry today.

Industry—reasons for modern location of industry, and the variation and adaptation of older locations. This can be pursued by reference to the development of one industrial area as well as to a limited number of specified industries such as engineering, iron and steel, motor vehicles, chemicals, wool, cotton, man-made fibres, ship-building. Attention should be drawn to the use of fuels and to the introduction of new fuels.

The necessity for imports and exports, and their relationships.

The importance of London and other major centres of population.

Section B—General World Geography

Elementary mathematical geography—definitions of latitude and longitude, time. The general appreciation of the world distribution of the major physical features, e.g. the great plateaus, fold mountain ranges and large plains. Factors which affect climate, e.g. latitude, altitude, distance from the sea, ocean currents, aspect, wind direction. The major vegetation regions of the world and their climates.

Six aspects of modern world geography will be examined. For 1966, these are:

(*a*) The development of pastoralism and agriculture in areas which suffer from water shortage, e.g. interior Queensland, the lower Nile Valley.

(*b*) Peopling of the empty lands, as in Australia or Brazil.

(*c*) Measures taken to combat soil erosion, as in mid-west U.S.A.

(*d*) Land reclamation, as in the Netherlands.

(*e*) The importance of one great waterway, e.g. the Panama Canal, the Suez Canal, the St. Lawrence and Great Lakes Waterways.

(*f*) A study of the geographical factors favouring the growth and development of one great industrial area outside the British Isles.

In 1967, for (*b*) and (*f*) substitute:—

(*b*) The problem of over-population as in India.

and (*f*) The world air routes which focus on London.

Field Notebooks

The field work syllabus has deliberately been made as wide as possible to allow individual schools to follow topics related to their local areas or to the special interests of their teachers. In all cases the results of the field work should be presented by (a) maps, sketches and other means, e.g. models, and (b) a summary of findings in written or diagram form.

Marks will be awarded on the basis of geographical content rather than on style and presentation, and candidates will be expected to be able to converse intelligently about their work.

Any topic may be chosen for study in the field. The following list is for assistance and guidance only.

A farm study—position, size, water supply, field division, crop rotation, livestock, labour, machinery, buildings, markets, transport, power supplies, changes in farming pattern.

A local industry (manufacturing)—site, raw materials, labour, buildings, markets, transport, by-products, special problems, changes.

A quarry or mine (china clay, slate, coal)—site, local rocks, relief, water supply, processes, products, uses, markets, changing pattern of industry.
A village study—location, types of buildings, materials (stone, brick, wood), roofing (thatch, tile, slate), use of buildings.
Fishing (port or industry)—size and position of harbour, access to fishing grounds, types of boats and gear, varieties of fish, marketing, associated industries, changes in the fishing industry.
Urban studies—site, growth, functions, shopping facilities, industry, traffic problems, entertainments, boundaries (natural or arbitrary).
Water supplies—the local water supply, the rivers (river gauging), seasonal variations, tidal observations and problems.
Local topography—the measurement of slope, simple soil analysis, field sketches, influence of physical features on roads and railways, bridges and cuttings.
Local weather studies—regular observation, recording and summarising of the elements of weather.
Micro-climate variations—temperature traverses, frost incidence, rainfall variations, effect on plants in the local area.
Observation of sky—cloud types, association with wind direction, variation in position of constellations such as the Great Bear, elevation of the sun, the apparent path of the sun.
Traffic census recording—volume of traffic, types of vehicles, seasonal variations, car registration analysis.
Parish studies—origin of parish and village names in the area, relation of boundaries to physical background, amenities, rural depopulation, land use.
Aspects of physical geography—a survey of a local stream, variety of coastal features, land use and valley forms, elementary transect work, moorland scenery, simple geology (rocks, fossils).
Topical problems—storm damage, beach erosion, mine working and prospecting, local footpaths.
Transport—a study of railways, waterways (canals and rivers), airways, changing patterns of transport.
Field work conducted outside the local area—field Study Centres, overseas visits.

It may be desired to develop some aspects of these topics further, e.g.: comparison between farms in areas of varied relief; contrasting old established and modern industries; town studies based on location of broad types of industry, influence of an estuary, siting round a castle or church, development of docks.

HISTORY

EXAMINATION A

The emphasis throughout the examination will be on social and economic rather than on political topics. Scope will be given for time charts, diagrams, sketches, maps and illustrations of various kinds, and credit will be given for their use. Credit will also be given for references to local history, wherever appropriate.

The examination will consist of two written papers of $1\frac{1}{2}$ hours and 1 hour respectively, chosen from the following alternatives:—

General History of Britain

Papers IA and IIA: from prehistoric times to the present day.
Paper IB and IIB: from prehistoric times to about 1688.
Papers IC and IIC: from about 1688 to the present day.

SOCIAL AND ECONOMIC DEVELOPMENT OF BRITAIN

Papers ID and IID: from prehistoric times to A.D. 410.
Papers IE and IIE: from A.D. 410 to 1485.
Papers IF and IIF: from 1485 to 1700.
Papers IG and IIG: from 1700 to the present day.
Papers IH and IIH: outline paper—from prehistoric times to the present day.

WORLD HISTORY

Papers IJ and IIJ: Man's progress in knowledge and technology.
Papers IK and IIK: Modern history 1900 to 1955.

History A papers I/IIB, D, E, F, H, J, and K are Special Notice papers and will be set only in accordance with paragraph 5 of the Board's Regulations. (See page xv.)

All *Papers I* will consist of two sections. Section A will consist of not less than fifteen questions requiring phrase or sentence type answers from which candidates must answer ten. In all papers except Paper IK, Section B will consist of not less than ten questions requiring paragraph answers, from which candidates must answer any four. In Paper IK, Section B will consist of two questions of at least five parts each on each of the topics listed in the syllabus. Candidates will be required to submit paragraph answers to two parts of each of two questions chosen from different topics (thus submitting four paragraph answers in all as in the other Papers I). In both sections of all Papers I at least one question will always be set on each topic listed in the relevant syllabus.

All *Papers II* will require essay-type answers. Papers IIA to C will consist of one question, and Papers IID to K will consist of two questions, on each of the topics listed in the syllabus, and candidates will be required to answer any two questions, except that in Paper IIK their questions must be chosen from different topics.

In summary, Section A of Papers I require an outline knowledge of the major part of the relevant syllabus (or, in the case of Paper IK, part of the syllabus). Section B of Papers I and Papers II require a more detailed knowledge of four topics (or, in the case of Paper IIK, two topics).

Marks will be allotted as follows:—

Papers I: 60%. Papers II: 40%.

SYLLABUS

The details given in the syllabuses are not exhaustive and questions may be asked on topics which are closely related to those given, which are clearly implicit in the syllabus, and which may reasonably be expected to be taught to the pupils for whom the examination is intended.

GENERAL BRITISH HISTORY

A. FROM PREHISTORIC TIMES TO THE PRESENT DAY

1. *Pre-Roman Britain:* cavemen; stone monuments; hill forts; British tracks; tribal life.

2. *Roman Britain:* Julius Cæsar; Roman conquest; Pax Romana; Roman towns, villas, roads, mines, buildings, dress, coinage.

3. *Beginnings of the English Nation:* Anglo-Saxon conquest; St. Augustine; Celtic saints; Saxon bishops; Alfred and the Danes; Normans and Hastings; Domesday Book.

4. *Life in the mediaeval towns and villages:* town sites; charters; markets; guilds; the manor; village social life; seasonal occupations; the forest.

5. *The mediaeval church:* church architecture; monastic life; hermits and friars; power of the mediaeval church; crusades; the parish priest.

6. *Castles, weapons and armour:* motte and bailey; stone keeps; concentric castles; stone weapons; spears and pikes; crossbows and cannon; chain mail; plate armour; domestic life in the castles; tournaments; simple heraldry.

7. *Geographical discoveries:* the mediaeval world; Columbus; Cabot; rivalry with Spain and Portugal; Frobisher; Hawkins and Drake; Raleigh; East India Company; Captain Cook.

8. *The Reformation:* Wycliffe; Henry VIII; Sir Thomas More; Mary Tudor; Tyndale; the Prayer Books; translation of the Bible; Pilgrim Fathers.

9. *Age of Elizabeth I:* Mary Stuart; Armada; Poor Law; Tudor costume; Tudor music; the theatre.

10. *Troubles of Stuart England:* Gunpowder plot; Civil War in the West; plague of London; fire of London; Monmouth's rebellion.

11. *English farming:* open field system; enclosures; farming improvements; high farming and the 19th century depression; modern mechanisation and marketing.

12. *Social reformers of the 19th century:* Elizabeth Fry; Ashley and the Factory Acts; Wilberforce; Robert Owen; Peel; Rowland Hill; Dickens; Florence Nightingale.

13. *Transport and communications since 1700:* turnpikes, tolls and stage-coaches; canals; railways; cars; aeroplanes; telephone; radio.

14. *Growth of the Commonwealth:* the British in North America and in India.

15. *Homes:* caves; huts; lake dwellings; Roman villa; Saxon cottages; Tudor manor house; Georgian terrace; the 19th century industrial town; modern council estate.

16. *Ships:* logs; rafts and coracles; Roman galleys; Viking ships; mediaeval caravels; galleons; India merchantmen; iron and steam ships; a modern dockyard.

17. *Industries since 1750:* textiles; iron and steel; coal; engineering.

18. *Great scientists:* Newton; Faraday; Priestley; Jenner; Madame Curie; Baird; Fleming; Pasteur.

19. *How we are governed:* national government and its functions; parliament and elections; local government and the work of the councils; rents; rates and taxes; social services; health; education.

20. *United Nations Organisation:* its purpose and functions.

B. From prehistoric times to about 1688

1. *Pre-Roman Britain:* cavemen; stone monuments; hill forts; British tracks; tribal life.

2. *Roman Britain:* Julius Cæsar; Roman conquest; Pax Romana; Roman towns, villas, roads, mines, buildings, dress, coinage.

3. *Beginnings of the English nation:* Anglo-Saxon conquest; conversion of England; Celtic saints; Saxon bishops; Alfred and the Danes; English village life; Saxon architecture; Edward the Confessor; Viking raids and Danish settlements.

4. *Norman England:* Hastings and the Conquest; Domesday Book; Norman settlement; the feudal system; Edward I.

5. *Life in a mediaeval village:* the place of the manor; the manor court; village social life; strip farming; seasonal occupations; forestry and forest laws; animal husbandry; water mills; costume; mediaeval sports; the Black Death and the Peasants' Revolt.

6. *The mediaeval town:* town sites; typical town plans; charters; markets; guilds; fairs; merchants and trade; trade routes; ports and shipping; the importance of wool.

7. *The mediaeval church:* church architecture; monastic life; hermits and friars; power of the mediaeval church; crusades; the parish priest.

8. *Castles, weapons and armour:* motte and bailey; stone keeps; concentric castles; stone weapons; spears and pikes; crossbows and cannon; chain mail; plate armour; domestic life in the castles; tournaments; simple heraldry.

9. *Growth of Parliament and Justice:* the Witan; King in Council; Magna Carta; Simon de Montfort; The Model Parliament; trial by ordeal; the jury system; the King's Justice.

10. *Homes and social life:* caves; huts; lake villages; Roman villas; Saxon cottages; the Saxon hall; Norman manor; mediaeval town houses; furniture; tapestries.

11. *Geographical discoveries:* the mediaeval world; Columbus; Cabot; rivalry with Spain and Portugal; Frobisher; Hawkins and Drake; Raleigh; East India Company; Captain Cook.

12. *Reform in religion:* Henry VIII; Sir Thomas More; Mary Tudor; Tyndale; translation of the Bible; Pilgrim Fathers; the Puritans; the Quakers; Wesley; the Sunday School movement.

13. *The problems of Elizabeth's reign:* Mary Stuart; the Armada and relations with Spain; enclosures; results of closure of monasteries; Poor Law Act; royal finance.

14. *The great Elizabethan age:* life in London and other cities; music; art; the theatre; costumes; furniture; home life; sport and pastimes; poetry; architecture.

15. *Troubles of Stuart England:* gunpowder plot; causes of the Civil War, with special reference to local history; Oliver Cromwell; results of the Commonwealth period; the Plague and the Great Fire; Monmouth's Rebellion; the 1688 Settlement.

C. From about 1688 to the present day

1. *British ships:* Henry VIII's battleships; the Armada; wars with the Dutch; work of Samuel Pepys; navy in Nelson's time; Nelson's victories; conditions of the navy in the 17th and 18th centuries.

2. *The growth of Empire:* The East India Company; Clive and Hastings; British colonies in North America; War of Independence; British settlements in West Indies; Botany Bay.

3. *Relations between England and Scotland:* Mary Queen of Scots; union of the Crowns; massacre of Glencoe; union of Parliaments; Jacobite rebellions.

4. *The first Industrial Revolution and the Agricultural Revolution:* new methods of producing iron; early textile machinery; the water wheel; Newcomen's engine; James Watt; coal mines. New methods of producing better crops; stock improvement; enclosures, the effect on farmers and labourers; Coke; Bakewell; Townshend.

5. *Transport from the Elizabethan period to* 1815*:* roads; Telford; MacAdam; turnpikes and tolls; carrier carts; coaches; sedan chairs; sea and coastal trade; canals.

6. *The age of reform:* Reform Act of 1832; the end of transportation; abolition of slavery; prison reform; Poor Law reform; Factory Acts; formation of Police Force; Wilberforce; Fry; Peel; Hill; Shaftesbury; Robert Owen; Dickens; Plimsoll.

7. *Transport:* Railways; balloons; airships; steamships; cars; aeroplanes.

8. *Communications:* penny post; telephones; telegraph; newspapers; libraries; cheap books; radio; television; films.

9. *Growth of the Commonwealth:* Canada develops self-government; Grenfell and Labrador; the development of Australia and New Zealand; India's progress from the Mutiny to self-government; the Union of South Africa and the Boer War; the opening up of Africa.

10. *Health and education:* improvements in sanitation and hygiene; public health; Simpson, Pasteur, Lister, Florence Nightingale, Jenner, Madame Curie, Ross, Fleming; dames' schools and ragged schools, monitorial system; church societies; development of secondary education; growth of universities.

11. *The growth of democracy:* evils of the 18th century system; Chartists; how working men got the vote; the Prime Minister and Cabinet; our parliamentary system; voting by ballot; the development of the party system; votes for women; how a bill becomes law.

12. *Farming:* the Agricultural Revolution; Corn Laws; mechanisation on the farm; effects of competition from the New World; application of science to agriculture; effects of First World War on farming.

13. *Town life:* results of Industrial Revolution; first efforts at town planning; Victorian buildings; improvements in factory conditions before 1939 (scope here for local references); gas and electricity; housing estates and their facilities; trade unions.

14. *Local government:* the increase in power of local and county councils; the rise of new boroughs; the responsibility of local councils; their officers; raising and spending the rates; the changing attitude towards the care of the unemployed; hospitals, schools, police and fire service.

15. *Causes and results of the First World War:* the rising power of Germany; the balance of power; why Britain was involved; the cost of the war in men and money; the aims of the League of Nations; problems following on the Treaty of Versailles; Britain's foreign policy 1920–1939; the rise of dictators.

Social and Economic Development of Great Britain

D. From prehistoric times to A.D. 410

1. *The development of early man:* major anthropological discoveries.

2. *Buildings and furniture:* homes in the Stone Ages; Bronze Age huts; Iron Age farms; hill-forts; lake villages; lowland towns; Roman towns, including private and public buildings; Roman villas; early temples; burial of the dead; barrows; furniture in Roman Britain.

3. *Costume:* clothes and jewellery from the old Stone Age to Roman times.

4. *Entertainment:* games, pastimes, sports, music, etc.; amphitheatre and circus.

5. *Education:* training for living; Roman education; development of the tools of learning.

6. *Agriculture:* the quest for food including cave painting; development of farming methods from the new Stone Age to Roman times.

7. *Industry and trade:* tools from the Stone Age to the fall of the Roman Empire; the development of pottery; the pole-lathe; casting and moulding; decorative metalwork; industry in Roman Britain; minerals; pottery and glass-making; water-powered machinery; trade in the Bronze and Iron ages; Roman shops; barter; currency.

8. *Society:* Class structure; the notion of a society; eating habits; social life, etc., from the Stone Age to the fall of the Roman Empire with emphasis on Roman times.

9. *Warfare and weapons:* Stone Age and Bronze Age weapons; Iron Age chariots and slings; the Roman Army, its forts and weapons; Hadrian's wall, the Antonine wall; forts of the Saxon Shore.

10. *Transport and communications:* Stone Age transport (trackways, rollers, sledges, dug-out canoes, coracles); Bronze Age transport; use of the wheel; Iron Age development of wheeled transport and of ships; Roman transport—sea and land; roads, ships, and canals.

E. A.D. 410—1485

1. *Buildings and furniture:* country and town houses; churches; monasteries; basic construction and interiors; furniture; heating; lighting; sanitation; general living conditions.

2. *Costume:* clothes of the rich and poor; servants; religious orders.

3. *Entertainments:* sports; pastimes; gambling; dancing; plays; tournaments; music.

4. *Education:* the work of the monks; schools; colleges; friars; books; printing.

5. *Agriculture:* farming throughout the period; seasonal occupations; forestry; animal husbandry.

6. *Industry and trade:* salt; wool; mills; markets; fairs; guilds; town plans and sites; charters; tolls; trade routes.

7. *Society:* social structure; manor; village law; hue and cry; trial; punishments.

8. *Warfare and weapons:* development of castles; sites; life in castles; siege weapons; personal weapons; armour.

9. *Health, medicine and social welfare:* blood-letting; medicine and witchcraft; spread of disease; scurvy; Black Death; leprosy.

10. *Transport and communications:* transport; roads; messages; trade routes; shipping.

F. 1485—1700

1. *Buildings and furniture:* homes and gardens, including interior decoration and furnishing; churches; famous architects.

2. *Costume:* dress of all classes; Puritan influence.

3. *Entertainment:* theatre, bear-baiting, etc.; tournaments; public holidays; sport, pastimes and games; music.

4. *Education:* universities; Inns of Court; schools; tutors; printing press; libraries; Royal Society; scholars; superstitions.

5. *Agriculture:* enclosures; draining of the Fens; farming; implements; books; government regulation.

6. *Industry and trade:* guilds; domestic system; early factories; government regulation; Royal Exchange; joint stock companies; markets; development of colonies.

7. *Society:* social structure of the period; people and life in town, country and court.

8. *Warfare and weapons:* arms; armour; strategy; famous soldiers and campaigns; growth of the navy; famous sailors and engagements.

9. *Health, medicine and social welfare:* traditional remedies; progress; plague; provision for the sick, unemployed and poor.

10. *Transport and communications:* roads; vehicles; inns; ships; compass; famous voyagers.

G. From 1700 to the present day

1. *Buildings and furniture:* houses; churches; factories; estates; towns; basic construction and interiors; general living conditions; architects and furniture makers.

2. *Costume:* dress of all classes.

3. *Entertainments:* sports; pastimes; theatre and music hall.

4. *Education:* schools; books; development of the state and private systems; famous reformers.

5. *Agriculture:* new methods of farming; stock improvements; enclosures; mechanisation on farms; Common Market.

6. *Industry and trade:* major industries in the Industrial Revolution; Factory Acts; Trade Unions; Common Market.

7. *Society:* reform and reformers; police; abolition of slavery; prisons; Poor Law; growth of the welfare state.

8. *Warfare and weapons:* social and economic effects of the major wars of the period on the life of the people; development of weapons; uniform and strategy.

9. *Health, medicine and social welfare:* famous medical discoveries of the period; public health; National Health Service; social services.

10. *Transport and communications:* roads and vehicles; canals; railways; shipping; aircraft; penny post; telegraphy; newspapers; radio; T.V.; libraries.

H. Outline paper on British social and economic development—from prehistoric times to the present day

1. *Buildings and furniture:* caves; huts; lake dwellings; Roman villa; Saxon villages; Tudor manor house; Georgian houses; the 19th Century town and homes; modern council estate; new towns.

2. *Costume:* Stone Ages; Romans; Saxons and Vikings; Normans; Tudors; Georgian costume; Victoria to present day.

3. *Geographic discoveries:* Viking voyages; the mediaeval world; Columbus; Cabot; Frobisher; Hawkins and Drake; Raleigh; East India Company; Cook; the opening up of Africa in the 19th century; commonwealth trade; polar exploration.

4. *Education:* monasteries; dames' schools and ragged schools; church schools; monitorial system; public schools; development of secondary education; growth of education.

5. *Agriculture and industry:* primitive agriculture; development of the plough; water-mills; rotation of crops; "three field" system; enclosures; Tull; Townshend; Coke; Bakewell; modern mechanical farming; intensive cultivation; "Cottage" industries; the Industrial Revolution and its effects—factory system and results; inventors and inventions; gas and electricity and their effects; nuclear energy and industry.

6. *Society:* life in a Roman town; life in mediaeval towns and villages; markets; guilds; entertainment; the manor; village; social life; seasonal occupations; domestic life of castles; food; music and the theatre in

Tudor England; social life and entertainments in Georgian England; Victorian family life; social life in the mid 20th Century; tribal society in Scotland and Wales.

7. *Warfare and weapons:* weapons in stone; Bronze and Iron Ages; the Roman Army—equipment and organisation; bows; cross-bows; armour; siege-engines; Greek fire; castles; gunpowder and development of artillery; arquebus to automatic weapons; development of fighting ships; submarines; tanks; aircraft; nuclear weapons; chemical war.

8. *Medicine:* an outline knowledge of medicine in the ancient world, e.g. Hippocrates and Galen, and in the Renaissance period, e.g. Harvey and the circulation of the blood; more detailed knowledge of modern times—Jenner; Ross; Pasteur; Röntgen; the Curies; Freud; Fleming; development of National Health system, and its importance in the welfare state.

9. *Transport:* importance of invention of the wheel; chariots; wagons; stage-coaches; railways; motor transport; logs; rafts; coracles; Roman galleys; Viking ships; mediaeval caravels; galleons; India merchantmen; iron and steamships; hovercraft; balloons; airships; aircraft; space travel.

10. *Communications:* rivers; sea; Roman roads; post; turnpikes; tolls; Telford; MacAdam; canals; railways; air; telegraph; telephone; radio; television.

World History

J. Man's Progress in Knowledge and Technology

An outline knowledge of fire; writing; the wheel; sails; bronze; iron; water-power; steam; explosives; electricity; wireless; television; nuclear energy; automation; flight; rockets and space exploration.

A more detailed knowledge of four of the following:—

1. *Solar system:* early astronomy; Ptolemy; Copernicus; Galileo; Kepler; Newton; Einstein.

2. *Medicine:* Greeks—debt to Egypt; study of disease; dissection; Hippocrates; study of anatomy and physiology under Ptolemies; Galen; Renaissance—Harvey and circulation of the blood; modern times—Jenner; Ross; Pasteur; Röntgen; Madame Curie; Freud; Jung; Fleming.

3. *Transport:* invention of the wheel; chariots; wagons; stage-coaches; railways; motor transport; logs; rafts; coracles; Roman galleys; Viking ships; mediaeval caravels; galleons; India merchantmen; iron and steamships; hovercraft; balloons; airships; aircraft; space travel.

4. *Communications:* rivers; sea; Roman roads; post; turnpikes; tolls; Telford; MacAdam; canals; railways; air; telegraph; radio; television.

5. *Science in agriculture and industry:* land surveying; development of the plough; irrigation; water-mills; windmills; rotation of crops; "three field" system; enclosures; Coke; Tull; Townshend; Bakewell; Young; intensive cultivation; the Industrial Revolution in the 18th century—factory system; inventors and inventions; gas; electricity; nuclear energy and industry.

6. *Science and warfare:* Bronze and Iron Ages; spear throwers; boomerang; bows; cross-bows; armour; siege-engine; Greek fire; castles; gunpowder and development of artillery; arquebus to automatic weapons; development of warships; submarines; tanks; aircraft; nuclear weapons; effect of science on strategy and tactics.

7. *Science and the Space Age:* challenge to modern man; shrinking world (communications); rockets and exploration of space; possible future developments; U.S.S.R. and U.S.A. and moon projects; problem of world peace.

