

UNIVERSAL
LIBRARY

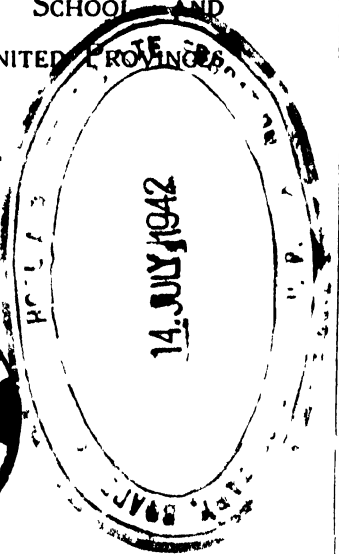
OU_174392

UNIVERSAL
LIBRARY

Prospectus of
**The Arts, Science, Commerce,
Agriculture, Music and Military
Science Examinations**

OF THE BOARD OF HIGH SCHOOL AND
INTERMEDIATE EDUCATION, UNITED PROVINCES

for 1944



Published under the Authority of the Board of High
School and Intermediate Education, United Provinces,
Allahabad, and printed by the Superintendent,
Printing and Stationery, United Provinces,

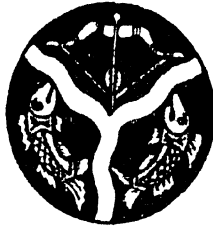
1942

Price, 8 annas

Prospectus of
The Arts, Science, Commerce,
Agriculture, Music and Military
Science Examinations

OF THE BOARD OF HIGH SCHOOL AND
INTERMEDIATE EDUCATION, UNITED PROVINCES

for 1944



Published under the Authority of the Board of High
School and Intermediate Education, United Provinces,
Allahabad, and printed by the Superintendent,
Printing and Stationery, United Provinces,

1 9 4 2

COPIES of this Prospectus will be supplied free to all Government institutions recognized for the Board's examinations. by the Superintendent, Printing and Stationery, United Provinces, Allahabad, direct. Copies will also be available for sale to other institutions and to the public at the Book Depot of the Government Central Press, Allahabad, at eight annas per copy. excluding postage, etc.

CONTENTS

Prospectus

	<i>Pages</i>
1. Regulations—Examinations in general, Chapter XII	1-13
2. Regulations—High School Examination, Chapter XIII	14-17
3. Regulations—Diploma Examination in Indian Music, Chapter XIII(a) ..	17-18
4. Regulations—Intermediate Examination, Chapter XIV	18-25
5. Regulations—Examination for Certificate in Military Science, Chapter XIV(a)	25-26
6. Regulations—Intermediate Examination in Commerce, Chapter XV ..	26-27
7. Regulations—Intermediate Examination in Agriculture, Chapter XV(a)	27-28
8. Maximum and minimum marks assigned to the various subjects ..	29
Courses for the High School Examination in:—	
9. English	31-33
10. Mathematics	34-39
11. History	40-46
12. Geography	47-49
13. Elementary Civics	50-51
14. Modern Indian Languages :—	
(a) Hindi	52-54
(b) Urdu	55-56
(c) Bengali	57-58
(d) Marathi	59
(e) Gujarati	60
15. Classical Languages :—	
(a) Sanskrit	61-63
(b) Arabic	64-67
(c) Persian	68-75
(d) Latin	76
16. Commerce	77-78
17. Science (Physics and Chemistry) :—	
Physics	79-81
Chemistry	82-84
18. Agriculture	85-88
19. Drawing	89-90
20. Manual Training	91-94
21. Modern European Language—French	95
22. Domestic Science	96-101
23. Metal Work	102
24. History or Geography	103
25. Book-binding	104-106

	<i>Pages</i>
26. Spinning and Weaving	107-109
27. General Science (Physics, Chemistry and Biology)	110-116
28. Indian Music—Vocal and Instrumental	117
29. Rural Economics, Co-operation and Economic Geography of India	118-120
30. Physical Training (for girls)	121
Courses for the Diploma Examination in :—	
31. Indian Music	122-125
Courses for the Intermediate Examination in :—	
32. Grouping of subjects for the guidance of students and teachers	126-127
33. English	128-130
34. Mathematics	131-132
35. Chemistry	133-136
36. Physics	137-140
37. Biology	141-148
38. Drawing	149-150
39. Economics	151-155
40. Civics	156-158
41. History and Allied Geography	159-160
42. Histories of Greece and Rome and Allied Geography	161
43. Geography	162-165
44. Deductive