K. Modern History 1900—1955

Paper IK, Section A, will test outline knowledge of Part A of the syllabus below. Paper IK, Section B and Paper II will test detailed knowledge of any two topics from Part B of the syllabus.

Part A

Pre 1914: Britain—the Empire; fading industrial supremacy; domestic problems; Ireland; Trade Unions; votes for women; Lloyd George and House of Lords; Europe—empires of Germany, Austro-Hungary, Turkey, Russia, France, Belgium and Holland; rivalries up to the First World War.
1914—1918: the Western Front; the Russian Revolution.
1918—1939: U.S.A.—Woodrow Wilson's Fourteen Points; American isolation; Roosevelt and New Deal; the new map of Europe; post-war Britain, Ireland; depressed areas; General Strike; Europe—economic consequences of war and peace; communism and fascism; League of Nations—Japan and Manchuria; Abyssinia; Spain; Munich.
1939—1945: German control of Europe; North Africa; invasion of Russia; Pearl Harbour; Far East; Hiroshima and Nagasaki.
1945—1955: the German surrender; U.N.O.; a divided Europe; Britain—Labour Government; nationalisation; the welfare state; economic exhaustion; fuel crisis; N.A.T.O.; Israel; Chinese revolution; Korean war; nationalism and new nations.

Part B

1. *Communications:* the effect on local, national and international affairs of changes in transport—railways, canals, cars, aircraft, ships, rockets, etc.; and information—newspapers, telephone, radio, cheap books, cinema, television, etc.

2. *Industry:* resources; processes; mechanisation; scientific development; labour; industry in the local economy; industry in the national economy; industry and international trade; changing patterns of world industry.

3. *Agriculture:* resources; processes; mechanisation; scientific development; labour; agriculture in the local economy; agriculture in the national economy; agriculture and international trade; changing patterns of world agriculture.

4. *The pattern of family life:* family life in all aspects; homes, clothes, income, social security, leisure, status of women, etc. To be considered, wherever possible, from the local, national and international standpoint.

5. *Political ideas:* western democracy; the welfare state; the American political system; communism; fascism.

6. *Internationalism and new nations:* imperialism and its systems; plans for international harmony; League of Nations; U.N.O.; the refugee problem; new nations.

7. *Economics:* the decline of imperial and industrial power; Britain's economic and class structure in 1913; economic consequences of First World War; Britain's changing role in world trade; boom and slump; Keynes and changing economic theory; effects of Second World War; nationalisation; World bank; other international institutions; relations with new nations.

8. *The Imperial relationship:* Empire to Commonwealth; the move towards independence in other empires.

9. *War:* the psychology of war; effect of changing weapons; the local, national and international effect of World Wars I and II.

10. *The Arts:* popular and minority forms; the modern idiom in music, painting, sculpture, architecture, literature, drama, dance; jazz, pop-music, cinema, television, theatre, etc. Credit will be given for evidence of direct experience of any of these forms of art.

EXAMINATION B

The examination will consist of two written papers, each of 1½ hours' duration. Additionally and optionally, candidates may submit course work for assessment.

Candidates may choose to take papers on *either* two of the periods *or* one of the periods and one of the topics, except that Paper F may not be taken with Paper J, nor Paper G with Paper K.

British History Periods

Paper A. Roman Britain.
Paper B. Anglo-Saxon England.
Paper C. 1066—1485.
Paper D. 1485—1603.
Paper E. 1603—1760.
Paper F. 1760—1870.
Paper G. 1870—1950.

World History Period

Paper H. 1870—1950.

British Social and Economic History Periods

Paper J. 1760—1870.
Paper K. 1870—1950.

Topics

Paper L. The Commonwealth.
Paper M. Costume.
Paper N. Land Transport.
Paper O. English Architecture.
Paper P. Trade Unions.
Paper Q. Sea Transport.
Paper R. Agriculture.
Paper S. Parliament.

History B papers A, B, C, H, L, M, N, O, P, Q, R and S are Special Notice papers and will be set only in accordance with paragraph 5 of the Board's Regulations. (See page xv.)

All papers will be in identical form. Each will consist of three sections. Not less than four questions of objective type (based on time charts, maps, etc.) will be set in Sections A, from which candidates must answer two. Sections B will contain not less than four questions of "guided" type from which candidates must answer one. Not less than seven questions requiring essay-type answers will be set in Sections C, from which candidates must answer two. Candidates must, therefore, answer five questions in all in each paper.

Course work (optional). Candidates are free to select what they submit for assessment.

The two papers carry equal marks, i.e. 50% each.

If course work is submitted, it will be marked out of a maximum of 20. The marks awarded may be used to up-grade candidates, but will *not* be used to down-grade them.

SYLLABUS

The details given in the syllabus below are not exhaustive and questions may be asked on topics which are closely related to those given, which are clearly implicit in the syllabus and which may reasonably be expected to be taught to the pupils for whom the examination is intended.

British History Periods

A. Roman Britain

The evidence: archæological excavation methods, stratification, dating, coins, inscriptions, pottery, buildings, etc.; written sources.

Britain on the eve of conquest: tribal kingdoms, level of civilisation, natural background—highland and lowland zones, areas of settlement; hill forts and fighting organisation; the Belgae; pre-conquest Roman influence.

The Roman Empire c. A.D. 43: extent, differences between East and West; military system, government, organisation; romanisation of the Western provinces—towns, villas, roads; romanised life in outline.

The Roman conquest: campaign of A.D. 43; triple advance to Fosse Way frontier; client kingdoms and pacification; conquest of Wales, Boudicca's rebellion; conquest of the north, Agricola.

Consolidation of the conquest: the frontier, Hadrian's Wall, Antonine Wall; forts and roads; military life; Severus' re-establishment of the frontier.

Romanisation of the Lowlands: government, central and local; coloniae and tribal capitals, minor civil settlements, villas, varying degree of romanisation of different classes—native farmsteads; differences between lowland and highland zones.

Economic life: minerals, potteries, wool, corn; influence of road-system, fenland canals; external trade.

Religion: imported and native cults; Mithraism; early evidences of Christianity; temples, churches; late survival of paganism.

The Fourth Century: decline and change in the Empire, and its effects in Britain; urban decay, changes in villa economy; reduced efficiency of the army; inflation.

External pressure: Saxon raids and the Saxon Shore forts; Picts, Irish, the breakdown of A.D. 368; troop withdrawals, contraction and re-organisation of defences; military collapse of Empire and abandonment of Britain.

Roman Britain in decline: emergency war-lords; Christian missionary expansion; nature of Saxon invaders—culture, agriculture, organisation; extinction of romanised life—evidence from towns and villas; extent of British survival in occupied areas; contrasts with Gaul in nature and aims of invaders, duration of conquest, and consequent effects; permanent influence of Roman roads, town-sites, etc. A knowledge of the general outline of the main road system and of the location of the major civil and military sites will be required. Candidates should be able to give a general description of types of public and private buildings, and should have some idea of the kind of life lived by different classes of the population.

B. Anglo-Saxon England.

Political: the unification of England—the early invasions; the rise of Northumbria, Mercia and Wessex; the Danish invasions; Alfred; the making of the Kingdom (Edward the Elder to Harold).

Social: the bonds of society; the classes of society; the law; education and literature; art; dress; village life; sports and entertaining; food; architecture.

Religious: the heathen English; the spread of Christianity, Synod of Whitby; Theodore of Tarsus; St. Dunstan; monastic life.

Economic: the beginnings of towns and trade.

C. 1066—1485

POLITICAL

William I and the Norman Conquest—results. The story of the Bayeux tapestry.
William Rufus and Henry I, "the Lion of Justice"; the "White Ship" and the ensuing question of succession.
The Norman feudal system—feudal relationships in simple outline.
The period of anarchy—Matilda and Stephen.
Henry II—judges and juries—the story of Thomas à Becket.
Richard I and the Crusades—a simple outline of the aims, course and some of the results; some of the main characters—e.g. Saladin, Frederick Barbarossa, Leopold of Austria.
John and Magna Carta—how views have changed on both King and Charter.
Henry III—Simon de Montfort and the beginnings of Parliament.
Edward I, II and III: Wales and the Marcher Lords—Prince Llewellyn, Scotland—Wallace, Bruce, Bannockburn, etc.; the Hundred Years War —outline of causes, methods of warfare.
Richard II and Bolingbroke—the Peasants' Revolt.
The Lancaster succession.
Henry V—the "Soldier King"; Agincourt, Joan of Arc.
The Wars of the Roses—the struggles between York and Lancaster.

SOCIAL

The manorial system—life on a typical mediaeval manor.
The making of Domesday Book—local extracts and examples.
The Church—monasteries; the coming of the friars; pilgrims and pilgrimages, Chaucer and the Canterbury Tales.
Travel and transport—land and sea.
Children and education—schools and universities.
The guild system—types of jobs and training.
The growth of ports and towns.
Fairs and markets.
Law and order—the jury methods of law enforcement; old forms of trial, ordeal, etc.
Castle building and warfare—Norman, Edward I, weapons and methods of fighting.
Trade—merchants, the wool trade—contacts with Europe, etc.
Homes and costume.
The Black Death—its social and economic results.
Travel—contacts with the East; the journey of Marco Polo.
It is suggested that the candidate should be introduced to such sources as Chaucer, Langland, the Paston Letters, etc., to illustrate certain aspects of mediaeval life, for example:—the wool trade and family life.

D. 1485—1603

European background: aspects of the Renaissance; stories of Leonardo da Vinci, Michelangelo, Erasmus. Voyages of discovery late 15th and early 16th centuries; Reformation and counter-reformation—Luther, Calvin and Ignatius Loyola.

The establishment of the Tudor monarchy: Henry VII; Henry VIII and Wolsey.
Religious changes in England: Henry VIII and quarrel with Papacy; Act of Supremacy and Thomas More; English Bible—Tyndale, Coverdale; closing of monasteries—Thomas Cromwell; Edward VI; Cranmer and the English Prayer Book; Prayer Book rebellion; progress of reformation; Lady Jane Grey; Mary Tudor—Catholic reaction; Elizabethan settlement; Puritan and Catholic minorities.
The Age of Elizabeth I: story of Mary, Queen of Scots; the war with Spain; Drake and the Elizabethan seamen; the development of the theatre.
Life and work in an English village in Tudor times.
Life and work in Tudor London.
The problem of poverty.
The development of ships and the navy.
Costume in Tudor times.

E. 1603—1760

England in the early 17th Century: life in country and town—homes, dress and travel; problems of government—religion and politics, money troubles, relations with Spain and the Thirty Years War.

Charles I and Parliament: Charles rules with Parliament; Charles rules without Parliament; Parliament meets again; Civil War.

The Commonwealth: experiments in government; religion and the Puritan code; relations with foreign countries; Ireland and Scotland.

Restoration England: life of the people—fashions, dress, amusements, travel; Plague and Fire; foreign policy—relations with Europe; emergence of political parties.

James II and the Glorious Revolution: Monmouth's rebellion; William of Orange; the Revolution settlement.

The clash of Empires: in Europe, up to the Seven Years War; Colonies and trade—N. America, Africa, India.

The beginnings of modern Science: new knowledge in medicine, mathematics, chemistry, astronomy, etc.; study of the people concerned; new knowledge as it affected the lives of the people—health, methods of agriculture, beginnings of the Industrial Revolution.

Parliament and people: growing importance of Parliament; Walpole; growth and development of party government.

John Wesley: the Methodist movement.

F. 1760—1870

Political

The political framework 1760; Whigs and Tories; George III's methods and their failure; Pitt and the Tory party, progress and reaction; Fox, Grey and the demand for Reform; the Reform Act 1832; Chartism.

Social and Economic

Agricultural Revolution and later history of agriculture; the Industrial Revolution—textiles, iron and steel, coal; towns and factories—social conditions and humanitarian activity; religion—Methodism, the Oxford movement, etc.

The French Revolution

First and later reactions in Britain; the war at sea—Trafalgar; the war on land—the Peninsular war to Waterloo; the Continental System and its effects.

Effect of Napoleonic Wars

Hardship, young Tories, Whig Action 1833—41, free trade, Anti-Corn Law League, Peel and Gladstone; Castlereagh and Canning; Palmerston.

British Empire

Loss of American colonies; start of second British Empire.

G. 1870—1950

The period illustrates the change in Britain's international position, the growth of state interference in the social and economic life of the individual, and the great change in the position of women.

Chief political events and personalities

Gladstone's great reforming ministries; Disraeli and Tory democracy; Salisbury and Chamberlain—the Imperial idea; the 1906 Liberal ministry—Lloyd George; the World War and the Great Depression; Baldwin; the Second World War; W. S. Churchill.

At Home

The extension of State control—education; social services; conditions of work; nationalisation; changes in society—extension of franchise, lessening of inherited powers; organised labour; the position of women; population changes; leisure activities; the second Industrial revolution—motor cars and aircraft; mass communications; the rise of light industries; the siting of new industries; the Irish question.

Abroad

Imperial developments; foreign relations—especially the diplomatic alliances preceding the first and second world wars; the decline of Britain as a major international power.

H. World History, 1870—1950

The European Powers before 1914: the German Empire of Bismarck and William II; difficulties of the Third French Republic; nature of the Austro-Hungarian Empire; the last days of the Turkish Empire; the Russia of the Tsars.

The two World Wars: causes and outlines of the main campaigns on land, at sea and in the air.

The European states of the inter-war years: the rise of Mussolini, his achievements at home and his ambitions abroad; the rise of Hitler, his policy in Germany and occupied lands, his programme of aggression abroad; Kemal Ataturk and the new Turkey; Franco and the Spanish Civil War; the fate of Czechoslovakia and Poland.

International conferences and organisations: the Congress of Berlin; the Peace Conference of 1919; the League of Nations, its organisation and its failure; the United Nations and its organisation; other international bodies, e.g. the Red Cross.

Africa: the scramble for Africa in the 1880s and 1890s; later developments.

The Far East: the rise of Japan as a world power and the policy of expansion leading to Pearl Harbour; the Chinese revolution and the victory of Communism in China; India's progress towards independence.

The U.S.S.R.: the rise of the Communist party; the revolution of 1917; Russia under Lenin and Stalin—internal development and relations with the non-Communist world.

The U.S.A.: the outline of American political history; the growth of American industry and wealth; outstanding Presidents of the period; the Great Depression; Roosevelt, the New Deal and the end of isolation.

Europe after 1945: the occupation of Germany; Communist control of Eastern Europe; the beginning of the "cold war" and the Berlin blockade; the formation of N.A.T.O.

Development of international communications during the period

The Commonwealth: South African War; the formation of the Commonwealth of Australia; British colonisation in Africa; the zenith of the British Empire; the transition from Empire to the idea of Commonwealth.

There will be a generous choice of questions in all sections of the paper.

BRITISH SOCIAL AND ECONOMIC HISTORY PERIODS

J. 1760—1870

Agriculture: change in agricultural methods, enclosures, social distress, shift of population, Speenhamland system, Pioneers, Corn Laws, Anti-Corn Law League, Repeal of Corn Laws, high farming period; Townshend, Coke, Bakewell, etc.

Industry: textiles, coal, iron, steel, steam, factory system and social effects; inventors and pioneers; major inventions. The Great Exhibition.

Communications: roads, turnpikes, engineers, canals, bridges, inventors, railways, post telegraph.

The people and movements of population: growth and changes in distribution, Chartism, beginnings of co-operative movement, Trade Unions, Poor Law.

Social: public health, education, town and country life, social reforms, the more important factory and mines acts; police; penal reform.

K. 1870—1950

Development of techniques and organisation in major industries: cotton, coal, iron and steel; new industries.

New forms of power: electricity, oil, atomic power.

Developing patterns of trade: finance and banking; exports and imports; development of competition; free trade and protection; imperial preference; post-war balance of payments problem.

Changes in agriculture: competition; new techniques; slump and prosperity periods.

Transport and communications: the motor car and road transport; the completion and contraction of railway system; the aeroplane; shipping; telegraph, telephone, radio, T.V., etc.

Trade Unions: unions for the unskilled—Dock Strike, etc.; development of the Labour Party; problems of unions in early 20th century—Taff Vale, etc.; unions between the wars; the General Strike; power and organisation of Unions today.

Establishment of the welfare state: education; health, insurance, pensions—measures of 1906 government; Beveridge Report and post-war welfare legislation.

Changes in houses and homes: wages, standards of living; food; clothing; entertainment houses and furniture; amenities; rights and prospects; work and leisure.

Topics

L. The Commonwealth

Exploration, commercial enterprise and attempts at colonisation in the Tudor period.

Overseas expansion under the Stuarts—foundation of colonies in North America, trading posts in Africa and the East; Anglo-Dutch rivalry.

The old colonial system; Anglo-French rivalry in North America and India.

The American War of Independence; end of first British Empire.

The development of the second British Empire—extension of British rule in India; settlements in Australia and New Zealand; Briton, Boer and Bantu in South Africa; movements and revolutions affecting the new Empire; abolition of the slave trade and slavery; the new colonial policy; changes in opinion about the Empire in the 19th century and early 20th century.

Self-government and federation in Canada, Australia, New Zealand; the Boer War and the Union of South Africa.

Scramble for colonies in Africa and the Pacific.

The First World War; imperial conferences; the Statute of Westminster; other inter-war developments.

The Second World War; post-war developments.

M. Costume

Credit will be given for candidates' ability to relate costume and fashion to the social and economic background of the age being studied.

The Ancient Civilisations: ancient Egypt, Babylon, Assyria, Greece, Rome, Byzantium—sources of knowledge, clothes, underwear, headgear, hair styles, cosmetics, jewellery, colour, battle attire, etc.

Early British and Roman: Britons; Roman influence.

Anglo-Saxon period.

Normans: sources of information; Bayeux tapestry; masculine dress, feminine gowns, hair styles, jewellery, etc.

Plantagenets: new items of dress; continental influence; English weaving.

Lancaster and York: more formal styles; contrasts and changes—from the brief to the extremely voluminous; shoes and boots; head-dresses; fabrics; designs.

Tudor: transitional period; doublet, shirt, hose, feminine gowns; neck line, accessories, jewellery; Henry VIII—extravagance and lavishness in dress, German and Swiss styles, Holbein; Elizabeth I—climax in extravagance in dress, Spanish influence.

Stuart and Commonwealth: James I—continuation of Elizabethan styles, lack of cleanliness; Charles I—Cavalier age, elegant masculine attire, importance of hair, hats, etc.; Commonwealth—attire reflecting political views, age of ribbons and lace-aprons, cloaks, materials and colour contrast; Charles II—gay colours, rich fabrics and trimmings, knee decoration, low wide décolletage.

Hanoverian: French influence continued—wigs, heavy use of cosmetics and perfumes; gradual change in masculine dress; English lead in masculine dress after 1780; simpler styles—hoop and corset; complete change after French Revolution—hessian; wellington, jockey and top boots; emphasis on natural figure.

Victorian: abundant sources of information; late Victorian—lounge suit, frock coat; cut-away-bodice and neck line; feminine accessories.

Edwardian and World War I: standardisation of masculine dress; mass production tailoring; emancipation of women; effect on dress; sports wear, bathing costume.

Between the wars: reaction; bob and shingle; Eton crop; Oxford bags; hats; zip fasteners, etc.

Contemporary dress.

N. Land Transport

Ancient

Portage often done by women—carriage of goods on head, by head strap, by basket, etc.; domesticated animals, dog, ox, horse; the wheel—its use for war, the chariot; the track. Roman roads and posts; mediaeval roads; transport by cart, wagon, etc.; bridge building; postal services.

Modern

Roads: maintained by parishes; their state up to the end of the 18th century; turnpike trusts; Metcalfe, Telford, MacAdam; coaches, coaching inns.

Canals: Brindley, Telford, and the era of canal building; the Pennine canal system, advantages and disadvantages.

Railways: G. & R. Stephenson, Trevithick, Brunel; building, completion, amalgamation, government intervention.

Twentieth Century roads: new importance of the internal combustion engine, rapid disappearance of the horse, etc.; road casualties, motorways, autobahns, autostrada; turnpikes and throughways in U.S.; city congestion.

O. Architecture

The examination will cover domestic, ecclesiastic and military architecture from Roman Britain to the present day with reference to the materials used.

Roman Britain: villas, town planning, public buildings.

Saxon England: peasant huts, homesteads, burhs, churches (timber and stone).

Norman (1066—1200): cathedrals, churches, monasteries, manor houses, castles, town houses.

Gothic: Early English; decorated and perpendicular styles; cathedrals, churches, monasteries, manor houses, castles.

From Gothic to Renaissance: period of transition.

17th and 18th Centuries: Inigo Jones, Sir Christopher Wren, The Palladians, country houses, town houses.

The 19th Century: Regency, industrial and residential towns; Gothic revival; early and late Victorian; technical developments.

The 20th Century: Edwardian revivals; garden cities. Between the Wars. After the Second World War.

P. Trade Unions

Origins: Pitt the younger and the Combination Acts; Francis Place and the repeal of the Combination Acts; Robert Owen and the G.N.C.T.U.; the Tolpuddle Martyrs; the growth of unions for artisans and skilled workers; the beginnings of the Trades Union Congress; Disraeli's legislation; the Dockers' Tanner and the growth of unions for unskilled workers; the formation of the Labour Party; the decisions in the Taff Vale and Osborne cases and their repeal; events leading up to the General

Strike and its effect on trade unionism up to the Second World War; modern Trade Unionism including organisation of the Trades Union Congress and individual unions.

Q. Sea Transport

Ancient shipping: the origins of sea transport; the Egyptians as sea traders; the Phœnicians as carriers of the ancient world; galleys and round-ships; the Greek biremes, triremes, quinqueremes; Roman ships—their trade routes and cargoes.

The Vikings: their ships and ocean voyages.

Mediaeval sea transport: Mediterranean city states, Genoa, Venice—their ships, merchant galleasses, carracks; loadlines and classification; Venetian convoys; regulations. Northern European house ships, trade routes, cargoes; infancy of English shipping; piracy, privateering, private war vessels; the size of ships; developments in ship design and navigation.

The Age of Discovery: oceanic exploration—Henry the Navigator, improvements in navigation, the stimulus to shipping given by new geographical discoveries; the carracks and their cargoes; the Portuguese explorers; the Spanish treasure fleets and their composition; the rise of the northern maritime powers—ships in Tudor times; shipbuilding bounties; the creation of a permanent Royal Navy; the development of shipping; the rise of chartered companies, their ships.

The 17th and 18th Centuries: Dutch supremacy—specialisation in shipbuilding, length of voyages; growth of shipping industry in England—the East India Company and its ships, improvements in navigation, British shipping at the end of the 18th Century; the West Indiamen and the slave trade; passenger traffic, postal packets, coastal traffic; the golden age of sail, the Indian and China tea clippers.

The transition to steam: early experiments in steam navigation, the first steamboats, "Charlotte Dundas", Fulton's "Clermont", "The Savannah", "Curacao"; introduction of iron for shipbuilding and its effect on shipping; introduction of compound engine; the Suez Canal and its effect on sailing ships; steamer services in the second half of the 19th century; Brunel and the "Great Eastern"; competition between sail and steam; the decline of the sailing ship.

The growth, development and organization of modern sea transport: the liner, passenger and intermediate cargo liners; the importance of tramp shipping; liner companies; famous liners; amalgamations and the organization of the English shipping industry; the Plimsoll line; Lloyds; spheres of influence.

Shipping today: increasing tonnage of ships; shipping regulations; flags of convenience; latest developments in design and technology; express luxury liners; shipping in the unification of the world.

R. Agriculture

Pre-Roman farming—the hunters, neolithic farming, invention of the plough, exportation of wheat.
Roman times—the villa, wheat and grape growing, improved methods.
Anglo-Saxon "tun".
The mediaeval manor—feudalism, open field system, subsistence farming.
Break-up of manorial system—commutation of labour, leasing of demesne, sheep farming.
Tudor enclosures—social changes as result of dissolution of the monasteries.
Stuart times—new methods, growing demand for corn, fen drainage.

Agrarian Revolution—the enclosure of commons, improved crops and stock breeding, the new society in the country.
Agriculture in the 19th Century—war prosperity, depression, Corn Laws and their repeal, "high farming", depression 1875–1900.
Agriculture in the 20th century—improving conditions, the war 1914–1918, renewed depression, the war 1939–1945, post-war farming, improved methods and new machinery, changes in village life.

S. Parliament

How we are governed; the distinction between central government and local government; the Witan, the Great Council, Magna Carta, Simon de Montfort, structure of the Model Parliament of Edward I; parliament in Tudor times, struggle between King and Parliament; Whigs and Tories, The Bill of Rights, appointment of Ministers, voting at the hustings in the 18th Century, discontent after the Napoleonic Wars, the Great Reform Bill, 1832; the Chartists, the second Reform Bill, vote by ballot, the third Reform Bill; the suffragettes; the growth of the Labour Party; Lords versus Commons; Parliament Act, 1911; payment of M.P.s; life peers; how Parliament works; a general election; the Budget; ancient customs of the Commons.

MATHEMATICS

Mathematical tables may be used in the examinations unless otherwise stated.

Unless the terms of a question impose specific limitations, a slide rule may be used where, in the judgment of the candidates, it will give an answer to the required degree of accuracy.

Ready reckoners may be used in Examination B only.

EXAMINATION A

The examination is designed to test the acquisition, application and appreciation of a sound background of mathematical knowledge reasonably to be expected of the average candidate. This testing will be carried out on a core of fundamental concepts together with a range of alternative topics as options for intensive study. It is expected that many schools will regard these topics as providing an opportunity for developing special interests.

The examination will consist of three written papers, the first two papers being of 1¼ hours' duration and the third of 1 hour.

Paper I (1¼ hours) will test the concepts and computational aspects of the basic syllabus. Questions will be of the kind requiring short, specific answers, and mathematical tables will not be required.

Paper II (1¼ hours) will also be based on the basic syllabus and will consist of ten questions. One of these questions will be of the multiple-question type requiring short answers and will be based on the optional part of this syllabus. Candidates must answer any five questions.

Paper III (1 hour) will be based on the Topics syllabus. Five questions will be set on each topic. Candidates must answer four questions chosen from one or more topics.

Marks will be allotted as follows:—

Paper I: 40%. Paper II: 35%. Paper III: 25%.

Basic Syllabus

The numerals; the symbol for zero and its use as a place holder; numbers written in the scale of ten; other scales of notation exemplified by the British monetary system and systems of weights and measures; the metric system as an example of a practical system of weights and measures employing the scale of ten; numbers written in other scales and particularly the use of the binary scale in mechanical computation; simple number pattern, e.g. nine times table, magic squares, Pascal's triangle.
Extensions of the number system; fractions (both common and decimal), directed numbers, and easy irrational numbers (π, square roots of 2 and 3).
Ability to estimate and give answers to a specified degree of accuracy.
Easy computation involving the four rules, e.g. wages and salaries, rates and taxes, insurance, hire purchase, savings, simple interest, compound interest (maximum period two years), profit and loss, household accounts.
Knowledge of simple integral index notation; standard form. (Questions may be set using negative index to express small numbers.)
Use of logarithms including negative characteristics.
Use of fractions for purposes of comparison: ratio, proportion, percentage.
Averages.
Graphical representation of statistical data and experimental data. Distance/time graphs.
The recognition of shapes in two and three dimensions: shapes that arise from moving points (loci).
The analysis of shapes; sides and angles; faces, edges and vertices of solids; curved lines and surfaces; concepts of symmetry, angles, area and volume.
Angles—at a point, parallel lines and transversals, angles of elevation and depression.
Angles in plane figures—triangles and quadrilaterals of all types; regular polygons.
Direction and change of direction; bearings—e.g. N. 20° W. and 340°; the fixing of position; simple problems solved by drawing to scale.
The properties of similar figures in two and three dimensions. Congruence.
Construction of triangles, quadrilaterals and circles from given data, including circles connected with triangles. Division of a line into a given number of parts.
Solution of right-angled triangle using Pythagoras, sine, cosine, tangent.
Constructions involving use of ruler and compasses only—bisection of lines, angles, perpendiculars to and from a line, angles of 30°, 60° and 45°.
Mensuration; areas of plane figures; surface areas and volumes of prisms, pyramids and spheres.
Chord and angle properties of circle. (Numerical questions only.)
Recognition and statement of relationships, in general or symbolic terms; construction, use and simple manipulation of formulae. Use of brackets, easy factors and multiples, fractions with single term denominators. Solution of simple equations and of linear simultaneous equations in two unknowns. Solution of easy quadratic equations by factorization or graphical method. Graphical representation of linear and quadratic functions.

Optional part of common core syllabus: Simple theory of sets; use of the Venn diagram; union and intersection.
Motion geometry; transformation by translation, rotation and reflection; minimum distance problems solved graphically.

TOPICS

Note:—It is assumed that all candidates will have a sound knowledge of relevant parts of the basic syllabus in addition to the items enumerated below.

Surveying

Elaborate and expensive apparatus need not be used.

Estimation and measurement of distances; measurement by pacing, chain and tape.
Survey of areas by various methods—plane table; measured base line and compass bearings from each end—for areas with inaccessible boundaries; triangulation; drawing of irregular boundaries by means of offsets.
Keeping a field book and transferring of information to plans.
Estimation and measurement of angles; instruments for measuring angles, horizontal and vertical; finding bearings by compass, sun and stars.
Height and range finding by various methods.
Simple levelling and drawing contour lines on plans and on the ground.
Estimation and measurement of areas.

Mechanics

Density and specific gravity. Centre of gravity. Concept of force, moment of a force, principle of moments. Triangle of forces, parallelogram of forces, resolution of forces in two directions at right angles (either by drawing or by calculations). Displacement, velocity and acceleration in a straight line. Equations of motion. Work and power. Principles of simple machines, mechanical advantage, velocity ratio and efficiency.

Statistics

Candidates should be acquainted with the rudiments of statistical method along the following lines:—

Representation of numerical data by pictogram and pie charts; "jagged line" (discontinuous) graphs; bar graphs; histograms; frequency curves; cumulative frequency curves; simple graphical correlation.
Measure of position by mean (including use of assumed mean); median; mode; weighted averages (e.g. cost of living index).
Measure of dispersion—semi-interquartile range only.
Probability—basic concept, addition and multiplication of probabilities.

Commercial Arithmetic

Application of the common core syllabus to commercial problems.
Decimalization of money, depreciation, costing, cash and trade discounts.
Income tax, mortgages, time-tables, purchase tax, ready reckoners.
Bankruptcy, compound interest by tables, gross and net profit. Profit on turnover.
Foreign Currency and Exchange.

Navigation

Compass points and bearings, relative bearings, mariner's bearings, e.g. N. 20° W., true and magnetic bearings, variation. Correction of magnetic bearing.
Scales, representative fractions.
The Earth as a sphere, latitude and longitude, journeys along circles of latitude and longitude.
Principles of great circle routes.
Use of Sun and Pole Star for fixes, use of landmarks and known measurements.

Simple application of radio and radar to navigation.
Effects of currents, tides and wind. Triangle of velocities.
A knowledge of practical units will be expected, e.g. fathom, knot, cable.

Graphs

An extension of the graph work in the basic syllabus. An ability to produce neat freehand sketches of curves is as important as the ability to plot accurately.
Plotting with cartesian and polar co-ordinates.
Choice of units and scale. Appreciation of poor scales and the criticism of misleading graphs. Simple application of logarithmic scale (to base 10).
Direct and inverse variation.
Any linear, quadratic and cubic curves with a knowledge of maxima, minima and points of inflexion.
Interpretation of intercept on axes, slope and area under graphs where these are easily applicable to practical situations.
Graphical treatment of inequalities and use in simple linear programming.

Further Mathematics

Further questions on the basic syllabus, including quadratic equations, using formula, sine and cosine rules; area using $\frac{1}{2}$ ab Sin C; $\sqrt{s(s-a)(s-b)(s-c)}$; simple three dimensional problems; ratio of intersecting chords of a circle; angle between tangent and chord of a circle.

Modern Mathematics

Number scales with emphasis on binary scale for numbers greater than 1 and for numbers between 0 and 1 (bicimals).
Number patterns—Farey series; Pascal's triangle; Fibonacci series; Golden Section $\left(a=\frac{1}{1+a}\right)$
The laws of Algebra—commutative laws for addition and multiplication: associative law: distributive law.
Simple theory of sets; use of the Venn diagram; union and intersection.
Easy inequalities—their graphical expression by shading or colouring areas on the Cartesian plane.
Graphical solution of simultaneous equations.
Areas under graphs—trapezoidal rule.
Finite number systems—their graphical representation on a circle. Congruence of numbers to modulus n—applications to 12 hour clock (mod. 12), 24 hour clock (mod. 24) and degrees of angle (mod. 360).
Motion Geometry—transformations by translation, rotation and reflection; minimum distance problems solved graphically.

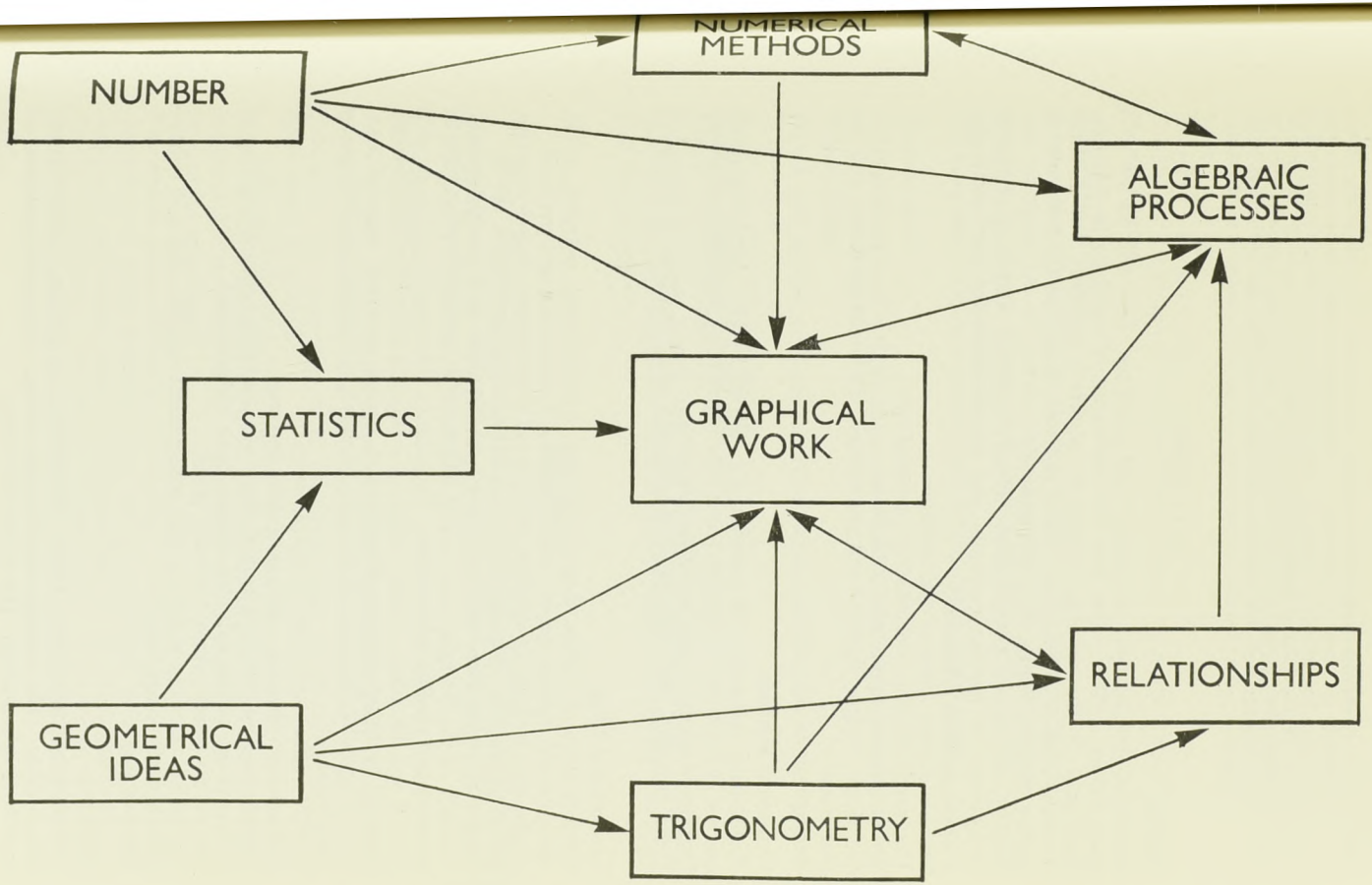
EXAMINATION B

The aim of the examination is to assess candidates' ability to apply appropriate mathematical techniques to everyday situations including agricultural, commercial, economic, geographical, industrial, scientific and social affairs.

The examination will consist of two written papers, each of 2 hours' duration.

Paper I will test the fundamental ideas of the syllabus. It will consist of about twelve multi-facet type questions, all of which should be attempted.

Paper II will consist of not less than twelve questions which do not involve heavy computation. Candidates must answer four.



FLOW DIAGRAM–MATHEMATICS EXAMINATION B.

Marks will be allotted as follows:—

Paper I: 60%. Paper II: 40%.

N.B.—The mathematics panel concerned does not consider that the taking of the externally set Paper II is necessarily the best way to achieve the aims of its syllabus. For schools that prefer to set an internal examination in place of Paper II, the Panel suggests that acceptable alternatives might be an oral examination carried out in the school by a visiting examiner who will take into consideration the work actually done during the current school year; a question paper; selected course work; or a project completed in one day.

SYLLABUS

Number

Historical development of number and counting. Zero and its use as a place holder. Place value and the movement of numbers in columns. Extension of the number system to negative numbers and decimal fractions. Scales of notation. Use of different bases and the four rules in money, weight, length, time and capacity.
Denary and binary Conversions. Binary addition and multiplication.
Recognition of number patterns and simple sequences (e.g. rectangle, triangle, square, Fibonacci).
Prime numbers—factors and multiples.
The metric system—measures in practical use.
Squares, cubes, square and cube roots.
Fractions—vulgar, decimal and percentage. (Interchangeability and the four rules.)
Averages.

Numerical Methods

Preliminary estimation of answers, e.g. $6{\cdot}8 \times 2{\cdot}1 \simeq 14$. Approximations and use of tools for calculation (slide rule, calculating machines or tables).
Degrees of accuracy and significant figures.
Index notation. Representation of large and small numbers by powers of ten.

Geometrical Ideas

Identification of simple shapes—triangle, quadrilateral, polygon, circle, cube, cuboid, sphere, prism, cone, cylinder, tetrahedron and pyramid.
Angles as a measure of rotation, fractions of a revolution, degree measure, use of protractor. Bearings to fix a direction—e.g. 036° for N. 36° E.
Angles in connection with triangles, parallel lines and parallelograms.
Rigidity of the triangle—use in two and three dimensions. Properties of isosceles and equilateral triangles. Familiarity with regular polygons with 5, 6, 8 and 12 sides. Circle—value of π (historical and by exploration).
Area by counting patterns (tesellations), square counting, units of area.
Use of formulae for areas of triangles, squares, rectangles, parallelograms and circles.
Solids—surface area, nets in simple cases.
Pythagoras's theorem—demonstration and use.
Volume—use of cube as a unit of measure. Use of formulae for volume of cube, cuboid, prism, cylinder, sphere, cone and pyramid.
Symmetry about planes, lines and points.
Similarity—ideas of reduction and enlargement, length, area and volume (photographs, maps, etc.).
Ideas of loci.

Statistics

Collection and tabulation of data. Pictograms, bar graphs, histograms and pie graphs. The normal distribution curve. The interpretation of statistical information. The arithmetic mean.

Graphical Work

Rectangular co-ordinates for the location of a point. Conversion graphs—ready reckoner, temperature, marks, distance/time, etc. Inequalities expressed as regions on a graph.
Comparison of simple fractions, decimal and percentage fractions.
Graphs of $y=2^x$ and $y=10^x$ as background to slide rule and logarithms.
Graphical representation of squares, cubes, square and cube roots and reciprocals.
Vector addition.
Graph of $y=mx+c$ (linear relation).
Solution of simple linear simultaneous equations by graph. Scale drawing of plane figures.

Algebraic Processes

Arithmetic with letters as practice in the use of algebraic notation. Use and manipulation of letters, symbols and formulae as they arise.
Solution of simple linear and non-linear equations, e.g. $y^2-5=20$; $x^3=8$ (no formal treatment).
Factorisation—common factors and differences of two squares.

Trigonometry

Sides and angles of a right-angled triangle. Use of trigonometrical tables.

Relationships

Direct and inverse proportion. Inequalities and the use of the symbols $>$ and $<$.
$y=2^x$, $y=10^x$ (common logs and slide rule).
Squares, cubes, square and cube roots.
Linear relation $y=mx+c$.
Relations between length, area and volume of simple shapes. Relations between sides and angles of a right-angled triangle. Pythagoras's theorem (not formal proof).

MUSIC

Both Music examinations are Special Notice examinations and papers will be set only in accordance with paragraph 5 of the Board's Regulations. (See page xv.)

EXAMINATION A

The aim of the examination is to test the aural ability, the musical literacy, and the practical performance of the candidates, and, in preparing for the examination, to introduce them to as much enjoyable, good music as possible.

The examination will consist of a written paper of 1½ hours, a listening test of about 30 minutes, and a practical test of about 10 minutes. Additionally and optionally, a candidate may submit an assignment or project for assessment.

The *written paper* will be in two sections. Section A will consist of three questions on music language from which candidates must answer two. Section B will consist of about ten questions on one work prescribed for detailed study and about four questions on each of six works for general study. All questions will be of the short answer type and candidates will be required to answer about half the questions on each of the seven works.

The *listening test* will require candidates to answer six questions while listening to music which will be played to them. They will be required to write down an easy rhythm, and an easy four-bar melody from dictation; recognise deviations from a given printed melody; recognise themes from the prepared works, one of which will be hidden by another tune above it; and answer questions on an unprepared work.

The *practical test* will be in two parts. In the first, candidates will be required to sing or play two short, contrasted pieces, which they have prepared. In the second, candidates will be required to sing on a monotone a rhythm 4 bars in length, and to sing, hum or whistle a melody, also 4 bars in length.

An *assignment* or *project* may be submitted, additionally and optionally, as evidence of candidates' individual interest in some form of music. It is not intended to limit the form which assignments or projects may take, but a list of suggestions is contained in the syllabus.

Marks will be allotted as follows:—

Written Paper: 40%. Listening Test: 30%. Practical Test: 30%.

If an assignment or project is submitted, it will be marked out of a maximum of 20. The marks awarded may be used to up-grade candidates, but will *not* be used to down-grade them.

SYLLABUS AND DETAILS OF THE EXAMINATION

Written Paper

Section A—Music Language

Candidates will be required to answer questions on two of the following:—

(i) The rhythmic and melodic structure of a melody written on the examination paper, which will be played twice to the candidates at the beginning of the examination.

(ii) The completion of a simple eight-bar melody, the first four bars of which will be given. It will be in a major key containing not more than three sharps or flats.

(iii) The transposition of a melody, written for a transposing instrument in one of the prepared works, into the key in which it sounds. The new key signature will be given.

Section B—Prepared Works

The detailed study of one orchestral work including study of the score. There will be a wide choice of short and simple questions relating to the composer, the scoring, the form, the period, and the background of the work. For 1966 the work will be:—

Academic Festival Overture—Brahms

The general study of six prepared works, the scores of which need not be studied. There will be a choice of short questions relating to the composer, the scoring, the form, the period and the background of the work. Quotations will not be required. For 1966 the works will be:—

Folk Music	Polly Oliver
Song	Bach: Sheep may safely graze
Piano or chamber music	Schubert: The Trout Quintet, 4th (variation) movement
Concerto	Beethoven: Violin concerto, 3rd movement
Orchestral	Britten: Variations on a Theme of Purcell
Choral or Operatic ...	Handel: Zadok the Priest

For 1967, the detailed study work and the three general study works by Beethoven, Britten and Handel will be changed. Details will be given later.

LISTENING TEST

1.—*Rhythm.* The candidate will write down the rhythm, on a monotone, of a four-bar melody starting on the first beat of the bar. It will be in 3/4, 4/4 or 6/8 time, and no note will be shorter than a quaver. There will be no ties, syncopation or rests. The pulse will be indicated. The test will be played once straight through, twice in halves, and twice straight through.

2.—*Melody.* The candidate will write down a four-bar melody, the rhythm of which will be given. It will be in 3/4 or 4/4 time, and no note will be shorter than a crotchet. It will be in a major key, with a key signature containing not more than three sharps or flats. It will be diatonic, and the only leaps larger than a third will be between the tonic and the dominant notes. It will start on the tonic, the key will be named and the tonic chord sounded. The test will be played once straight through, twice in halves, and twice straight through.

3.—*Visual Recognition.* A copy of a simple melody, eight to twelve bars long, will be placed before the candidate. He will listen while it is played once exactly as written. Then it will be played three times, each time with the same three bars deliberately altered. One bar will be altered in rhythm, another in pitch, and the third will contain a different number of notes in the bar. The candidate is to write the words "rhythm", "pitch" and "number of notes" over the bars where the changes occur. He is not to alter the actual notes.

4.—*Aural Recognition of Prepared Works.* Five extracts from the prepared works will be played once. The candidate is to name the composer and the title of the work. Adequate time will be allowed between the extracts.

5.—*Hidden Tune.* A passage in two melodic parts will be played, the lower of which will be taken from the list of prepared works. The candidate is to recognise and name the hidden tune. The passage will be played twice.

6.—*Questions on an Unprepared Work.* The candidate is to read a number of questions concerning a short piece or section of a piece of orchestral or chamber music. The piece will then be played to the candidate. The questions may refer to the time; the mode (major or minor); the instruments used; the use of repetition, development or contrast; and the recognition of well-known dance rhythms or of simple forms such as air with variations and rondo. After the piece has been played once the candidate will be given time to read the questions again. The piece will then be played twice more.

PRACTICAL TEST

1.—The candidate will be required to sing or play two short contrasted pieces which have been prepared beforehand. They can both be sung or both be played; or one can be sung and the other played. If both are played, they need not be on the same instrument.

The standard of difficulty will be taken into account but the prime consideration will be a musical performance.

2 (a).—The candidate will be required to sing at sight a rhythm, four bars long, on a monotone. It will be in 3/4, 4/4 or 6/8 time, and no note will be shorter than a quaver. There will be no ties, syncopation or rests.

2 (b).—The candidate will be required to sing at sight a melody, four bars long. It will be in 3/4, or 4/4 time, and no note will be shorter than

a crotchet. It will be in a major key, with a key signature containing not more than three sharps or flats. It will be diatonic, and the only leaps larger than a third will be between the tonic and dominant notes. The range will not exceed an octave, and it will start on the tonic. The key may be transposed to suit the candidate's voice, but the teacher must write out the transposed version and place it in front of the candidate. The examiner will play the tonic chord before the candidate starts to sing.

This is a test of mental hearing, rather than vocal ability, and any kind of vocal sound, including humming or whistling, will be accepted provided it is on the right note.

ASSIGNMENT OR PROJECT (optional)

This is optional and additional to the rest of the examination and the purpose of including it is to give credit to candidates for their individual enthusiasms. The assignment or project undertaken may be any musical activity approved by the school music teacher. The following are some suggestions: the keeping of a musical diary; reports of concerts attended, or of listening to performances on gramophone, radio or television; an account of participation in some musical production; a study of local music activities; an illustrated account of having made a musical instrument; an original composition (a simple melody will be accepted) or an arrangement.

EXAMINATION B

The examination will test individual musical knowledge and skill. Candidates will also be able to obtain credit, through the assessment of course work, for engaging in the corporate musical activities of their schools.

The examination will consist of two written papers, a practical test, and course work. Additionally and optionally, candidates may submit a project.

Paper I (about 2 hours) will be in three sections. Section A will require candidates to listen to twenty themes taken from a prescribed list of works and to identify each by writing down the name of the composer and the title of the piece of music. Section B will require candidates to answer questions on a single work prescribed for detailed study. Section C will test candidates' general musical experience. Not less than twenty questions will be set arising out of listening to a disc.

Paper II (about 30 minutes) will be a listening test. Candidates will be asked to write down as much detail as they can gather from a number of hearings of a short piece of music which is unknown to them. They will be provided with single line scores on which the bars are numbered.

The *practical test* (about 10 minutes per candidate) will be in three parts. The first will require candidates to read at sight a simple four-bar melody. The second will require them to read at sight the rhythm of a melody of similar length. The third will require them to play or sing a short piece of music, between 24 and 32 bars long, which will include about sixteen bars of solo playing. Candidates will be allowed to study the test for ten minutes before playing.

Course work will be assessed by the candidates' own teachers. As one of the aims of the examination is to give credit to candidates for participation in corporate musical activities in their school, a proportion of the marks will be awarded for such participation.

Project. This will be additional and optional, and will allow candidates a wide choice to express their individual musical enthusiasms. It will be assessed by the candidates' own teachers.

Marks will be allotted as follows:—

Paper I: 40%. Paper II: 20%. Practical Test: 25%.
Course Work: 15%.

If a project is submitted, it will be marked out of a maximum of 20. The marks awarded may be used to up-grade candidates, but will *not* be used to down-grade them.

SYLLABUS AND DETAILS OF THE EXAMINATION

Musical terms and signs

Some parts of the examination expect the candidate to be familiar with musical terms and signs in common use, and it is expected that the following terms will be included:—

Speed:	Largo; andante; allegro; presto; accelerando (accel.); rallantando (rall.).
Style:	Vivace; cantabile; legato; staccato; tenuto; pause; sforzando; lighter accent; pizzicato (pizz.); consordini.
Volume:	pp; p; mp; mf; f; ff; crescendo (cresc.); diminuendo (dim.).

Paper I

Section A

Twenty themes taken from music in the following list will be played to the candidates, who will be expected to identify each, giving the name of the composer and the title of the piece of music. Candidates will be able to gain credit for giving information additional to mere identification.

Mozart	Symphony No. 39 in E♭—minuet and trio.
Schubert	Unfinished Symphony—first movement.
*Grieg	Peer Gynt Suite No. 1.
Smetana	Vltava.
Rachmaninov	Piano Concerto No. 2 in C minor—first movement.
Britten	Four Sea Interludes.
Bartok	Music for Percussion, Strings and Celeste—third and fourth movements.
*Handel	Messiah—"For Unto Us."
*Haydn	Emperor Quartet—slow movement.

The above list is for 1966. The three pieces asterisked will be replaced in 1967 by:—

Grieg	Holberg Suite.
Bach	The first chorus of the Christmas Oratorio.
Schubert	Death and the Maiden Quartet—second movement.

Section B

The work prescribed for examination in detail in 1966 is *The Hebrides Overture—Mendelssohn.* For 1967, it will be the last movement of Beethoven's Violin Concerto.

Questions will be set to show the candidates' knowledge of:—

(i) the background, e.g. circumstances under which the work came to be written; other works by the same composer; contemporary composers; type of orchestra, etc.;

(ii) the form of the work (in this case Sonata form), but detailed bar to bar analysis will not be required. Sections of the work will be played several times and candidates required to relate them to the work as a whole, and answer other relevant questions on the passages;

(iii) the more obvious technical points, of texture, orchestration, and score reading, e.g. various clefs, arrangement of parts in the score. Candidates will have the assistance of the score of the prescribed work.

Section C

No prescribed syllabus is laid down, but a wide selection of questions will be set, sufficient to cover all likely musical interests of the candidates, including Jazz.

PAPER II

A piece of orchestral music, recorded on a disc and of about thirty bars in length, will be played several times to the candidates, with suitable intervals between each playing. A single line score will be provided. Bars will be numbered, and possibly part of the melody given. Questions will be set to assess, among other things, candidates' knowledge of phrasing, style, formal relationships including sequence and instrumentation. Questions will also be set to test ability to explain or add musical terms or signs which will indicate the general character of the music; recognise the melody when it appears in a lower part; recognise a modulation to relative major, minor, or dominant keys at the end of a section; recognise major or minor modes; identify cadences as they occur in root position in the music; transpose a bass part to treble and vice versa.

COURSE WORK

Detailed instructions will be sent to schools later, giving the basis on which marks will be allotted to course work and also informing teachers of the records which they will need to keep for scrutiny by a moderator.

PROJECT (optional)

The purpose of the optional project is to enable candidates to obtain credit for their own musical enthusiasms and interests. Complete freedom is given in the choice of project and in the form of presentation. A short list of suggestions is given here for guidance only:

An original composition or arrangement, which may include harmonization in four parts; an essay on a musical topic; a study of some commercial or administrative aspect of music; the making and playing of a simple instrument; the presentation of a musical programme; the compilation of a concert programme, with notes on the works to be performed.

NEEDLECRAFT

EXAMINATION A

The examination will consist of a written paper of 1 hour's duration, the presentation of two specified garments or articles, and the assessment of course work.

The *written paper* will be set on the basic Dress Course and will be in two sections. Section A will consist of about five multiple questions requiring short answers, all of which must be attempted. Section B will consist of four questions requiring longer answers. Candidates must answer two.

Practical work will consist of the making of:—

(i) a garment to fit the candidate, arising from the basic Dress Course; and

(ii) a garment or article arising from the study topic chosen by the candidate.

The basic course garment must be accompanied by an illustration of the outfit of which it will form a part; free sketches, tracings or cut-outs are acceptable. Each special study garment or article must be accompanied by a record of the candidate's investigations during its making.

Course work. All work done over the three terms preceding the examination shall be submitted for assessment.

Marks will be allotted as follows:—

Written Paper: 30%.
Basic course garments (including illustrations): 25%.
Special Study Article (including record of investigations): 30%.
Course work: 15%.

SYLLABUS

The written paper and the garment made to fit the wearer will be based on the basic Dress Course.

Basic Dress Course

Planning a Wardrobe: Suitability of garment for wearer, suitability of outfits for occasions, choice of accessories. Budgeting a dress allowance. Consideration of the place of both home-made and bought garments.

Good Grooming: Personal hygiene and simple make-up. Care and maintenance of clothes. Simple modern repairs.

Purchasing of Clothes: Sizing. Labelling. Assessment of quality of fabrics and workmanship. Clothing clubs and credit buying.

Patterns: Use of trade patterns for making-up garments. Minor alterations to patterns. Correct and economical lays. Cutting out.

Fibres and Fabrics: Source of manmade and natural fibres (not detailed manufacture). Properties of fabrics related to handling in needlework, hygienic value and general suitability in wear.

Equipment: Choice, use, maintenance and cost of equipment including sewing machines.
Processes and stitches used in the construction of garments by hand and/or machine.

Garments may be worn prior to the examination but must be available for marking and moderation at all times up to the publication of the results.

Special Study

The second garment or article to be made will be based on the special study followed by candidates over three terms. Teachers and candidates will be given complete freedom in the choice of topic and form of presentation. The following suggestions are intended as a guide only and are not to be taken as restrictive in any way:—

Children's wear; lingerie; leisure wear; party wear; modern styles and current fashion. Embroidery. Historical costumes; national costume; costumes for dramatic productions. Household furnishings; household renovations and repairs. Toymaking.

EXAMINATION B

The aims of the examination are to assess candidates' awareness of good design and colour, knowledge of what constitutes good grooming, care and maintenance of clothes, and manipulative skills.

The examination will consist of a written paper of 1½ hours' duration, a practical test of 3 hours' duration, and the assessment of course work.

The *written paper* will be in two sections. Section A will consist of twenty graded compulsory questions requiring short answers or simple diagrams. All questions should be attempted. Section B will consist of four questions requiring essay-type answers. Candidates must answer one.

The *practical test* will be based on a good trade-printed pattern. Candidates will be required to make either a complete simple garment or a section of a garment covering several processes.

Course work will be assessed on:—

(i) the making of a garment. Candidates will be given a free choice but the work submitted should include a variety of processes and some hand sewing;

(ii) either a folder or a piece of personal work (which may include a second garment) based on an aspect of Needlecraft of special interest to the candidate. Candidates may choose their special interest either inside or outside the syllabus. Credit will be given for content and presentation.

Marks will be allotted as follows:—

Written Paper: 25%. Practical Test: 45%. Course Work: 30%.

SYLLABUS

The basic principles of Needlecraft covered in the course should include:—

Choice, use and maintenance of tools and equipment, including machines.
The purchasing of materials of various kinds; their suitability and approximate prices; a simple study of their origin and characteristics.
The use of bought patterns—measurements, including adaptations.
The construction of good garments with a high standard of finish.
Planning and budgeting for personal clothing—appreciation of style, design and texture, accessories, care and maintenance of clothes.

RELIGIOUS KNOWLEDGE

The aim of both examinations is to test candidates' knowledge of the Bible and of the history of the Church since Biblical times, and to relate that knowledge to everyday life.

EXAMINATION A

The examination will consist of two written papers each of 1½ hours' duration.

Paper I will be based on the life and teaching of Jesus Christ and will consist of five questions, all of which should be attempted. Two of these questions will require ten short answers each without choice; one will require five paragraph answers from a choice of ten; one will require the re-telling of a Biblical story or event from a choice of two; and one will require an essay-type answer from a choice of not less than three.

Paper II will be set as three alternative papers:

Paper IIA. The unfolding purpose of God

The form of this paper will be identical to Paper I above. Candidates must answer all five questions.

Paper IIB. The history of the Christian Church

Candidates will be examined in two periods of the history of the Christian Church from the four shown in the syllabus. These periods will be shown as Sections A to D in the question paper. In Sections A and B, candidates will have to answer one short answer question and one essay question; in Sections C and D, they will have the choice of answering either one short answer question and one essay question, or two essay questions. Candidates will thus answer four questions in all.

Paper IIC. Topics on problems of Christian living

The syllabus contains eight topics, and the question paper will require knowledge of three. Questions will be divided into two sections. Section A will consist of two questions on each topic (i.e. sixteen questions in all), requiring paragraph answers. Candidates must answer three questions, each from a different topic. Section B will also consist of sixteen questions, based on two questions per topic, requiring essay-type answers. Candidates must answer any two questions. They must, therefore, answer five questions in all.

Direct quotations from the Bible will not be used in any of the above papers because of the many versions used in the schools.

Marks will be allotted as follows:—

Paper I: 60%. Paper II: 40%.

A list of suggested text-books may be obtained on application to the Secretary to the Board. The list is by no means exhaustive; recommendations for the inclusion of additional books will be welcomed.

SYLLABUS

Questions on passages or material which are not included in the syllabus (which, it is emphasized, is an *examination* syllabus and not a *teaching* syllabus), will not be set unless—(i) they are based on topics closely related to those given; (ii) they are clearly implicit in the syllabus, and (iii) they may reasonably be expected to be taught to the pupils for whom the examination is intended.

Paper I—The Life and Teaching of Jesus Christ.

The whole of *St. Mark's Gospel* except chapter 16: 9–20. (Chapter 13 will not be included as material for questions where no choice is given.)

Matthew, chapters 5, 6 and 7 (the Sermon on the Mount).

Luke, chapter 4, verses 1–21 (the Temptations and the return to Nazareth); chapter 10, verses 25–37 (the Parable of the Good Samaritan); chapter 15 (the three Parables of the Lost).

John, chapter 20 (The Resurrection).

Paper IIA—The Unfolding Purpose of God

The object will be to show how the Jewish nation was prepared for the coming of the Messiah.

Abraham, founder of the nation: call—promises—faith—Isaac;
(Genesis 11: 31–32; 12: 1–9; 13: 14–18; 22: 1–19).

Moses, deliverer and lawgiver: call—Passover—Exodus—the Ten Commandments (in the shortened form)—the Covenant;
(Exodus 3; 4: 1–20; 12; 14; 20: 1–21; 24: 1–8).

Samuel, leader and kingmaker: call—anointing of Saul;
(Judges 21: 25; I Samuel 3; 9; 10: 1–9).

David: anointing—main achievements, including conquests;
(I Samuel 16: 1–13; II Samuel 2: 4–7; 5; 6: 1–15).

Solomon: building of the Temple—division of the Kingdom;
(I Kings 5; 8: 1–22; 12).

Elijah: contest on Mount Carmel—the still small voice—call of Elisha—Naboth's vineyard;
(I Kings 16: 29–34; 18; 19; 21: 1–19).

Elisha and Naaman the Syrian;
(II Kings 5: 1–19).

Amos: The call to righteousness—visions of Judgment;
(Amos 1: 1; 5: 10–27; 6: 1–8; 7; 8: 1–6; 9: 1 and 13–15).

Hosea: The love of God—personal experience;
(Hosea 1; 3; 14).

Isaiah: The holiness of God—call—song of the vineyard—promise of the Messiah;
(Isaiah 6: 1–8; 5: 1–7; 9: 2, 6 and 7; 11: 1–9).

Jeremiah: The Potter—the broken jar—the New Covenant—prison and rescue;
(Jeremiah 18: 1–6; 19; 20: 1–2; 31: 31–34; 38: 1–13).

Ezekiel: vision of dry bones—vision of the Temple;
(Ezekiel 37: 1–14; 47: 1–12).

Isaiah II: The universal God—the servant of the Lord;
(Isaiah 40: 18–31; 42: 1–4; 52: 13–15; 53: 1–12).

Haggai: The rebuilding of the Temple;
(Haggai I).

Nehemiah: The rebuilding of the wall of Jerusalem;
(Nehemiah 1; 2; 4; 6: 15).

Ezra: reforms;
(Ezra 7: 1–10; Nehemiah 8; Ezra 9; Ezra 10: 1–17).

The Maccabees: Religion threatened by Antiochus—religion defended by the Maccabees and the "Holy Ones"—religion saved—victory in 165 B.C.
(Summary only of I Maccabees 1: 8–64; 2; 3; 4; a knowledge of the text of the Apocrypha will *not* be required.)

PAPER IIB.—THE HISTORY OF THE CHRISTIAN CHURCH (including biographies of great Christian leaders and pioneers).

Candidates will be required to answer questions on any two of the following periods.

Period I: The work of the Spirit

The Spirit comes to the Church: the promise given (Acts 1: 3–8); the promise fulfilled (Acts 2: 1–13 and 32–41).

The Spirit gives power to heal: the lame man (Acts 3: 1–10).

The Spirit gives courage: Peter's speech (Acts 4: 1–22).

The Spirit creates fellowship and concern for the needy (Acts 2: 42–47; 4: 32–37).

The choice of the seven Deacons (Acts 6: 1–6).

The conversion of Paul (Acts 7: 54–60; 8: 1; 9: 1–19).

The Gospel also for the Gentiles: the conversion of Cornelius (Acts 10); Council of Jerusalem (Acts 15: 1–14 and 19–21).

The Spirit guides (Acts 16: 6–10).
Suffering for the Gospel: in prison (Acts 16: 16–40); Jewish plot to kill Paul (Acts 21: 27–36).
Paul's final journey to Rome (Acts 25: 1–12; 27; 28: 1–16).

Period 2: The Church in the Roman Empire to the establishment of the Church in Britain.

The Church in persecution: Nero and Diocletian; the catacombs; Ignatius; Polycarp; Alban.
The Church at peace: Constantine; Athanasius; The Nicene Creed; Jerome; The coming of Christianity to Britain; Gregory, Augustine; Aidan; Paulinus; Wilfrid; Bede.

Period 3: The Church in the Middle Ages and the Reformation.

Religious ways of life—motives and life of monks, nuns and friars; the work of St. Benedict and St. Francis; the social work of the Church—healing, charity, education; Wycliff; the Reformation—Luther and Calvin; Tyndale—Authorised Version of the Bible.

Period 4: Christianity in the Modern World.

The Christian Church in England: the practice and origin of *two* of the following—the Baptist Church; the Brethren; the Church of England; the Congregational Church; the Methodist Church; the Presbyterian Church; the Roman Catholic Church; the Salvation Army; the Society of Friends.
The growth of social movements: William Wilberforce; Lord Shaftesbury; Elizabeth Fry; Robert Raikes; William Booth.
The growth and work of Missionary movements from 1790, *including the development of Christian literature:* the study of any two of the following—Baptist Missionary Society; Church Missionary Society; Inter-Church Aid; London Missionary Society; Methodist Missionary Society; Presbyterian Church of England; overseas missions; Society for Propagation of the Gospel; Society for Promotion of Christian Knowledge; British and Foreign Bible Society.
Church Unity: Edinburgh Missionary Conference 1910; Conference of British Missionaries; World Council of Churches—Amsterdam 1948, Evanston 1954, New Delhi 1961; Church of South India.

PAPER IIC.—TOPICS ON PROBLEMS OF CHRISTIAN LIVING.

Section A requires answers from three questions, each on a different topic. Candidates will not otherwise be restricted in their choice of question. There is a general pattern for each topic:—the problem stated; Old Testament examples; New Testament examples; historical examples; modern examples, social and personal.

The passages underlined below may shortly be removed from the syllabus. If they are, schools will be notified accordingly.

1. Group Relationships

Examples of the problem: colour bar in South Africa and U.S.A.; Jews and Arabs; class distinction in Britain. Causes of the problem: fear, ignorance, herd instinct, etc.
O.T. examples: Ezra forbids marriage with Gentiles; story of Ruth as a protest against this; protest of Amos against social injustice. (Amos 4: 1–3; 5: 10–15; 6: 1–8; 8: 4–6).
N.T. examples: parable of Good Samaritan (Luke 10: 25–37); Samaritan woman (John 4: 3–9 and 27–40); Greek woman's daughter (Mark 7: 24–30); Philip and the Ethiopian (Acts 8: 26–40); Paul and Jew-Gentile riot at Jerusalem (Acts 21: 27–40; 22: 1–29); Paul's teaching (Galatians 3: 27–28).

Historical example: Wilberforce and slavery.
Modern examples: a study of any particular examples of this problem to-day.

2. Crime and Punishment

Examples from home, school, social life in general. Causes of crime: poverty, greed, boredom, insecurity, laziness, revenge. Aims of punishment—revenge, deterrence, reform.
O.T. examples: Exodus 21: 12–27; Joshua 7: 20–25; II Kings 14: 5–6.
N.T. examples: reconciliation (Matthew 5: 38–48); the woman taken in adultery (John 8: 1–11); St. Paul's attitude (Philemon).
Historical example: The work of Elizabeth Fry.
Modern examples: modern approaches to the problem, e.g. probation service, approved schools, etc.; Howard League, after-care of prisoners.

3. War and the use of force

The problem of nuclear disarmament.
O.T. examples: The concept of a "Holy" War (I Samuel 15); the vision of ultimate peace (Micah 4: 1–4).
N.T. examples: The New Law (Matthew 5: 21–26); "Love your enemies" (Matthew 5: 43–48); The Temptation of Jesus (Matthew 4: 8–10); Love and obedience (Romans 12: 14–21; 13: 1–10).
Historical examples: The Crusades—Christian version of a "just" war; The Quakers—Christian protest against all war.
Modern examples: the debate on conventional and nuclear war today.

4. Money and wealth

The importance of money: no value in itself (e.g. the miser), but only as a measure of human needs—food, clothing, housing, etc.
O.T. examples: misuse of money: Solomon's luxury (I Kings 10: 14–29; 11: 1–8); selfish exploitation and greed (Amos 8: 4–6). Responsible use of money: the principle of giving something to God as a token that all wealth comes from God; Jacob vows a tenth (Genesis 28: 20–22); David sacrifices at his own cost (II Samuel 24: 20–25); all must pay a tithe (Leviticus 27: 30–33); attitude to wealth (Deuteronomy 8: 17–18).
N.T. examples: misuse of money and anxiety: anxiety (Matthew 6: 19–34;) rich fool—greed (Luke 12: 13–21); rich young ruler (Mark 10: 17–31); money and class distinction (James 2: 1–7). Responsible use of money: the widow's mite (Mark 12: 41–44); the talents (Matthew 25: 14–30); the dishonest steward (Luke 16: 1–13); almsgiving (I Corinthians 16: 1–4; Matthew 6: 1–4); an attempt to share all things (Acts 2: 42–47).
Historical examples: tithes in the Middle Ages; vow of poverty in monastic institutions; Wesley—Sermons, No. 44, on money (detail not required).
Modern examples: Personal budgeting; Christian Stewardship schemes; commercial advertising; hire purchase; gambling.

5. Sex, marriage and family

Sex is both private and social; it affects personal life and the life of the community. Possible solutions which have arisen in different societies—arranged marriages, concubinage; polygamy and polyandry; prostitution; monogamy; celibacy; state nurseries.
O.T. examples: marriage and divorce (Deuteronomy 24: 1–4; 25: 5–10; 24: 5); the family (Deuteronomy 6: 4–9; 21: 18–21); personal conduct and adultery (Deuteronomy 22: 13–30; 5; 18; Proverbs 6: 23–29); polygamy (Deuteronomy 21: 15–18); prostitution (Proverbs

7: 6–23); subordination of women, in divorce, adultery and polygamy.
N.T. examples: Jesus on marriage and divorce (Mark 10: 2–12); on adultery (John 8: 2–12); on divorce and persistent misconduct (Matthew 5: 27–32). Paul on marriage, divorce and celibacy (I Corinthians 7: 1–16 and 39–40); on family relationships (Ephesians 5: 21–33; 6: 1–4).
Reasons for marriage: to express love in companionship; to beget and bring up children securely, and so hold society together; to express the sexual relationship in a responsible way.
Historical and modern examples: celibacy in the Church; problems of unmarried mothers; adoption of children; scandals in public and private life.

6. Work, leisure and vocation

Why we work: choice of work and reasons for choice; problems of wage structures; responsibility for work; promotion and ambition; loyalties at work; leisure time and service to the community; can our work be a vocation?
O.T. examples: laziness (Proverbs 6: 6–11; 26: 14–16); craftsmen (Ecclesiasticus 38: 24–34); forced labour (I Kings 5: 13–18); the prophet (Jeremiah 1: 4–9); work for the community (Nehemiah 4: 1–23); leisure and idleness (Amos 6: 4–7).
N.T. examples: all are needed, irrespective of rewards (Matthew 20: 1–16); using the gifts we have (Luke 19: 12–27; Matthew 25: 14–30); service to others is service to God (Matthew 25: 31–46); Christ washed the disciples' feet (John 13: 1–17); Christ's work was service (Mark 10: 42–45); the community is like a body (I Corinthians 12: 12–25); everyone ought to work (II Thessalonians 3: 6–15); work willingly (Ephesians 6: 5–9).
Historical examples: origin of Trade Unions; work in the early Industrial Revolution.
Modern examples: the Luddites—automation; voluntary service, at home and abroad, e.g. Cheshire Homes; after-care of prisoners; Voluntary Service Overseas.

7. Evil and Suffering.

Four types of suffering:

(i) Natural, e.g. earthquakes, floods, some diseases, etc.
(ii) Due to personal sin, e.g. illness due to wrong living.
(iii) Due to sins of society, e.g. drunken driving.
(iv) Due to making a stand for righteousness, e.g. persecution.

(i), (ii) and (iii) are bad and remedies should be sought; (iv) includes Christ's sufferings and is blessed by God (Matthew 5: 10–12).
O.T. examples: original idea: The righteous should prosper, because God is good, and the wicked should suffer, e.g. Psalm 1; in fact, the innocent suffer.
The suffering servant: the servant is chosen to bring justice (Isaiah 42: 1–4); he meets discouragement but perseveres (Isaiah 49: 1–6); he meets open opposition and persecution (Isaiah 50: 4–9); he endures sickness and is judicially murdered; the bystanders realise it is their own sin that has caused it, and are brought to repentance (Isaiah 52: 13–15; 53: 1–12); the change of heart in the wicked is enough satisfaction to the servant, and, in them, is his resurrection; solution—only a completely righteous man could endure this and produce repentance in the wicked, thus bringing good out of evil.
Job: the problem (Job 1 and 2); his friends provide no answer, except that he must have sinned unwittingly; he stumbles on the

idea of an interview with God, and therefore, of some kind of future life (Job 19); man is very finite and ignorant (Job 38: 1–7; 40: 1 and 6–9); Job's only answer is repentance (Job 40: 1–2; 42: 1–6).

N.T. examples: Christ is the pattern—His attitude to suffering:

(i) Natural suffering—man born blind (John 9: 1–3); undeserved suffering (Luke 13: 1–5).

(ii) Suffering due to personal sin—paralysed man (Mark 2: 1–12); the sinner who anointed His feet (Luke 7: 36–50).

(iii) Suffering due to sins of society—the outcast leper (Mark 1: 40–45); Christ rejected by His own people (Luke 4: 16–30); Paul's sufferings (II Corinthians 11: 11–33).

(iv) Suffering due to standing for the right (persecution)—(Christ accepted this fully all through His life). Baptism (Mark 1: 11; quote from Isaiah 42: 1—the servant); temptation—He will share the lives of sufferers (Matthew 4: 1–11); He foresaw His own death (Mark 8: 30–33; 9: 30–32; 10: 32–34); Gethsemane (Mark 14: 32–50); summary of Christ's attitude (Philippians 2: 5–11).

Historical examples: Father Damien; Pastor Niemoller; persecution of the Jews.

Modern examples: the colour bar; natural disasters; disease—deserved and undeserved; the aged.

8. Prayer.

Why we pray.

O.T. examples:—

(i) Sense of mystery and wonder (The Numinous)—Worship. (Psalms 90 and 8).

(ii) Experience of suffering and helplessness—Evil. (Psalms 39 and 88; Jeremiah 20: 7–18).

(iii) Sense of guilt—Confession. (Psalm 51).

(iv) Love of others and desire to help them—Intercession. (I Kings 8: 22–53, especially 31–50).

(v) Desire to return thanks—Thanksgiving. (Psalm 40—recovery from illness).

N.T. examples: The various types of prayer are built into the pattern of the Lord's Prayer; examples of Christ praying (Luke 5: 16; 9: 18); sincerity in prayer (Matthew 6: 5–6); faith in prayer (Mark 11: 23–24).

(i) Our Father . . .—Worship.
All prayer is corporate (Matthew 18: 19–20; Acts 1: 14; 2: 42); Meditation (Philippians 4: 8–9);

(ii) Thy Kingdom come, Thy will be done . . .—Intercession.
(II Corinthians 11: 28–29; II Thessalonians 1: 11–12; Matthew 7: 13–14); Perseverance (Luke 18: 1–8; 11: 5–13);

(iii) Give us today . . .—Petition or Supplication. (Philippians 4: 6–7);

(iv) Forgive us . . .—Confession; humility (Luke 18: 9–14);
the unforgiving Servant (Matthew 18: 21–35);

(v) Lead us not into Temptation . . .—Evil and Suffering. (Mark 14: 32–36);

(vi) For thine is the Kingdom . . .—Thanksgiving.
(These types of prayer are also found in James 5: 13–16).

When we pray: personal and corporate prayer; prayer on special occasions.

EXAMINATION B

This examination is a Special Notice examination and papers will be set only in accordance with paragraph 5 of the Board's Regulations. (See page xv.)

The examination will consist of a written paper of 2 hours' duration, and an assignment.

The *written paper* will be based on the study of the Old and New Testaments and will be divided into three sections. Section A will consist of twenty questions (eight from the Old Testament and twelve from the New Testament), requiring short answers, all of which should be attempted. Section B will consist of not less than ten questions requiring short paragraph answers, from which candidates must answer seven. Section C will consist of not less than seven questions requiring descriptive or essay-type answers from which candidates must answer two.

Assignment. Candidates will submit an assignment for assessment. It will be based on one or more topics chosen by candidates with the advice and help of their teachers and two lists of suggested topics are given in the syllabus below. Teachers may assess their candidates on the basis of a short notebook of approximately thirty-two pages in length submitted by candidates, credit being given for sketches, diagrams and other illustrative material *or* on the basis of an internal examination. A short oral test will form part of the assessment, whether based on the submission of a notebook or on an internally set examination.

Marks will be allotted as follows:—

Written Paper: 70%. Assignment: 30%.

SYLLABUS

WRITTEN PAPER

Old Testament: The connecting narrative thread, to be examined in general outline and not in depth, will be the development of the ideas of God under the following headings with the appropriate connecting links:—

Abraham, Moses, David, Elijah, Amos, Hosea, Isaiah, Jeremiah, Second Isaiah (Deutero-Isaiah, or Isaiah of Babylon), including the Suffering Servant songs

New Testament: Questions will not be set requiring a comparative study of the Gospels. The only parts of the Bible to be examined in the New Testament will be those recording the life and teaching of Christ from all four Gospels, excluding difficult discourses, together with the general outlines of Chapters I and II of Acts of the Apostles. The Epistles will not be tested.
No context questions will be set in this paper.

ASSIGNMENT

Candidates will choose one or more topics for special study. Lists under two main headings of suggested topics are given below for guidance but it is emphasised that candidates are free to choose their topic or topics within or outside these lists.

The relationship of Christianity to modern life: Religion and science. Prayer. Capital punishment and euthanasia. Money—Christian stewardship. Work—honesty in business. Christian marriage and family life. Affluent society and starving millions—am I my brother's keeper? Sunday observance—public worship. Influence of mass media on Society. Use of leisure. The Christian and war. The colour

problem. Keeping up with the Joneses. Religion: is it a unifying force? "Love thy neighbour"—charity.
Juvenile delinquency—causes; attitudes towards authority; attitudes of authority towards it. The problem of pain and suffering: is there any purpose or merit?

Historical aspects of Christianity: The Saints of local churches. The vestments of the Church—their meaning and origin. How we got our Bible. The Church in our neighbourhood. Why we worship this way, with particular reference to a pupil's own denomination. Daily life in New Testament times. The Synagogue. A famous missionary, e.g. Livingstone, Schweitzer, Gladys Aylward. Youth organisations with a Christian background, e.g. Y.M.C.A., Boys' Brigade, Scouts, etc. The origin, history and work of a particular denomination, e.g. the Salvation Army. The Liturgy and Sacramental worship. Hopes of a World Church, e.g. the story of the Church in south India. A diary of worship and activity in and by a particular church during more than one season of the Church's year. Hymnology. Bible archæology. Work of the S.P.C.K. and the S.P.G., etc. The Catechism. A study of a leading personality in the history of the Church, e.g. Luther, Wesley. Life and work of St. Paul. Women of the New Testament.

RURAL STUDIES

EXAMINATION A

The examination will consist of two written papers of 1½ hours' and 1 hour's duration respectively, course work, and a project.

Paper I (1½ hours) will be based on the main study syllabus which will be divided into Horticultural Studies and Agricultural Studies. Section A will consist of compulsory multiple questions requiring short answers. The questions set will be such as can be answered by candidates whether they have specialised in horticulture or agriculture. Section B will be divided into Horticultural and Agricultural subsections and not less than four questions will be set in each. Candidates must answer any two questions from Section B.

Paper II (1 hour) will be based on the study of one or more topics from the ten set down in the Supplementary Study syllabus. Not less than four questions will be set on each topic, of which candidates must answer any two.

Course work will be assessed by the candidates' own teachers on work done in the 5th year (from 1966 assessment will be on the 4th and 5th years). Assessment will be based on the keeping of records; practical skills; and ability to identify common features of the countryside. Details of how these assessments shall be made will be found after the itemisation of the syllabus.

Project. A short project, or a single investigation, involving some unaided practical work shall be submitted for assessment. This will be in the form of a written record with appropriate specimens and diagrams, and candidates may be required to discuss their project or investigation with an examiner or moderator.

Marks will be allotted as follows:—

Paper I: 35%. Paper II: 15%. Course Work: 35%.
Project: 15%.

MAIN STUDY

HORTICULTURAL STUDIES

Through their cultivation in garden, frame and greenhouse candidates should have a knowledge of a wide range of plants including as many of the following types as possible:—

(*a*) Decorative plants—annuals, biennials, bulbous plants, herbaceous perennials, shrubs, trees and grasses.

(*b*) Edible plants—vegetables and herbs, soft fruits and tree fruits, other edible plants.

1.—Environment of Plants

Soil: examination of soil types in garden, countryside and laboratory. Methods of cultivation and their effect on soil fertility and plant growth through all seasons of the year. Improving conditions in the soil for good healthy plant growth. Water in the soil, movement of water in soil. Waterlogging, soil drainage. Signs of poor drainage conditions. Water content of soils, related to soil types. Soil temperature. Humus content of soils. Decay processes. Means of increasing humus content of soils, life in the soil, organic manures, composts. Rotation of crops.

Climate: studies of plant growth—habit, quality, rate of maturity and yields of growing plants in various aspects, i.e. in open ground, in shelter of hedge or windbreak, under cloche, in frame. Frost protection—devices adopted to protect plants including coverings (glass, polythene, straw). Frost pockets—related to slope—altitude and soil and choice of land for horticultural work. Greenhouses—aspect, ventilation, temperature.

2.—Plant growth and horticultural practice

Air, sunshine and temperature: studies of plants (wild and cultivated) growing in sunshine and shade. Studies of competition between plants for space to grow, i.e. between cultivated crops and weeds. Cultivated plants given insufficient space to grow, e.g. seedlings, root crops, trees, effect of pruning, thinning. Studies of effects of light, darkness and soil and air temperature on plant growth—tropisms. Effects of etiolation, e.g. earthing up potatoes, celery. Use of glass in horticulture—conditions for plants "under glass."

Water requirements: water requirements, through all stages of growth, of different types of plants and of plants in different situations. Entry of water into plants—root and root hairs. Cultural methods to protect roots at planting time. Wilting of plants—causes and effects. Natural adaptation of plants to reduce transpiration, horticultural practices of shading and wind shelter.

Plant nutrients: means of supplementing plant food by use of organic and inorganic manures and fertilizers—nitrogen, phosphorus and potash. Culture solution experiments to demonstrate the chief elements necessary for plant growth (calcium, magnesium, iron, nitrogen, phosphorus and potassium). Mention of other essential elements. Manurial requirements of different types of plants, e.g. brassicas, root crops, legumes and soft fruits. Effects of manures on crop growth, health, quality and yield. Lime—acidity and alkalinity. pH value (as a scale only). Plants (wild and cultivated) associated with acid and alkaline conditions. Seeds, stems, leaves and roots as storage organs of food—tests for carbohydrates, protein and oil.

3.—Plant reproduction

Flowering plants—flower structure; structure in relation to function. Pollination and fertilization. Bees and other insects. Seed—with

particular reference to seed of horticultural importance—seed collecting, seed structure, seed testing—seed dormancy. Seed dispersal related to studies of weed plants and in particular to the numbers and spread of weed seeds. Provision of suitable conditions for seed germination in open garden and under glass. Seed composts. Natural methods of reproduction of cultivated plants other than by seed, e.g. runners, rhizomes, bulbs, tubers and corms. Artificial methods of reproduction adopted by the horticulturalist, i.e. hard and softwood stem cuttings, root and leaf cuttings, layering, budding and grafting. Use of hormones for root stimulation. Investigation of conditions necessary to provide root formation related to plant morphology and physiology.

4.—Plant improvement

Studies to show improvement in plant growth through (*a*) cultural methods and manuring, (*b*) selection of varieties, (*c*) selection of plants, (*d*) breeding. Cell structure of plants, cell division with reference to chromosomes. Mendelism—one factor differences only.

5.—Other factors affecting plant growth

Cultural conditions and operations. Animals—studies of habits and life histories of common animals including birds, insects and other creatures which benefit or harm garden plants. Fungi, bacteria and viruses as parasites and saprophytes of plants.

6.—Control of pests and diseases

Through proper cultivation and by choice of plants and of varieties. Garden hygiene. General methods adopted to prevent and control pests and diseases of garden plants. Safety precautions in the use of insecticides and fungicides.

7.—Use of plant material

Garden planning—arrangement of crops, groups of plants and individual plants for particular purposes.

8.—Records and recording

Their importance.

AGRICULTURAL STUDIES

Candidates entering the examination in this section should have had experience of:—

(*a*) growing some farm crops; (*b*) the routine care and management of such stock as calves and/or sheep and/or goats and/or pigs; (*c*) the opportunity of regular visits to local farms for investigation and recording.

1.—Weather and the land

Particular studies of the climate of the south-west. Interpretation of weather forecasts—depressions, anticyclones, fronts. Main types of farming in the south-west related to altitude and climate. Soil erosion—shelter belts—soil conservation.

2.—The land

Examination of soil types in the field and in the laboratory. Methods of cultivation and effects on soil fertility and plant growth through all seasons of the year. Water in the soil—movement of water. Waterlogging. Soil drainage. Signs of poor drainage conditions. Methods of land drainage. Irrigation. Humus content of soils. Decay process. Methods of increasing humus content by organic manures. Life in the soil. Methods of supplementing plant food in soil by use of organic and inorganic fertilizers. Lime—acidity and alkalinity; pH values (as a scale only). Maintaining soil fertility—rotations.

3.—Cereals, roots and fodder crops

Seed and grains—structure and germination—tests for purity—preparation of land for seed—seed sowing. Recognition of seedling plants of these crops. Effects of cultivation and manuring on growing plants. Flowers—structure. Pollination and fertilization. Harvest—examination of crop (grain and roots); stages of development of grain, examination of food content, storage conditions. Use and value of crop—for various purposes.

4.—Grasses, clovers and grassland

Studies of the various grasses and clovers of agricultural importance and the effects of cultural treatment and agricultural practice on their growth, with particular reference to leys and permanent pasture. Grasses—Italian Rye, Perennial Rye, Cocksfoot, Timothy and Meadow Fescue. Clovers—Red Clover, early and late flowering—Wild White—Lucerne Seed—structure and germination. Growing plants—vegetative characteristics of individual species. Effects of cultural treatment on rates of growth. Effect of weather conditions on rates of growth. Composition of mixtures, effects of grazing and cutting. Flowers of grass and clovers—pollination and fertilization. Harvest—hay, silage and grass drying.

5.—Animals and animal husbandry

Studies of animals on the farm and, if possible, goats or calves or sheep or pigs kept at school. Studies of care and welfare of animals—housing requirements, grooming and handling, care of pregnant animals, reproduction and breeding. Studies of feeding habits, kinds of foodstuffs of different animals. Rations. Digestive system of ruminant and non-ruminant. Studies of rates of growth of animals.

6.—Plant and animal improvement

Studies to show improvement in crops and animals through—good husbandry; choice of varieties of crops and breeds for specific purposes; selection and breeding of plants and animals; cell structure. Simple treatment of Mendelism based on one factor differences only.

7.—Other factors affecting plants and animals

Cultural conditions and operations. Husbandry. Animals—studies of habits and life histories of common animals, to include birds, insects, earthworms and other creatures which benefit or harm farm crops and stock. Common fungi; bacteria and viruses as parasites and saprophytes of farm crops and stock.

8.—Control of pests and diseases

Cultivation and husbandry. Farm hygiene. General methods adopted to prevent and control pests and diseases of farm crops and stock. Safety precautions in the use of insecticides and fungicides.

9.—Records and recording

Their importance.

SUPPLEMENTARY STUDY

Paper II will be based on this part of the syllabus and will require more detailed knowledge than Paper I. Credit will be given for signs of originality and evidence of direct observation.

One topic only out of the ones listed below need be studied, but more may be studied, if desired. The project which candidates are required to do may (but need not) be based on the topic(s) studied.

1.—Bee-keeping

Value of bees to farmer and fruit grower. Community life of hive including life history and function of queen, drones and workers. Biology of the honey bee, limited to mouthparts, legs, sting, digestive and glandular systems. Maintenance and routine care of apiary. Nectar and pollen sources of the district. Chief parasites and diseases of bees and brood. Extraction of honey and rendering wax.

2.—Forestry

Kinds of trees for forestry—broadleaved trees and conifers. Recognition of common trees. Seed collection and nursery work. Routine care and management of forest plantings. Brashing, thinning, felling, extraction and conversion. Methods of protecting trees from harmful animals, insects, fungi and fire. Measurement of standing timber—use of quarter girth tapes, Hoppus tables. Work of the Forestry Commission. Coppice work and coppice crafts.

3.—Livestock (The study of either pigs or poultry or rabbits or sheep)

All candidates choosing this option must do the general study. The choice of questions will be sufficient for candidates to do one specialized study only but they may do more.

General study—breeds, housing. Foods, feeding habits, digestive and reproductive systems. General management including rearing, signs of ill health and precautions against disease. Records and recording.

Poultry studies—structure of egg, incubation and development of chick embryo, sex linkage and hybrids. Methods of egg and table bird production (including preparation for table).

Rabbit studies—meat, fur, and fancy. Pelts and their preparation.

Pig studies—Grading and marketing.

Sheep studies—Wool and meat production.

4.—Dairying—cows and/or goats

Candidates may specialize in the study of either cows or goats, or in both.

Breeds of dairy cows or goats. Feeding, digestive and reproductive systems. Rearing. Elementary structure of the udder, "let down" of milk. Dairy hygiene routine. Milk composition. Butter fat content—its estimation. Quality milk scheme; maintaining quality, tests. Causes of souring and tainting of milk. Milk as a food. Butter and cheese making, and other milk products.

5.—Ecological studies

Studies of the flora and fauna of two environments through the seasons.

6.—Decorative horticulture

Garden design. Culture and use in garden of annuals, biennials, herbaceous perennials, bulbous plants, shrubs, trees and grass. Use of cut flowers and other natural materials for indoor decoration.

7.—Hardy fruit trees and soft fruits

Culture and management in the open garden. Propagation (including fruit tree rootstocks). Forms of tree planting and fertility rules. Pruning. Varieties for different purposes. Pests and diseases and their control. Storage of fruit.

8.—Vegetable crops in open garden, frame and cloche

The culture of common and some unusual vegetables. Selection of varieties for different purposes. Herbs. Successional and inter-cropping. Pests and diseases and their control. Food value of vegetables. Storage.

9.—Greenhouse plants of decorative, economic and botanical interest

Care and maintenance of plants under glass—ventilation, heating, watering and feeding. Seed and potting composts. Sterilization. Pests and diseases and their control. Fumigation. Special cultural methods of particular crops.

10.—Implements and machines used in agriculture and horticulture

Principles of internal combustion engine. Transmission of power. A general knowledge of *two* of the following:—

mobile power-units—cultivating machinery and implements—harvesting machinery and implements—milking machines and dairy equipment—use of electricity in either horticultural or agricultural practice.

A particular study of one machine or device from each of the selected groups, involving care and maintenance. Safety precautions.

Assessment of Course Work

This will be based on work done in the fourth and fifth years. Teachers should base their assessments on:—

(i) Records. These might include—candidates' personal diaries of course work; candidates' practical books of details of investigations carried out either in the classroom or outdoors; evidence of individual or group projects. Candidates' class notebooks will *not* be asked for.

(ii) Practical skills. Assessments by the teachers of candidates' ability and skill in performing common practical tasks in the garden and/or greenhouse and/or with small livestock. These assessments may be made either as the result of a number of set tasks at one particular time, or assessments derived from observation and marking over a period of time.

(iii) Responsibility and initiative. Assessments by the teachers of candidates' ability to undertake routine work connected with the care of animals and/or plants with responsibility and initiative for as long a period as possible.

(iv) Ability to identify common rural features. Internal tests on the candidates' ability to identify common features of the countryside, farm and garden to include plants, animals, birds, pests, diseases, machinery or similar features. These should be done by means of living material wherever possible, and/or by means of specimens, pictures or slides.

Marks should be allotted in the proportion of 10:10:10:5 for the four assessments in the order given.

EXAMINATION B

This examination is a Special Notice examination and papers will be set only in accordance with paragraph 5 of the Board's Regulations. (See page xv.)

The examination will consist of two written papers of $\frac{1}{2}$-hour and 2 hours' duration respectively, and a practical examination.

Paper I (30 minutes) will be compulsory for all candidates and will consist of about thirty questions requiring short answers, all of which should be attempted.

Paper II (2 hours) will be set as three alternative papers:—

IIA Agriculture; IIB Horticulture; IIC The Rural Studies of Gardening, Livestock Keeping, and Nature.

Each question paper will consist of a compulsory question requiring thirty short answers. The remainder of each paper will be split into about five sections, and each of these sections will contain not less than three questions. In addition to the compulsory question, candidates must answer four more questions taken from at least three different sections.

Practical work. Practical work will be assessed in three parts, each part carrying equal marks. The first will be based on practical tasks carried out by candidates; the second will be based on laboratory tests done at a specific time; and the third will be the unaided recording by candidates of an experimental collective project carried out at the school. The Board will stipulate the tests to be done each year by giving a choice of not less than four in each part.

Marks will be allotted as follows:—

Paper I: 15%. Paper II: 55%. Practical Examination: 30%.

SYLLABUS

In all parts of the syllabus where the cultivation of plants (including varieties such as annuals, hardy or semi-hardy, etc.), or the study of pests, plant diseases, etc., is called for, not more than four of each type need be cultivated or studied. Questions will be set in such a way that candidates will receive credit whatever varieties they do study, i.e. teachers need not unbalance their teaching syllabus by seeking to guard against the setting of questions on particular varieties of plant, pest or disease.

Paper I

Soils

Origin and composition, weathering agents; characteristics of clayey, sandy, chalky and peaty soils; top and sub-soil; effects of autumn and winter cultivation and mulching on soils; humus and how it is added to soils; testing for lime and the effect of lime on soils; soil moisture; warm and cold soils; aspect; earthworm.

Weather

Conditions affecting the weather and the measurement of rain, wind, soil and air temperature; weather recording; interpretation of weather maps; forecasting weather; effects of rain, frost, snow and drainage on soils.

Plant Structure

Simple structure and function of roots, stems and leaves of an herbaceous plant; structure of a common flower, pollination, fertilization and seed development, structure of fruits. Natural methods of seed dispersal; natural methods of vegetative propagation; method of food storage in plants; how a plant feeds and grows.

Paper IIA—Agriculture

1.—Manures and Manuring

Nutrients—nitrogen, phosphate and potash. Natural manures—nature and uses of farmyard manure, grazing and folding, green manuring crops. Artificial fertilizers—nitrate of soda, nitro chalk, sulphate of ammonia, basic slag, super phosphate of lime, sulphate of potash. Simple compound fertilizers—forms and uses of lime. Application of fertilizers, requirements of different crops; need to keep a balance; deficiency signs in crops.

2.—Farm Crops

Grassland—grasses suitable for leys, hay and strip grazing, clovers and silage crops. Management, establishment and utilisation of grassland. Cereals—cultivation, utilization, harvesting and storing of wheat, barley, oats, and dredge corn. Rotational value and place.
Roots—cultivation, utilization, harvesting and storage of potatoes, turnips, mangolds, swedes and sugar beet. Rotational value and place.
Brassicae—cultivation, utilization of cow cabbage and kale.
Legumes—cultivation, utilization, harvesting of beans, vetches and lucerne.

3.—Farm animals

Dairy Cattle—common breeds for milk production; Ayrshire,' South Devon, British Friesian, Dairy Shorthorn, Guernsey, Jersey. Rearing of calves. Feeding and management of young stock and milking cows. Health, hygiene, housing, recording. Milking and clean milk production.
Beef Cattle—common breeds for beef production; Aberdeen Angus, Shorthorn, Hereford, Devon, Galloway. Rearing, feeding, management including fattening.
Sheep—common breeds indigenous to the South West; South Devon, Devon Longwool, Devon Closewool, Dorset Down, Dartmoor, Exmoor Horn, Scottish Blackface. Methods of management, rearing, feeding and marketing on lowland and hill farms. Dipping, shearing, marking.
Pigs—common breeds and their uses; Large White, Landrace, Large Black, Saddleback, Welsh. Methods of management and feeding, health, hygiene, and housing.
Poultry—common breeds and their uses; Rhode Island Red, Light Sussex, Leghorns. Management for egg production, feeding and selection. Deep litter, battery, free range methods. Hatching, natural and artificial methods. Management of day-old chicks to point of lay. Sex linkage.

4.—Farm Machinery

Tractor and implements. Common types of tractors, ploughs, harrows, discs, cultivators, roto-cultivators, manure spreaders, haymaking implements, silos and combined harvesters. Safety precautions.

5.—Farm Operations

Main seasonal work (spring, summer, autumn and winter) on a mixed farm or a dairy farm.

PAPER IIB—HORTICULTURE

1.—Cultivation

Digging (winter and summer)—Double digging, hoeing, raking, rolling, firming, mulching, ridging, transplanting, dibber and trowel. Pricking out of seedlings. Blanching. Mechanical aids. Simple greenhouse management including heating. Watering—feeding. John Innes composts—including soil sterilisation.

2.—Propagation

(*a*) By seed—conditions necessary for germination. Outdoor seed bed preparation. Preparation and method of sowing seed in pots, pans and boxes. Stratification.

(*b*) By vegetative methods—bulbs, corms, rhizomes, tubers, suckers, stolon and "tip" rooting. Softwood cuttings—hardwood cuttings. Divisions, layering, pipings. Grafting and budding, air layering.

3.—Vegetables including herbs
The sowing, planting, spacing, growing, thinning and harvesting of cabbage, cauliflower, brussels sprouts, savoy, broccoli and kale, spinach; beans (runner—dwarf—climbing—haricot—broad); peas; potatoes, carrots, beet, parsnips, turnips, onions, shallots, leeks, radish, lettuce, mustard, cress; outdoor tomatoes, marrow, rhubarb. Unusual vegetables (*optional*)—artichokes, asparagus, pickling cabbage, chicory, corn salad, endive, kohlrabi, melon, maize, salsify, scorzonera, sea kale.
Herbs (*optional*)—chives, sage, mint, thyme, parsley, basil, marjoram, rue, borage.

4.—Fruit
General cultivation, propagation, training and pruning of black and red currants, gooseberry, raspberry, blackberry or loganberry or hybridberry, strawberry. Training of apple trees—standard, half standard, bush, cordon and espalier. Propagation and influence of root stocks on apples.

5.—Flowers
Cultivation of the following:—annuals, hardy and half-hardy; biennials; perennials. The usual methods of raising and propagating.

6.—Lawns
Preparation of beds for sowing and turfing. Simple seed mixtures for pleasure lawns and hard wearing lawns. Sowing. Turfing. After-care of lawns. Maintenance of established lawns. Care and maintenance of hand and motorised lawn mowers.

7.—Bulbs
Growing culture of bulbs for indoor decoration.

8.—Pests and Diseases
Treated as "friends" and "enemies" in the garden. Basic life history and control measures for the following:—apple sawfly, apple woolly aphis, ant, blackfly, winter moth, cabbage white butterfly and caterpillar, carrot fly, centipede, earwig, earthworm, greenfly, leather jacket, onion fly, mole, potato eelworm, currant big bud, club-root on brassicae, blackspot on roses, apple canker, strawberry yellow edge, lettuce grey mould, antirrhinum rust, sweet william rust.
A brief knowledge of garden hygiene and simple soil sterilisation will be expected.

PAPER IIC—THE RURAL STUDIES OF GARDENING, LIVESTOCK KEEPING AND NATURE

1.—Soft Fruit
The propagation and subsequent culture and training of black and red currants, gooseberry, raspberry, strawberry.

2.—Top Fruit
The influence of root stocks. Propagation of root stocks. Grafting and budding of an apple root stock. Formative and fruit pruning of an apple tree (from a maiden to first-year fruiting stage). Pollinating varieties.

3.—Vegetables
The knowledge of four-course rotation and its manurial requirements. Intercropping. Intensive cropping. Methods of hand (and mechanical) cultivation. The growing of vegetables and herbs as found in a kitchen garden—brassicae, pulses and roots. Brief knowledge of some unusual vegetables.

4.—Flower Beds and Borders
Planning and layout, preparation, propagation and cultivation of; including plant content of three of the following: annual border; herbaceous border; rose bed; shrubbery; heath beds.

5.—Ornamental lawns and pond rock garden
Establishment and care of ornamental lawns. Construction of garden pond or pool with brief understanding of modern materials; stocking of pool or pond with fish and aquatic plants; knowledge of natural pond life and/or a natural aquarium.

6.—Agricultural grasses and fodder crops
Types of grasses, clovers and fodder crops. Utilisation—identification—habit of growth. Selection. Superiority of pedigree strains. Identification of grasses by flowering heads only.

7.—Forestry
Simple study of trees, conifers and hardwoods. Requirements and methods of propagation. Choice of site and forest soils. Pests and diseases. Ground preparation and planting. Forest management. Weeding—staking—protection. Relationship of world forestry to temperature and climatic conditions.

8.—Wild life
Knowledge of local wild life. Plant migration. Weeds. Birds of prey. Birds—useful and otherwise. Beasts of prey. Useful insects. The bat. The hedgehog. The mole. Gnawing animals. Frogs.

9.—Small livestock keeping
Poultry, rabbits, goats. Breeds. Rearing, selection and breeding—health—hygiene—housing—feeding management.

10.—Beekeeping
Breeds. Various hives. Work in the apiary. The bee. The development of a larva—larva to bee. Simple equipment. Routine work. Swarming and swarm control. Making an increase. Common diseases.

11.—Garden Building
The detailed construction of a garden building can be submitted as a project for the practical examination.

Science:

Examinations A and B will each offer examinations in General Science, Biology, Human Biology, Chemistry and Physics. Candidates may be entered for any combination of subjects (A or B) with the following exceptions:—

(i) Candidates entered for General Science A or B may not be entered for more than one of the specialist science examinations (A or B).

(ii) The provision in the A series that an optional Basic Science paper may be taken by candidates in conjunction with one of the specialist science examinations (see page 89) does not extend to examinations in the B series and is confined to candidates not offering General Science A or B.

(iii) The provision in the B series that General Science Paper I may be taken instead of Paper I of one of the specialist science examinations (see page 89) does not extend to examinations in the A series and is confined to candidates not offering General Science A or B.

EXAMINATIONS A

Candidates may take a basic science paper as an optional addition to one specialist examination, provided that they are not taking the General Science examination. Details of this basic science paper are given after Physics A.

GENERAL SCIENCE A

Science will be regarded as a single subject for the purposes of this examination, and as far as possible candidates will be expected to show evidence of this in their answers. The practical test is an essential part of the examination and candidates' ability to carry out simple experiments in the laboratory will be assessed. Where relevant, common applications and consequences of the principles involved will be required.

The examination will consist of a written paper of 2 hours' duration, a practical paper of 1½ hours' duration, and the assessment of course work. Additionally and optionally, candidates may submit a project.

The *written paper* will be in three sections. Section A will consist of about twelve multiple questions requiring short answers, all of which should be attempted. Section B will consist of six questions to test factual knowledge requiring rather longer answers, from which candidates must answer three. Section C will consist of five questions intended to test ability to think scientifically. Candidates must answer two.

The *practical paper* will consist of ten simple tests all of which must be attempted. Each test will be designed so that only one specimen or one piece of apparatus will be required for it. Candidates will move from one test to another.

Course Work. Candidates will be assessed by their own teachers on:—

(i) ability to tackle scientific problems;
(ii) manipulative skill;
(iii) ability to observe and record;
(iv) ability to draw conclusions.

Marks ranging from 0 to 5 will be given for each of the above points and at least three assessments shall be made during the final year.

Project (optional). Candidates may submit accounts of individual investigations which they have carried out. This investigation may be on a topic either from within or outside the syllabus.

Marks will be allotted as follows:—

Written Paper: 60% (the three sections will carry equal marks).
Practical Paper: 20%. Course Work: 20%.

If a project is submitted, it will be marked out of a maximum of 20. The marks awarded may be used to up-grade candidates, but will *not* be used to down-grade them.

SYLLABUS

It is emphasized that the syllabus below is an examination syllabus, and not a teaching syllabus. It is intended as an indication of the topics on which questions will be asked but they may also be asked on topics which are closely related to those given, which are clearly implicit in the syllabus and which may reasonably be expected to be taught to pupils for whom the examination is intended.

Candidates will be expected to be familiar with the metric system of units only, except in the cases of measurements in heat and work where British units will be used.

Environment of man

Water: its occurrence in nature; solubility of substances in it including air, treated qualitatively. How we attempt to obtain pure liquids; filtration, evaporation and distillation. The water cycle. Local water supply and its purification; effects of hardness of water and methods of

softening (no chemical reactions). The physical properties of water; density and flotation. Water as a compound of hydrogen and oxygen; its decomposition by an electric current. Water as a medium for life; aquatic animals.

Air: evidence of its reality; air pressure; uses of compressed air, e.g. cycle pump and valve; hovercraft, pneumatics; measurement of air pressure by mercury and aneroid barometers. The chemical change involved in burning—sulphur, carbon and magnesium; the production of carbon dioxide and water when fuels are burnt. Composition of the air. Rusting and its prevention. Oxygen—industrial production and uses. Preparation, properties and uses of carbon dioxide; respiration in plants and animals (from experiment); photosynthesis; the need for carbon dioxide, light and chlorophyll.

The Universe: solar system; the difference between stars and planets; tides, eclipses, seasons; meaning of a galaxy; simple treatment of distances and sizes involved; man's attempts to probe space.

Soil and rocks: sedimentary, igneous and metamorphic rocks; fossils, constituents of the soils; importance of humus, drainage, aeration, temperature change, presence of carbonates; acidity and alkalinity tests. The earth's crust as a source of mineral wealth; an example of the extraction of one metal; coal, coal gas and oils.

Nature of Matter: simple investigation of the properties of materials met with in everyday life, e.g. metals, glass, plastics, vinegar, baking powder and salt. Identification of common substances by simple tests, e.g. for oxygen, carbon dioxide, water, acid and alkali. Elements, compounds and mixtures, the evidence for considering air to be a mixture and carbon dioxide and water to be compounds. Atomic particles, e.g. proton, neutron and electron. Simple kinetic theory and its uses to explain phenomena such as expansion, pressure and change of state. Simple properties of magnets. The earth as a magnet.

MAN AND THE LIVING WORLD

Characteristics of living things: the differences between animals and plants, stressing nutrition. The cellular structure of living things.

Man: a simple account of human physiology; teeth and dental care; digestion and absorption; respiration and breathing; the blood system and functions of the blood; excretion; the kidney as a filter; responses to stimuli—simple reflex action; voluntary action; sight, hearing, taste, smell and touch. Simple treatment of hormones and the control of growth, metabolic rate and reproduction; reproduction and the care of the young. The essentials of a balanced diet and problems of world food supplies.

Man and plants: seeds and germination; function of root, stem and leaf; study of a named food plant, and its requirements for successful cultivation; structure of a named flower, its pollination and fertilisation; simple outline of seed dispersal.

Man and animals: the wide variety of animal life to include a simple life study of a named insect, fish, bird and mammal; a simple investigation of a food chain; the economic importance of insects; chemical and biological control. Man's effect on natural populations; conservation of wild life and man's responsibilities towards animals.

Man and microbes: evidence for the widespread distribution of microbes in air, soil, water, etc.; their importance in decay, sewage disposal, food preservation and fermentation. A simple study of the causes and control of disease with reference to tuberculosis, poliomyelitis, smallpox and malaria.

Energy: solar radiation as the main source of energy; fuels (including food), wind and water as usable sources of energy; nuclear energy and tides. Man's dependence on these sources to do work; energy transformations in everyday life. How work is measured—forces and their effect on matter; gravity, inertia; importance of centre of gravity in balance. Qualitative treatment of friction; machines and the mechanical advantage to be gained from using them; the concept of efficiency; the human skeleton and movement.

Heat as a form of energy: heat sources. Expansion of solids, liquids and gases; change of state; latent heat; difference between heat and temperature; thermometers; centigrade scale. Heat transference through various substances and by radiation, absorption and reflection; applications in the study of hot water systems, insulation in houses, refrigeration, and temperature control in animals. Evaporation of water from animals and plants.

Light as a form of energy: sources, propagation, reflection and absorption of light. Transmission of light through various media, e.g. a block of glass, water and a prism. Experimental investigation of the effect of mirrors and lenses on parallel rays of light (no ray diagrams or mathematical treatment); instruments employing mirrors and lenses, namely periscope, driving mirror, shaving mirror, camera and magnifier. The human eye. The spectrum; the colours of natural objects seen in white and coloured lights. (This whole section will be treated qualitatively).

Sound as a form of energy: production of sound; transmission through air and other materials; uses of reflection of sound. Wavelength, frequency, pitch and amplitude. The ear; audible and inaudible notes; noises and musical notes.

Electricity as a form of energy: production of electricity; transmission through various substances; conductors and insulators. Electric circuits; the household system; fuses, wiring, plugs, earthing and colour coding; sufficient knowledge of the relationship between wattage, current, voltage and resistance to understand the dangers of over-loading. The effects of an electric current; heat, light, magnetic and chemical, with examples of their uses in fires, lamps, solenoids, motors, and plating. Demonstration of current produced by movement; the generator.

Energy relationships: an appreciation of the inter-relationships between forms of energy, leading to the idea of an energy spectrum.

BIOLOGY A

The examination will consist of two written papers of 1 hour and 1½ hours' duration respectively, and the assessment of course work.

Paper I will consist of about nine multiple questions requiring short answers, all of which should be attempted.

Paper II will consist of eight questions requiring paragraph or short guided essay-type answers. Candidates must answer four.

Course work. Candidates will be required to keep a record of ecological and other practical work done during the last two years of the course. Teachers will base their assessment on candidates':—

(i) ability to tackle scientific problems;
(ii) ability to follow instructions;
(iii) manipulative skill and use of simple tests;
(iv) ability to observe and record;
(v) ability to draw conclusions.

Marks ranging from 0 to 4 should be given for each of the above and at least three assessments shall be made in the final year.

Marks will be allotted as follows:—

Paper I: 30%; Paper II: 50%; Course Work: 20%.

SYLLABUS

Knowledge in some detail of at least two contrasting habitats will be required while reference to habitats other than the ones studied in detail will be expected. Suggestions for study are:—

Water habitat (e.g. pond, river, sea, water butt, marsh).
Open habitat (e.g. waste ground, heath, dunes, meadow, moorland, neglected gardens).
Woodland habitat.
Specific habitat (e.g. tree or other individual plant, stone wall, hedgerow, compost or manure heap, host for parasites).

The following will be tested:—appreciation of the diversity of plant and animal life; ability to recognise examples, and some knowledge of the external features and modes of life, of the following organisms—(i) algae, fungi, liverworts or mosses and ferns, and (ii) a range of animals, including molluscs, fish, amphibia, reptiles, birds, and mammals; knowledge of the life histories of an insect, a fish, an amphibian and a bird.

Understanding of the way in which plants and animals are adapted for living in their environment.

Knowledge of the factors involved in the inter-relationships between the organisms of habitats, e.g. food chains (including carbon and nitrogen cycles), pyramids of numbers, inter-dependence of breeding cycles, parasitism, seasonal variation in flowering, etc.

Importance of nature conservation in general; recognition of man's effect on natural populations, e.g. use of insecticides; use of herbicides; the introduction of diseases such as myxomatosis; biological control, accidental effects such as the grey/red squirrel in the U.K. and the rabbit in Australia; man's responsibility for conservation of wild life, locally, nationally and internationally.

Arising from these studies in the natural habitats, and from experimental work in the laboratory, a more detailed study should be made of the biology of flowering plants, and of mammals, with especial reference to man.

The study of the flowering plant should include:—

(a) an understanding of the structure and functions of root, stem, leaf, and flower. It will be advantageous if sections of root, stem, and leaf of a herbaceous dicotyledon, e.g. buttercup, are examined with the aid of microscope or micro-projector but details of specialised tissues are not required;

(b) a simple knowledge of germination, photosynthesis, food storage, water relationships, respiration, reactions of plant to water, light and gravity, pollination, fertilisation, and dispersal of fruits and seeds.

The structure and physiology of a mammal should be studied and should include:—

the skeleton, and muscles, nutrition, respiration, circulation, excretion, co-ordination by the nervous system and endocrine glands, reproduction, life history and care of the young. Constant reference should be made to man if another mammal is the main study.

An elementary study should be made of:—

(i) cell biology including the structure of an animal cell and of its internal processes in relation to respiration (enzymes), growth (proteins) and replication (chromosomes, genes, D.N.A.). Chemical details will *not* be required;
(ii) heredity, variation and evolution; and
(iii) bacteria, viruses, fungi and insects in relation to man.

HUMAN BIOLOGY A

The examination will consist of two written papers of 1 hour and 1½ hours' duration respectively, and the assessment of course work.

Paper I will consist of about six multiple questions requiring short answers, all of which should be attempted.

Paper II will consist of eight questions requiring rather longer answers. Candidates must answer four.

Course Work. Assessment will be made by the candidates' own teachers and will be based on the following:—

(i) ability to tackle scientific problems;
(ii) ability to follow instructions;
(iii) manipulative skill and use of simple tests;
(iv) ability to observe and record; and
(v) ability to draw conclusions.

Marks ranging from 0 to 4 should be given for each of the above points, and at least three assessments shall be made during the final year.

Marks will be allotted as follows:—

Paper I: 35%; Paper II: 45%; Course Work: 20%.

SYLLABUS

Man as illustrating the characteristics of a living organism and of a mammal in particular.

Elementary ideas of co-ordination of the human body by means of the nervous system, sense organs and endocrine glands.

The skeleton and muscles in relation to movement and posture; the form and functions of the human skeleton; types of joints, functions of muscles, ligaments, and tendons; the effects of exercise and rest.

The nature and functions of the blood; its circulation via the heart, arteries, capillaries and veins; lymphatic system; blood groups.

The respiratory system; the relation between breathing, pulse rate and muscular activity; respiration as the source of the body's energy; fresh air and ventilation; nose breathing.

The regulation of body temperature; structure of the skin and the part played by the skin in temperature control; other functions of the skin.

The nature and uses of food; basic needs of the body and the importance of appropriate nutrition in infancy, childhood and adult life; milk (including human milk and cow's milk).

The alimentary canal including the teeth; digestion and absorption of food; a simple study of enzymes, to include ptyalin, pepsin, rennin, lipase.

The functions of the liver.

The urinary system.

Reproduction and parental care. A simple study of human development before birth, during childhood, puberty and throughout adult life.

The meaning of "health". Physical, mental and social aspects. Personal health—care of the eyes, ears, skin and hair; good posture; importance of good habits, suitable clothing, exercise and rest; smoking; alcohol; use

and abuse of drugs; care of the home; safety at home. Environmental health—housing and town planning; water supply; sewage; clean air. The World Health Organisation. National Health services—medical practitioners and allied services; hospital services; Local Authority services.
Disease—causes, transmission, resistance, control, natural and induced immunity.
The contribution of the following scientists should be considered in relation to the work studied, but personal biographical details will not be required: Harvey, Pasteur, Simpson, Lister, Jenner, Pavlov, Mendel, Ross, Fleming.

CHEMISTRY A

The examination will consist of a written paper of 2 hours' duration, and the assessment of course work.

The *written paper* will be in two sections. Section A will consist of fifteen multiple questions requiring short answers, all of which should be attempted. Section B will consist of eight questions requiring rather longer answers. Candidates must answer four.

Course work will be assessed by the candidates' own teachers and will be based on their practical work. Assessment will be made on the following:—

(i) ability to tackle scientific problems;
(ii) ability to follow instructions;
(iii) manipulative skill and use of simple tests;
(iv) ability to observe and record;
(v) ability to draw conclusions.

Marks ranging from 0 to 4 will be given for each of the above and at least three assessments shall be made during the final year.

Marks will be allotted as follows:—

Written Paper: 80% (Section A—35%, Section B—45%);
Course Work: 20%.

Credit will always be given for the correct use of chemical formulae, symbols and equations, but calculations will not be set on them.

SYLLABUS

The syllabus is based on the assumption that the concepts of atoms, ions and molecules are fundamental to a proper understanding of modern chemistry.

Atomic structure; atoms composed of a nucleus surrounded by electrons.
Electrovalency leading to a simple ionic structure and an understanding of examples of electrolysis to be found elsewhere in the syllabus.
Molecules; a kinetic view of physical state leading to an understanding of physical and chemical change. Simple experiments leading to an understanding of the particulate nature of matter, e.g. the Brownian Movement, diffusion.
Elements and compounds; constancy of composition of compounds.
Qualitative account of solubility; solutions of solids in liquids and gases in water; colloidal solution, e.g. starch.
Familiarity with experimental methods of separating mixtures including evaporation, distillation, crystallisation, decantation and chromatographic separation, e.g. the separation of dyes in chlorophyll.

The air—its composition by volume; nitrogen, oxygen, inert gases, carbon dioxide and water vapour; maintenance of the balance of gases in the air; the importance of these gases in nature and in industry; separation of these gases by the fractional distillation of liquid air.

Physical and chemical properties of oxygen; burning of sulphur, carbon, calcium, iron and magnesium in oxygen; acidic and basic oxides; reduction of metallic oxides by hydrogen or by coal gas.

The laboratory preparation of carbon dioxide and its physical and chemical properties; limestone and chalk; quicklime and slaked lime.

Water; its reaction with calcium, magnesium and iron; the rusting of iron and methods of protection against rust; decomposition of water by an electric current.

Formation and decomposition of carbonates and bicarbonates; occurrence and uses in daily life; simple treatment of the hardness of water; softening by boiling, soda and soap.

The properties common to dilute acids. The hydrogen ion; use of a common indicator; hydrogen from the action of dilute acids on metals; laboratory preparation of hydrogen; properties and uses of the gas.

The properties of sodium potassium and ammonium hydroxide. The hydroxl ion; neutralisation.

Metals and alloys; properties of iron, zinc, copper, lead and aluminium. Outline of the extraction of iron from its ores in the blast furnace. The purification of copper by electrolysis.

The preparation of soluble salts from metals, metal oxides, hydroxides and carbonates, and of insoluble salts by double decomposition.

Laboratory preparation of ammonia from an ammonium salt; simple account of the manufacture of ammonia by catalytic union of hydrogen and nitrogen; physical and chemical properties of the gas and its catalytic oxidation leading to the preparation of nitric acid. Formation of ammonium salts and nitrates in the soil; the nitrogen cycle; common fertilisers.

Sulphur as a typical non-metallic element; outline of the manufacture of sulphuric acid by the contact process; industrial importance of sulphuric acid.

Common fuels, solid, liquid and gaseous; their origin, composition, and combustion; flame (candle and bunsen); explosions and smoke. Destructive distillation of coal and a simple study of the various products. Carbon monoxide as a poison and as a reducing agent. Air pollution. Simple understanding of crude oil distillation and cracking. Carbohydrates and their uses as body fuels.

Carbon dioxide and water, photosynthesis, glucose, sucrose, starch, cellulose, artificial silk. Ethylene. Simple account of the double bond and its opening during the polymerisation of ethylene to polyethylene. A simple account of long chain molecules and their connection with the obvious properties of plastics (e.g. amorphous nature, thermo-plastic, elastic, easily moulded), P.V.C. as a simple example. Urea plastics (or casein plastics) as thermo setting plastics. The idea of cross linkages in molecules causing different physical properties. (Note: No question will be set on the detailed chemistry of plastics or their manufacture but candidates may be expected to have performed simple experiments on them and be able to explain their properties in molecular terms).

Electrolysis of common salt solution to produce chlorine, sodium hydroxide and hydrochloric acid by the Castner-Kellner Process. Bleaching and disinfection by chlorine.

Simple tests to identify carbonates, chlorides, nitrates, sulphates, and the gases hydrogen, oxygen, carbon dioxide and chlorine.

PHYSICS A

The examination will consist of two written papers of 1 hour and 1½ hours' duration respectively, and the assessment of course work.

Paper I will consist of thirty multiple questions requiring short answers, all of which should be attempted. Questions will *not* be asked on Section E of the syllabus.

Paper II will be in five sections to correspond with the sections in the syllabus. Three questions will be set on each of Sections A to D and two questions on Section E. Candidates must answer four questions from at least three sections.

Course Work will be assessed by the candidates' own teachers on their practical work (including individual project work) and general attainment. Assessment will be based on:—

(i) ability to tackle scientific problems;
(ii) ability to follow instructions;
(iii) use of measuring instruments;
(iv) ability to observe and record;
(v) ability to draw conclusions.

Marks ranging from 0 to 4 will be given for each of the above points and at least three assessments shall be made during the final year.

Marks will be allotted as follows:—

Paper I: 30%; Paper II: 50%; Course Work: 20%.

SYLLABUS

Unless otherwise stated, candidates will be expected to be familiar with both metric and British systems of units.

Section A

Density of solids and liquids by direct measurement; specific gravity. Principle of Archimedes and its application to floating bodies; buoyancy; uses of simple hydrometers. The proper use of the terms mass and weight, force and gravity. The spring balance. Hooke's law. Parallelogram of forces. Moment of a force. Centre of gravity. Simple qualitative treatment of friction and lubrication. Simple machines—levers, pulleys, simple gear trains, inclined plane. Concept of velocity and acceleration. Mechanical advantage, velocity ratio and efficiency. The scientific definition of work, energy, power and horse power. Kinetic and potential energy (qualitative treatment). Transformation of energy. Pressure—transmission of pressure in liquids; hydraulic principle and applications; dependence of pressure on depth; atmospheric pressure. The simple barometer; the aneroid barometer. The lift, force and bicycle pumps.

Section B

Explanation of the phenomenon of heat in terms of very simple molecular theory; heat and temperature; concept of absolute zero. Expansion and contraction of gases, liquids and solids; simple practical applications and consequences. The bi-metallic strip and its simple applications. Easy calculations on linear expansion of solids. Examination and use of mercury and alcohol thermometers; the clinical thermometer; the maximum and minimum thermometer; centigrade and Fahrenheit scales. Quantity of heat; unit of heat, calorie, B.T.U., therm calorific value of food and fuels. Specific heat, simple calorimetry. Transfer of heat; good and bad conductors and their uses; thermal insulation. Convection of liquids and gases. Ventilation. Radiation obeys the same laws as light. Effect of surface on radiation and absorption. Practical applications of heat transfer involved in the domestic

hot water system, vacuum flask, cooling system of a car. Change of state—freezing and melting; vaporisation and condensation; evaporation and boiling; determination of melting point by cooling curve.
Latent heat; latent heat of fusion of ice and of vaporisation of water. Cooling effect of evaporation, e.g. sweating and refrigeration. Effect of pressure on boiling point and melting point. Effect of salt on ice. Anomalous behaviour of water. Burst pipe. Heat as a form of energy and its transformation to other forms.
Simple study of the internal combustion engine (4-stroke, petrol and oil) and one of the following—steam engine, steam turbine, gas turbine or rocket engine.

Section C

Straight line propagation. Absorption and irregular reflection. Shadows and eclipses, pinhole camera. Reflection from a single plane mirror and from a concave mirror (graphical treatment); uses of plane and curved mirrors. Refraction of light between air and water, and between air and glass; total internal reflection. Lenses—graphical construction for convex lens only; applications in the camera, projector and magnifying glass. The eye compared with the camera; long and short sight and their correction. Colour—production of a pure spectrum; colour by absorption and reflection. Production and transmission of sound. The ear—details of the inner ear are *not* required. Speed, frequency and wavelength. Frequency and pitch. Reflection and echoes. Production of musical note by recorder and a stringed instrument. Distinction between music and noise. Simple demonstration of the phenomena of resonance. Audible and inaudible notes.

Section D

The electric circuit, conductors and insulators, switches, series and parallel circuits, arrangement of cells and resistors. Resistance and factors upon which resistance depends. Heating effect of a current (applications). The action of a fuse. Cables, live, neutral and earth wires. Domestic electrical circuits. The dry cell and accumulator as a source of current (chemical action excluded). Uses of ammeters and voltmeters. Ohm's Law, as applied to a simple circuit. Power equation (watts=volts × amps), and its use to calculate the safe load of a given circuit. The kilowatt hour. The properties of magnets, induced magnetism, magnetic fields. The earth as a magnet. The use of the compass. Magnetic effect of a current in a straight wire, coil, solenoid. Magnetisation and demagnetisation. Simple electric bell. Moving iron instruments. Electro-magnetic induction. Simple motor, moving coil instruments. The generator (A.C. and D.C.). Transformer. Induction coil. The telephone. Chemical effect of a current. Electrolysis and simple plating. Production of positive and negative charges by friction. A charge detector—pith ball or electroscope. (Schools which teach modern Physics may well wish to explain electrical phenomena in terms of electron flow.)

Section E

Simple descriptive and experimental treatment only will be expected in this section.
Thermionic effects. Valve and transistor (as a diode). The discharge of electricity through gases. Fluorescent lighting. Cathode rays and their properties—T.V. tube and picture. Use of condensers. Simple tuned circuits, crystal rectifier. Simple picture of the atom as positive nucleus and orbiting electrons. Simple explanation of conductors and insulators in terms of electron theory. Radio activity, radio active decay. Basic properties of alpha, beta and gamma rays. Use of Geiger counter and the electroscope.

Paper in Basic Science (Optional)

Candidates may offer this paper, additionally and optionally to one specialist science in the A series, provided that they are not taking General Science A or B.

A good performance in this paper may serve to up-grade candidates in the selected specialist science; they will not be down-graded because of a poor performance.

The paper, of 45 minutes' duration, will consist of about thirty questions requiring short answers, all of which should be attempted.

Questions will be based on the General Science syllabus A above.

EXAMINATIONS B

The aim of these examinations is to assess:—

(a) knowledge of facts (including everyday applications);
(b) vocabulary acquired;
(c) concepts understood;
(d) methods understood;
(e) interest in the subject;
(f) scientific attitudes developed;
(g) skills acquired (practical skills, and skills in classifying and interpreting data).

The form of the examination will be the same for all science subjects in Scheme B.

Each examination will consist of two written papers of 45 minutes and $1\frac{3}{4}$ hours each respectively, and *either* a practical examination *or* the assessment of candidates' practical course work *or* a combination of both. Practical examinations will continue to be internally set by the candidates' own teachers.

Paper I (45 minutes) will, in the case of General Science B, be a compulsory General Science paper. In the case of all the specialist sciences in the B series, candidates will have the option of taking either this General Science Paper I or a Paper I based on the specialist science. If more than one specialist science is taken, candidates opting to take the General Science paper will have to specify the specialist Paper II before which it shall be taken and will be required to do the specialist Paper I in the other science(s) chosen. Both the General Science Paper I and the specialist science Papers I will consist of questions requiring short answers.

In the belief that a firm foundation of knowledge of the principles and methods of various aspects of Science should be laid before specialization is attempted, the hope is expressed that schools not taking General Science will enter candidates for the General Science Paper I in place of a specialist science Paper I.

Paper II ($1\frac{3}{4}$ hours) will, in each case, be based either on General Science or the specialist science chosen and will consist of questions requiring rather longer answers than in Paper I.

Practical examination or assessment of practical course work. In Chemistry an assessment of candidates' practical course work will be made by the candidates' own teachers. In Physics, Biology and General Science, a choice between a practical examination, and an assessment of practical course work will be given. In Human Biology the marks for this part of the examination will be given for the assessment of a project.

Marks will be allotted as follows:—

General science or specialist science Paper I: 30%.
General science or specialist science Paper II: 50%.
Practical examination and/or assessment of practical course work or project work: 20%.

GENERAL SCIENCE B

The examination will consist of two written papers of 45 minutes' and $1\frac{3}{4}$ hours' duration respectively and either a practical examination or the assessment of course work.

Paper I will be compulsory for candidates taking this examination; it may be taken by candidates not entered for this examination or General Science A as an alternative to Paper I of one of the specialist science examinations in the B series. It will consist of questions requiring short answers, all of which should be attempted. The complete test will require candidates to make about 100 responses.

Paper II will consist of about 10 questions requiring multiple answers. The questions will be set in such a way that the easier parts of the question will come first and the more difficult stages later. Less able candidates may be advised by their teachers not to spend too long on the more difficult parts of any question. All questions should be attempted.

Practical work will be assessed either by an internal practical examination or by the assessment of course work. The practical examination suggested is one of the "station" type. There should be about six "stations" and the candidate should spend about five minutes at each. At a station he may be required to undertake either (a) some simple exercises requiring direct observations, or measurements, and the brief recording of results, or (b) an experiment requiring some manipulation and the recording of conclusions reached. Candidates should pass continuously through the laboratory, during the period of the examination. Course work will be assessed on work done during the three terms preceding the examination.

Marks will be allotted as follows:—

Paper I: 30%;
Paper II: 50%;
Practical examination or course work: 20%.

SYLLABUS

Questions on items in italics will be set only in Paper II; they are *not* required for Paper I.

Water

Change of state: distillation, water cycle.
Solutions: solvents, suspensions, crystallisation.
Water supplies: levels, pressure, *lift and force pumps*, purification by filter and chlorine, household water systems.
Hard and soft water: *soap, detergent, surface tension, capillarity.*
Maximum density of water: effect on pond life.
Water a compound: volume and composition. *Decomposition using metals and electrolysis.*

Air

Introduction: composition, burning, breathing, rusting.
Oxygen: oxides, laboratory preparation of oxygen, properties and uses. *Industrial preparation of oxygen.*
Classification: elements, compounds, mixtures, symbols and simple formulae. Simple structure of the atom. Physical and chemical changes.
Fuels and flame: combustion, carbon, laboratory preparation of coal gas and compounds, a source of energy.
Carbon dioxide: preparation, properties, uses, respiration. Uses of chalk and limestone.
Acids, bases, salts: simple properties of acids and bases in solution.

Pressure: simple treatment of atmospheric pressure; simple applications such as barometers, cycle, *lift and force pump*, siphon, drinking straw, etc. *Pressure cooker—effect of pressure on boiling point.* Mechanism of breathing —lungs and gills.

Heat

Introduction: as a form of energy; sources.
Effects: comparative treatment of expansion of solids, liquids, gases—everyday applications.
Thermometers: mercury, alcohol, maximum and minimum, clinical; centigrade and Fahrenheit scales.
Thermostat: principle and uses.
Transfer of heat: conduction, convection and radiation; practical applications, e.g. Davy lamp, Thermos flask, hot water systems. *Climate; ventilation.*
Change of state: simple ideas of latent heat; cooling by evaporation; *refrigeration; temperature control of the body.*
Atmospheric conditions: humidity, dew, mist, cloud, fog, frost.
Specific heat: practical applications, not calculations.
Measurement of heat: *differences between heat and temperature; calorie, B.T.U. therm; simple ideas of calorific values of fuels and food (kilo-calorie).*

Light

Introduction: as a form of energy; sources. Rectilinear propagation; shadows; eclipses.
Reflection: laws of reflection—from plane mirrors only; curved mirrors; practical applications.
Refraction: simple refraction at blocks and prisms leading to simple treatment of convex *and concave* lens; uses including apparent depth "bending" of objects; lenses used to produce magnified images on a screen.
Eye: construction of the human eye; correction of sight defects.
Spectrum: formation; colour of objects.

Sound

Production: transmission.
Vibration: musical instruments; *frequency, pitch, amplitude.*
Speed of sound: echoes.
Detection of sound: the human ear.

Magnetism

Natural magnets: lodestone—magnetic and non-magnetic materials.
Artificial magnets: permanent and temporary.
Magnetic compass: Earth's magnetism.
Laws of magnetism: simple magnetic fields; everday uses.

Electricity

Introduction: simple electric circuit and essential parts—dry cell as source of energy. Switch to control and appliance to use energy in circuit. *Primary and secondary cells, conductors and insulators, series and parallel circuits. Domestic appliances—simple treatment including earthing of apparatus.*
Heating effects: fires, lamps, fuses.
Magnetic effect: electro magnets and simple applications.
Induced currents: *simple dynamo and motor. Transformer and grid system.*
Chemical effect: production of electricity from chemical reactions; electrolysis of copper sulphate solution; electro-plating.
Units: amps, volts, watts, kilo-watt hour (unit). Simple calculations may be asked. Ohm's law is *not* required.

Measurement and Mechanics

Introduction: Earth in space and time; terrestrial and astronomical distances.
Gravity: measurement of weight.
Volume: direct measurement and by measuring cylinder and displacement can.
Density: solids and liquids.
Relative Density: *flotation—fluid pressure and effect of depth, hydrometer; Plimsoll mark.*
Force: *work and energy.*
Friction: *inertia—simple treatment only.*
Simple machines: *levers—simple examples; pulleys—simple systems; mechanical advantage, velocity ratio, efficiency and power. Simple study of working principles of an engine, e.g. internal combustion petrol engine.*

Plant Life

Introduction: simple study without structural details of non-flowering plant life, including bacteria, fungi, mosses and ferns. *Contribution of some famous biologists such as Pasteur and Fleming.*
Flowering plants: general, parts of a plant. Trees, deciduous and evergreens, winter twigs, summer leaf.
Plant nutrition: photosyntheses only in simplest outline. Mineral salts and water. *Dependence of all life on plants—food chains.*
Plant respiration
Plant irritability: response by growth.
Parts of a flower: functions—pollination, fertilisation. (Candidates should be able to distinguish between pollination and fertilisation and to show that fertilisation involves fusion of gametes).
Fruit and seed: dispersal.
Seeds and seedlings: simple structure, conditions for germination.

Animal Life

Introduction: simple study including insect, earthworm, fish, toad or frog, reptile, bird.
Cells: differences between living and non-living things; plant and animal cells.
Nucleus: sufficient only to appreciate the terms chromosome, gene, mutation; effects of radiation.

Mammal

Skeleton: function; hinge, and ball and socket joints.
Food: main groups, adequate diet.
Digestion: teeth—herbivore, carnivore, human; parts of digestive system; idea of an enzyme as a catalyst.
Respiration: simple account of the structure of the lungs, etc.; comparison with other forms of respiration, e.g. gills, skin, trachea (insects).
Excretion: kidney used for selective filtration of the blood, especially of protein waste.
Skin: outline structure and function.
Nervous system: very simple ideas—no structural details.
Reproduction: main ideas simply.

BIOLOGY B

The examination will consist of two written papers of 45 minutes and $1\frac{3}{4}$ hours respectively, and either a practical examination or the assessment of practical course work.

Paper I will be in the same form as the General Science Paper I, which may be taken instead of it by candidates not offering General Science A or B.

Paper II will consist of about ten multiple questions, all of which should be attempted.

Practical work will be assessed either by an internal practical examination as described for General Science, or on course work. In the latter case, candidates' records of original field work will be taken into account.

Marks will be allotted as follows:—

Paper I: 30%; Paper II: 50%;
Practical examination or course work: 20%.

SYLLABUS

Characteristics of living organisms

General: conditions necessary for life; the elementary facts about composition and biological properties of protoplasm.

Cells: selected examples from animals and plants to show similarities and differences in structure and function; the meaning of the terms organism, organ and tissue. (The use of a micro-projector or microscope is recommended.)

Animal life: simple study of forms of animal life including amœba, insect, earthworm, fish, toad or frog, reptile, bird. This should include wherever possible the study of the living animal in its environment. The feeding apparatus of insects should be given just as much general consideration as will provide understanding of the feeding habits. A simple treatment of respiration in all these types should be included.

Plant life: simple study of non-flowering plant life to include the morphology, nutrition, life history of a fungus and an alga. The nitrogen cycle: methods of preserving food. The fungi and bacteria as parasites causing disease: antisepsis, asepsis, inoculation—simple treatment only. The contribution of scientists such as Jenner, Lister, Pasteur, and Fleming to man's welfare.

Mammal

General: anatomy, elementary physiology and general biology of a mammal; the mammal considered as an entity in the environment of its habitat. (Frequent reference to human biology should be made although a small mammal is used for most of the work). Main structural features including the layout of the internal organs.

Skeleton: general arrangement and functions; types of joints—shoulder, hip, elbow; action of muscles on bones to produce movement, e.g. biceps and triceps; bones as levers. Structure of the skull is *not* required and vertebrae are to be treated very simply.

Food: adequate human diet; tests for starch, reducing sugars, protein and fat. The importance of mineral salts and vitamins should be mentioned.

Teeth: relation to diet in herbivore, carnivore and human. Dental formulae are *not* required.

Digestion: parts of the alimentary canal and their functions; enzymes—action only; the absorption, transport and utilisation of digested food; outline function of the liver; the action of one or two enzymes demonstrated experimentally.

Circulation: the main features of the circulatory system; a simple account of the structure and function of the heart. Composition and functions of the blood; capillary circulation. Brief mention of lymphatic system.

Respiration: the mechanism of inspiration and expiration: gaseous exchanges in the lungs and tissues. The elements of tissue respiration. Experiments in the production of carbon dioxide.

Excretion: kidneys used for selective filtration of the blood, especially the removal of protein waste. Ureter and bladder.

Skin: outline structure and function. Constant body temperature—its importance and regulation. Defences of the body against infection.

Co-ordination: the nervous system; simplified account of the brain and spinal cord. Reflex compared with voluntary action. The principal sense organs. The structure and function of the eye and ear (correction of defects *not* required). Behaviour, especially a comparison of "intelligent" and "instinctive" types, should be given some consideration. The function of the endocrine system simply.

Reproduction: reproductive organs; outline of development of young (nutrition, respiration, birth).

Flowering Plants.

General: the external morphology of herbaceous flowering plants.

Trees: characteristics of one evergreen and one deciduous tree in summer and winter. Studies to include an elementary treatment of the results of secondary thickening and the functions of bark: the lenticels and the part played by the abscis layer at leaf fall.

Plant study: a very simple treatment of the external and internal structure of root, stem and leaf: enough for an elementary understanding of the five sections below. (Sections of root, stem and leaf of an herbaceous dicotyledon should be examined with a microscope, micro-projector or at least with a hand lens to discover the distribution of the chief types of tissue. Details of cell structure are not required):

(a) The absorption of water and mineral salts: the path of water in plants; transpiration. The processes of osmosis and diffusion demonstrated with both living materials and with artificial cell. Dyes used to demonstrate the path of the transpiration stream. Loss of weight of potted plant or leafy shoot in water, use of cobalt chloride paper, effects of external conditions on water loss. Use and limitations of potometer.

(b) Photosynthesis—elementary study. Experimental demonstration of the need for chlorophyll, light and carbon dioxide, formation of starch and oxygen.

(c) Protein synthesis—transport of foods elaborated from this process. Mineral deficiencies, water or sand cultures.

(d) Respiration—experiments to show that green plants respire.

(e) Growth and tropic movements—regions of growth in root and shoot. Geotropism (primary roots and shoots); phototropism of shoots.

The parts of the flower and their functions: insect and wind pollinated flowers; cross and self pollination. Fertilisation and development of seed and fruit. (Microscopic detail *not* required except for growth of pollen tube and fusion of nuclei).

Fruit and seed dispersal: wind, animal and self-dispersal.

The structure of seeds and seedlings: conditions for seed germination. Study of at least one epigeal and one hypogeal example. Experimental work on the effects of water, oxygen, temperature and light.

Herbaceous perennials: to illustrate forms of storage organs and vegetative reproduction, including bulb, corm, tuber, rhizome, taproot. Compare and contrast reproduction by seed and vegetatively.

Soils: in relation to plant growth; soil testing—pH. Mechanical analysis, assessment of amount of air, water, humus; comparison of porosity and capillarity in different soil samples. Importance of organic and inorganic fertilisers. Rotation of crops.

Ecology

A simple treatment of the relation of plants and animals to their environments and to each other and their complementary nature in an eco-system. An elementary study of the community of a well-defined habitat. Food chains: interdependence and inter-relationships.
Candidates should be encouraged to study natural history.

Heredity and Evolution

Simple introduction to the study of heredity with enough detail to appreciate the terms "chromosome", "gene", and "mutation".
Concept of evolution.

Practical Work

The tests set in the practical examination should assess candidates' ability in the following forms of practical work:—

(i) recognition of familiar structures, e.g. twig, common flower, insect, bone;
(ii) diagnosis, e.g. examine a bone and describe its function; examine a twig and estimate the age of the oldest part;
(iii) skill in making observations, e.g. given sections of a bulb and corm, examine them and note similarities and differences;
(iv) recognition of adaptation to environment, e.g. the adaptations which fit an animal such as a fish or an earthworm, which is on display, to its own particular environment. The adaptations to be noted and commented upon;
(v) general experimental ability, e.g. the ability to grasp the significance of an experiment in progress, or to carry out simple practical tests.

The internal assessment should be based upon the candidates' own records of their own experiments and upon a series of tests of the type described above. Alternatively, the assessment may be based wholly, or in part, upon the record of an original piece of field work carried out by the candidate.

HUMAN BIOLOGY B

The examination will consist of two written papers of 45 minutes and $1\frac{3}{4}$ hours' duration respectively, and the assessment of a project.

Paper I will be in the same form as the General Science Paper I, which may be taken instead of it by candidates not offering General Science A or B.

Paper II will consist of about ten multiple questions, all of which should be attempted.

A *project* will be undertaken by candidates and will be assessed by candidates' own teachers. Candidates will be free to make their own choice of project provided that it is relevant to the syllabus. Evidence of active participation in welfare work will be regarded as a project, and will not only be fully acceptable but will be welcomed.

Marks will be allotted as follows:—

Paper I: 30%; Paper II: 50%; Project: 20%.

SYLLABUS

Candidates should have sufficient basic scientific knowledge to be able to understand the principles involved in simple physiology and hygiene.

Man—a mammal: general structure and arrangement of the organs. (Demonstration dissections of small mammals may be used as illustrations.)

Skeleton: functions; types of joints—ball and socket, hinge, pivot, gliding, fixed.

Muscles: origin and insertion; co-ordination; exercise; work; fatigue; rest; posture.

Blood and blood system: composition and functions of the blood; structure and function of the heart; arteries; veins; capillaries; main blood vessels.

Lymph and lymphatic system.

Food and its uses: basic food requirements; tests for sugar, starch, protein and fats; balanced diet; requirements in infancy, childhood and adult life; requirements for various occupations.

Teeth and alimentary canal: structure, function and care of teeth; digestion; parts of the alimentary canal; enzymes; absorption; movement and utilisation of food; liver and pancreas.

Respiration: mechanism of breathing; lungs; alveoli, bronchi, trachea; gaseous exchange; oxygen debt; tissue respiration; nose breathing; fresh and expired air. Ventilation.

Skin: structure and function; temperature regulation; washing including hair and clothing.

Excretion: structure and function of kidneys and bladder.

Nervous system: central and peripheral nervous system. Reflex action; conditioned reflexes; reaction time; effects of drugs including alcohol. Sense organs. Structure of ear and eye. Sight defects and spectacles. Sleep.

Endocrine glands: especially thyroid and pituitary; hormones.

Reproduction: male and female organs, formation of sex cells; fertilisation; outline of growth of fœtus. Mammary glands and lactation. Mendelian inheritance. (Two pairs of factors only).

Cells: the living cell; tissues and organs.

Environment: relation of living things with environment.

Plants and animals: a comparison; origin of animal energy; the sun; dependence of animals on plants.

Micro-organisms and health: disease and its spread; deficiency diseases—hormone and vitamin; insects as disease carriers; the house fly. Vaccination, immunisations, immunity in general. Parasites—study of at least one endo-parasite and one ecto-parasite. Food contamination; food storage; Public Health Acts and food sales.

Man's living conditions: housing, lighting, heating, ventilation; overcrowding; recreational space. Main services—water supply; waste disposal. Working conditions in shops, offices and factories, etc.

CHEMISTRY B

The examination will consist of two written papers of 45 minutes and $1\frac{3}{4}$ hours' duration respectively, and the assessment of practical course work.

Paper I will be in the same general form as the General Science Paper I, which may be taken instead of it by candidates not offering General Science A or B.

Paper II will be in two sections. Section A will consist of about twenty-five questions requiring one or more short answers. All questions should be attempted. Section B will consist of not less than ten questions requiring rather longer answers, from which candidates must answer six.

Practical Course Work will be assessed by the candidates' own teachers, based on marks given for practical work during the three terms prior to the examination. Candidates will be required to keep a laboratory notebook.

Marks will be allotted as follows:—

Paper I: 30%; Paper II: 50%; Practical Course Work: 20%.

SYLLABUS

The states of matter: solids, liquids and gases, all consisting of particles (molecules, atoms, ions). The difference between the physical states accounted for by the packing and movement of these particles. Diffusion of liquids and gases, melting, boiling, liquefaction, evaporation, sublimation, solution and osmosis explained by moving particles. Energy necessary to overcome inter-particle (inter-molecular, inter-ionic) forces.

Solution: difference between melting and dissolving; solvents of various types. Suspensions and emulsions. Effect of heat on the solubility of gases and solids. Natural waters. Water purification.

Chemical processes: separation of mixtures by solution, filtration, crystallisation, distillation, sublimation and diffusion. Purification by crystallisation. Solubility curves.

Effect of heat on substances: produces change of state, decomposition, or combination (shown by weight change).

Air: constituents; determination of volume composition; the rare gases; liquid air manufacture and its fractional distillation. Oxygen—laboratory preparation, manufacture from liquid air; properties and uses; burning elements in oxygen, and the effect of water and litmus on the products; oxidation. Nitrogen—preparation of atmospheric nitrogen using copper; manufacture from liquid air (preparation of nitrogen from nitrogen compounds *not* required); properties and uses. Carbon dioxide—burning carbon in air and testing product with lime-water; proving presence of carbon dioxide in the air.

Water: its decomposition by (a) metals, and (b) electricity; volume composition; hydrates; water of crystallisation; efflorescence; deliquescence—drying agents. Hydrogen—laboratory preparation, outline of manufacture; properties and uses. Synthesis of water by burning; tests for water; synthesis of water using copper oxide; composition of water by weight.

Classification of substances: elements, compounds and mixtures (air a mixture—water a compound). Metals and non-metals. Physical and chemical changes.

The atom: electrons, protons, neutrons; atomic number and atomic weight; isotopes.

How atoms combine: (a) electron transfer between metals and non-metals—electrovalency; use of ions in crystal structure. (b) electron sharing between non-metals—covalency; real molecules formed. Chemical change concerns outer parts of the atom only—electrons. Symbols, formulae, simple equations (ionic if preferred). Spatial structure of molecules.

Types of rocks: igneous, sedimentary, metamorphic; their geological distribution in England, especially in the chalk and limestone areas. Calcium carbonate—decomposition by strong heat and acids; quicklime; slaked lime; mortar; uses of calcium carbonate—cement and concrete. Carbon dioxide—laboratory preparation; properties and uses. Respiration. Fire extinguishers. The carbon cycle; carbonates and bicarbonates.

Acids, bases and salts: relationships; simpler properties of acids and bases in solution. General methods of soluble salts preparation. (May be explained by interaction of ions.) Preparation of the insoluble salts, silver chloride, barium sulphate, calcium carbonate by double decomposition. The dissociation of water. Acidity due to hydrogen ions, and alkalinity to hydroxyl ions. Meaning of pH—neutral pH7. Application to soils—Universal Indicator.

Types of chemical reaction: combination, decomposition, direct replacement, double decomposition, oxidation and reduction (simple conception). Reversible reactions; endothermic and exothermic reactions. Catalysis; enzyme catalysis (fermentation); metal catalysis (industrial processes).

Laws: Law of Constant Composition. Calculating % composition, % water of crystallisation; determining % of water of crystallisation by experiment. Use of simple equations in calculating theoretical yields.

Carbon and its compounds: Allotropes; properties and uses. Carbon monoxide—laboratory preparation from carbon dioxide; the product of incomplete combustion of carbon-containing compounds; properties and poisonous nature.

Fuels: combustion of carbon and carbon-containing compounds (solid, liquid and gaseous) as available sources of energy; products of hydrocarbon combustion using insufficient air, or a plentiful supply of air; the candle and bunsen flames. Ignition temperature; explosions. Laboratory preparation of coal gas; coal gas manufacture—by-products. Water gas, producer gas and calor gas.

Ammonia: laboratory preparation; the Haber process; properties with regard to water and acids; uses; fertilisers; the nitrogen cycle.

Nitric acid: laboratory preparation; industrial manufacture from ammonia; uses; action of nitric acid on metals. (Detailed knowledge of oxides of nitrogen *not* required.) Action of heat on nitrates; "Brown-ring" test for nitrates.

Hydrogen chloride: laboratory preparation from common salt; industrial synthesis; hydrochloric acid and chlorides; silver nitrate test for chlorides.

Chlorine: laboratory preparation by hydrochloric acid oxidation; simple properties—bleaching, disinfecting; uses; sodium hypochlorite; the halogens; replacement of bromine and iodine by chlorine. Chlorine manufacture from brine. (Mercury-cathode cell.)

Sulphur: occurrence and uses; extraction (Frasch process) (*not* allotropy).

Sulphur dioxide: manufacture by burning sulphur and sulphur-containing ores; laboratory preparation from sulphites and bisulphites (*not* copper and sulphuric acid). Uses—bleaching and preservative action.

Sulphuric acid: laboratory preparation of sulphur trioxide and hence sulphuric acid; acid and dehydrating properties (*not* oxidising). Chief

uses; the contact process; the sulphates of sodium, calcium, copper, barium, magnesium and iron. Barium chloride test for sulphates.

Hydrogen peroxide: use of dilute solution. (Preparation *not* required.)

Metals and their compounds: the occurrence, important alloys and uses of sodium, calcium, magnesium, aluminium, zinc, iron, tin, lead and copper. Advantages of alloys over pure metals. Extraction of iron, tin and zinc from their ores. The activity series—action of metals on water and acids, reduction of oxides, replacement of one metal by another. Wrought iron and steel. Rusting and its prevention. Oxides of lead and zinc. Calcium and magnesium compounds causing water hardness—simple practical treatment. Soaps and detergents. "Plaster of Paris". Sodium hydroxide, carbonate, bicarbonate and nitrate.

Electricity in Chemistry: electrolytes and non-electrolytes. Electrolysis of acidified water, fused sodium chloride, sodium chloride and copper sulphate solutions. (An explanation of the selective discharge of ions is *not* required.) Electroplating. Electricity produced in chemical reactions—the dry cell.

Organic chemistry: the fractional distillation of petroleum—main products. Hydrocarbons—the paraffin series and their structure in space. Ethylene —polythene—polymerisation. Alcohols. Carbohydrates (Fermentation). Organic acids—acetic, lactic, citric, and their uses.

Credit will be given to candidates who make reference in their answers to experiments of historic importance in the development of chemistry.

PHYSICS B

The examination will consist of two written papers of 45 minutes' and $1\frac{3}{4}$ hours' duration respectively, and either a practical examination or the assessment of practical course work.

Paper I will be in the same general form as the General Science Paper I, which may be taken instead of it by candidates not offering General Science A or B.

Paper II will be in two sections. Section A will consist of about twelve questions requiring one or more short answers. All questions should be attempted. Section B will consist of not less than seven questions requiring rather longer answers, from which candidates must answer four.

Practical work will be assessed either by a *practical examination* or by the assessment of *practical course work*. Both the examination and the assesment of course work will follow the pattern shown in the General Science examination.

Marks will be allotted as follows:—

Paper I: 30%; Paper II: 50%;
Practical examination or practical course work: 20%.

SYLLABUS

The itemising of the syllabus as given below is not exhaustive, nor is it intended to dictate methods of approach. Questions may be asked on topics which are closely related to those given, which are clearly implicit in the syllabus and which may reasonably be expected to be taught to the pupils for whom the examination is intended.

Candidates will be tested on their ability to apply their knowledge of the syllabus to everyday situations, and their knowledge of fundamental concepts such as molecular theory, kinetic theory energy, etc., which bind together the various branches of the subject.

Mechanics and properties of matter

Motion in a straight line, velocity and uniform acceleration; simple calculations and graphs (use of gravitational units only). Effects of mechanical force in producing (i) acceleration; (ii) equilibrium; gravity, mass and weight; simple methods of weighing, e.g. spring balance and chemical balance. Levers, moments and balanced forces with simple calculations; centre of gravity and stability. Elasticity—Hooke's law and spring balance. Work—definition, simple machines-pulleys, inclined plane and screw, wheel and axle, gears; mechanical advantage and velocity ratio, efficiency, horse-power, friction and lubrication. Densities of solids and liquids by direct measurement. Relative density; principle of Archimedes and its application to floating bodies, Plimsoll line, hydrometers (of uniform cross-section only as a basis for simple calculations). Atmospheric pressure; barometers and pumps; variation of pressure with depth in water and in air, simple calculations on p=h x d; hydraulics. Viscosity simply treated.

Heat

Heat as a form of energy; effects ot heat; simple kinetic theory. Thermal expansion of air, liquids and solids with simple examples of (a) uses; (b) disadvantages and precautions; easy calculations on the linear expansion of solids. Uses of thermometers; types of thermometer in common use—maximum, minimum, clinical, centigrade and Fahrenheit scales (conversions will *not* be asked). Measurement of heat; simple calorimetry including specific heat and capacity for heat of different substances tested experimentally; calorie, kilo-calorie, B.T.U. therm. Calorific value of fuels and foods. Transfer of heat; house heating and domestic hot water system; good conductors and insulators and everyday examples of their use, including vacuum flask. Ventilation; land and sea breezes. Vapours and saturated vapours related to atmospheric conditions and formation of dew, mist, fog, cloud, frost, snow; humidity; simple study of meteorological information and weather. Changes of state; melting and boiling points; changes in volume of water on freezing and boiling and applications; effects on freezing and boiling points of pressure changes and dissolved substances. Latent heat of ice and steam; simple determination of; application of the principle of latent heat to thawing, cooling by evaporation, refrigerator. Simple study of internal combustion engine, turbine, jets, rockets. Heat as a source of energy; idea of mechanical equivalent, of heat illustrated experimentally.

Sound

Production, transmission and perception of sound; types of musical instrument; simple treatment of the ear. Determination of the speed of sound; echoes and echo-sounding. Difference between musical notes and noise illustrated by reference to simple musical instruments; resonance, frequency and pitch, amplitude and volume. Acoustics; reflection and absorption of sound.

Light

Natural and artificial sources; variation of intensity of illumination with distance from source (including inverse square law simply). Reflection—irregular reflection and absorption. Straight line propagation, shadows and eclipses (dependence on size of source and object casting shadow). Plane and curved mirrors (ray diagrams and graphical construction

for formation of images). Refraction of light at plane surfaces; apparent depth and total internal reflection. Refraction in prism, leading to deviation and dispersion; lenses and colour. Lenses; graphical construction for convex lenses only; use of lenses in instruments, e.g. camera, projector, magnifying glass. The eye; long sight and short sight and correction by spectacles (no calculations). Production of a spectrum; colour of materials and filters; mixing of coloured lights; rainbow.

Magnetism and Electricity

Characteristic properties of magnets; attraction and repulsion; magnetic fields (iron filings and plotting compass); induced magnetism; making magnets. Earth's magnetism; the compass and magnetic screening, declination, variation and dip. Simple frictional electricity; simple ideas of electron and atom structure. The electric circuit; conductors, insulators and switches; the electric torch. Effects of electric current, heating, chemical, magnetic. Dry cell and accumulator (storage cell based on chemical action). Current and Ohm's law. Series and parallel arrangements of cells and resistances (qualitatively); factors governing resistance. Applications of heating effect in appliances, fuses, cables; house wiring as application of these ideas (parallel circuits); earthing. Magnetic effect of current; electromagnets and the making of permanent magnets, solenoids and field coils (to include electric bells, relays and telephone receivers); principles of simple galvanometers, hot wire, moving coil, moving iron, etc., ammeters and voltmeters, shunts and series resistances (not calculations). Simple D.C. motor. Electrolysis and electro-plating (qualitatively). Wattage and payment for electricity. Electro-magnetic induction, generators (D.C. and A.C.), transformer and induction coil; the grid system of transmission, advantages of A.C. Modern development of electronics based on simple electrostatics, simple discharge tubes, radio valves and T.V. tubes; X-rays, radioactivity.

Technical Subjects:

In all the examinations in technical subjects, grades will depend not only on the aggregate marks obtained but also on reaching a minimum standard in each part of the particular examination. The papers of candidates who would not qualify for the award of a grade solely through failure in any one part of an examination will be referred to the Chief Moderator.

The Board will inform schools of the materials and tools required for practical tests but schools will be responsible for providing them.

METALWORK

EXAMINATION A

The examination will consist of a practical test of 3 hours' duration, a written paper of 2 hours' duration, and the submission of course work done during the fourth and fifth years.

The *practical test* will be based on a paper requiring candidates to produce a completed piece of metalwork in *either* bench fitting; *or* bench fitting with some lathework but excluding use of the independent chuck; *or* benchwork, with some forgework; *or* beaten metalwork (excluding raising); *or* sheet metalwork.

An isometric assembly sketch, in addition to a working drawing, will be given in each case. Candidates will be expected to supply simple constructional details. All material used must be submitted to the examiner.

The *craft knowledge paper* will be in two sections. Section A will consist of ten questions on basic processes, all of which should be attempted. Section B will consist of twelve questions in all, two questions being set on each of the specialised processes listed below. Candidates must answer any three.

Course work will be assessed on work done during the year in which the examination is held and the preceding year. Candidates may submit types of work (e.g. model engineering, turning, casting) not included in the practical test. Group work, provided that its nature is such that a moderator can assess the contribution of each individual candidate, may be submitted.

Marks will be allotted as follows:—

Practical Test: 40%. Craft knowledge paper: 20%.
Course work: 40%.

SYLLABUS

Basic Processes

Safety precautions in the workshop.
The care, use and maintenance of hand tools found in the workshop.
Metals and alloys commonly used in the school workshop and their normal applications.
Processes of marking out, and use of measuring equipment (excluding vernier).
Processes of cutting, shaping and bending of metal (bar, rod, strip, sheet).
The common joining processes—riveting, soft and hard soldering, brazing. Nuts, bolts, set screws and studs.
Simple heat treatment, case hardening, hardening and tempering, annealing.
Screw cutting by hand.
Drills and the drilling machine—use, parts, methods of holding work.
Elementary planning problems, and methods of procedure.

Specialised Processes

Simple Tool Making.
Beaten Metalwork including hollowing, sinking, raising, flat and curved planishing, methods of polishing and finishing.
Forge work including hot and cold cutting, hot and cold bending, drawing down, twisting, simple upsetting, simple scroll work.
Lathe work including the use of three- and four-jaw chucks, surfacing, turning shoulder or spigot, drilling, knurling, taper turning (compound slide only), parallel turning between centres. The usual lathe cutting tools.
Foundry work including simple pattern making, casting in non-ferrous metals.
Sheet metal work including developments, simple folding and bending, simple joints—lap, folded seam, grooved seam. Solder, fluxes, soldering bits, sweating.

EXAMINATION B

This examination is a Special Notice examination and papers will be set only in accordance with paragraph 5 of the Board's Regulations. (See page xv.)

The aim of the practical test is largely to assess candidates' technical skill and ability to read a drawing, and the craft knowledge test to assess candidates' knowledge of techniques, tools and materials. The inclusion of course work and personal interviews is intended, additionally, to give candidates the opportunity to exercise creative ability and to show discrimination between the good and the bad in form and function.

The examination will consist of a practical test of 3 hours' duration, a written paper of 2 hours' duration, the submission of course work, and a personal interview.

The *practical test* will require the making of a single piece of craftwork. The diagrams used will be in orthographic projection, supplemented as necessary by isometric sketches. Credit will be given for correct interpretation of the drawing and the design of details as well as for the candidates' proficiency in producing a well-finished article. Extra material will be available and all material used must be submitted to the examiner.

The *craft knowledge paper* will be in two sections. Section A will consist of at least ten questions on basic processes and materials. All questions should be attempted. Section B will consist of more difficult questions on specialised branches of metalwork and candidates must answer three questions from a wide choice. Credit will be given for sketches or diagrams to illustrate written answers.

Course work. All course work done during the three terms (Summer, Christmas and Easter) preceding the examination shall be submitted for assessment. Unfinished work shall be included and candidates must submit work showing experience of at least two branches of metalwork. A teacher's report must accompany any items submitted where assistance has been given, or where work cannot be dismantled for inspection, or where sufficiently exacting group work is to be assessed. A personal study folio may also be submitted, if candidates so wish.

Interview. This will be in the nature of an informal discussion related to the candidates' course work, personal study folio and knowledge of craft processes.

Marks will be allotted as follows:—

Practical Test: 20%.	Craft Knowledge Paper: 20%.
Course work: 40%.	Personal Interview: 20%.

SYLLABUS

Metals and alloys used in the school workshop and knowledge of their normal applications.
Simple heat treatments: tempering, case hardening and annealing.
The care and uses of the hand tools found in a school workshop.
Knowledge of the basic processes of setting out, sawing, chiselling, filing, drilling, riveting and the uses of taps and dies.
Simple sheet metalwork.
Hollowing, sinking, simple raising, planishing, soft and hard soldering.
Forgework, including hot and cold bending, simple scroll work, drawing down, twisting and simple upsetting, brazing.
The use of the drilling and polishing machine.
Lathe work: the use of the self-centring and independent chuck, parallel turning, drilling, knurling, the cross slide, compound rest and usual lathe cutting tools.
Casting non-ferrous metals in sand and pattern making.
Elementary planning problems and methods of procedure.
Safety precautions.

WOODWORK

EXAMINATION A

The examination in Woodwork will follow the pattern for Metalwork Examination A except that:—

(i) There will be no choice of questions in the practical test.

(ii) Section B of the craft knowledge paper will consist of six questions instead of twelve. Candidates must still answer any three.

Note:—Examples of the kind of woodwork which may be submitted for course work are wood sculpture, wood turning and boat-building but these are for guidance only.

SYLLABUS

CRAFT KNOWLEDGE PAPER

Safety precautions in the workshop.
The care, use and maintenance of hand tools used in the school workshop.
Timber—natural and kiln seasoning, conversion. Methods of storing. Defects in timber. Effects of heat and moisture. An elementary knowledge of the characteristics of common hardwoods and softwoods with particular reference to their suitability for specific purposes. The chief uses of plywood, laminated board, plastic laminates and blockboard. Veneers. Common market forms.
Selection of the correct types and sizes of nails and screws for elementary work. Basic cabinet fittings.
Glues and modern adhesives.
The application of the common joints to basic constructions.
Finishing processes for hard and soft woods.
Elementary planning problems, cutting lists and methods of procedure.
The reading of drawings, the extraction of information from them and sketching.

PRACTICAL TEST

Planing. Plain housing joints—through and stopped; halving joints; bridle joints; mortice and tenon joints—through, stopped, haunched (excluding long and short shouldered); through dovetail joints. Nailing and screwing. The fitting of hinges. Simple shaping involving the use of firmer chisel, scribing gouge, coping and bow saws, spokeshave.

No glasspaper, rasps or power machinery will be used in the examination.

EXAMINATION B

This examination is a Special Notice examination and papers will be set only in accordance with paragraph 5 of the Board's Regulations. (See page xv.)

The aims and form of the examination in Woodwork are identical with those for Metalwork, Examination B.

SYLLABUS

Common woodworking tools normally found in the school workshop, their correct use, construction and maintenance.
Timber—an elementary knowledge of the characteristics of softwoods and hardwoods in common use; defects, seasoning. The chief uses of plywood, laminated board and blockboard. Nails and screws, their correct selection for elementary work. A knowledge of adhesives.
Basic constructions and processes; common joints and their uses; procedure in making simple articles. Elementary planning problems and methods of procedure. Wood-turning. Understanding of finishing processes for softwoods and hardwoods.
Safety precautions.

TECHNICAL DRAWING

EXAMINATION A

The examination will consist of two written papers each of 2½ hours' duration. Fifteen minutes of this period will in each case be allotted for reading the questions and making preliminary sketches; no further reading time will be allowed. These sketches will not be handed in.

Paper I will be broadly based on Applied Geometry. Questions will not be set as exercises in pure plane and solid geometry but will be practical, with specific references to familiar articles in Metalwork and Woodwork. Ten questions will be set from which candidates must answer Question 1 and any four others.

Paper II will consist of six questions. Candidates must answer *either* Question 1, which will have a metalwork bias *or* Question 2 which will have a woodwork bias and any two other questions. Questions 1 and 2 will require drawing in orthographic and/or pictorial projection of components and freehand sketching will *not* be allowed. Candidates are advised to spend about 1½ hours on whichever question they choose. The remaining four questions may be set on completion of missing views from a given drawing, orthographic projection from a photograph or pictorial view, and pictorial projection from a given orthographic drawing as well as orthographic and pictorial projection of components. Freehand sketching will be required in this Section.

The current relevant British Standards must be observed throughout the examination.

The two papers will carry equal marks. In Paper II, Question 1 or 2 will carry 60% of the total marks for the paper.

SYLLABUS

Paper I

Division of a straight line into equal parts. Construction and use of plain and diagonal scales. Bisection and copying of angles. Construction of angles in multiples of 15 degrees.

The circle, its properties and parts. Circumscribed and inscribed circles. Tangents to a circle, and arc of a circle, from a point outside, and from a point on the circumference. Tangential curves, involving the finding of centres.

Construction of plane figures—triangles, quadrilaterals, regular and irregular polygons.

Construction of the ellipse. Focal points. Tangent and normal to the ellipse.

Proportional linear reduction and enlargement of plane figures.

The oblique line, true length.

Loci, simple link mechanisms. The helix.

Sections and true shapes, at set square angles only.

Developments—right prisms, square, hexagonal and octagonal pyramids, right cylinders and cones.

Intersection of surfaces of rectangular solids.

Isometric and oblique projections, including simple curves.

Isometric scale will *not* be used.

Paper II

Orthographic projection in both first and third angle, including sectional views parallel to the main planes of projection.

Preparation of working drawings from sketches and/or photographs.

Dimensions and title block data.

Detailed working drawings of components taken from assembled views.

Assembled working drawings produced from given detailed drawings of component parts.

Either a knowledge of common woodwork joints—frame, table and carcase construction; *or* conventional representation of nuts, bolts, studs, set-screws, and washers. Screw threads and their uses. Scales, twice full size, full size, half and quarter full size only to be used.

It is emphasised that candidates will be given the opportunity to show ability in freehand sketching both in orthographic and pictorial projection.

EXAMINATION B

The aim of the examination is to assess the candidates' ability to think in three dimensions, and understand the conventions and mathematical basis of the subject.

The examination will consist of two written papers, each of 2 hours' duration.

Paper I will be based on Part I of the syllabus below. Candidates will be required to answer about four questions from a reasonable range of choice.

Paper II will be based on Part II of the syllabus, and will consist of at least six questions. Candidates will answer *either* Question 1, which will have a Metalwork bias, *or* Question 2, which will have a Woodwork bias, and any two other questions.

Course Work will be submitted for assessment on work done during the three terms preceding the examination.

The current relevant British Standards must be observed throughout the examination.

Marks will be allotted as follows:—

Paper I: 40%. Paper II: 40%. Course Work: 20%.

SYLLABUS

Paper I

Plane geometry: division of a line, plain and diagonal scales. Construction of simple plane figures including the ellipse. Elementary loci.

Parts of a circle and construction through three points; to touch two other circles; to touch two converging lines. Inscribed and circumscribed circles.

Tangency—to a circle; from a point; exterior and interior tangents.

Solid geometry: Solids (prism, pyramid, cylinder, cone) parallel to or inclined to the plane of projection.

Sections of solids with section plane inclined to one plane of projection only.

Development of cylinder, cone, hexagonal prism, including examples cut by section plane.

Simple isometric projection and/or oblique projection involving rectangular or circular objects, but with the circle parallel to the horizontal or vertical planes only. These pictorial projections will not include the isometric scale nor the ellipse. Intersections of solids are not required.

Paper II

Orthographic projection of simple articles or components which are likely to be within the experience of most candidates.

Sections parallel to the vertical or horizontal planes only.

Sections to be full or part. First or third angle projection to be included and questions framed to allow for interpretation in either.

Freehand sketching, not necessarily from memory, will be required. A wide choice of objects, within the range of candidates' knowledge, will be given.

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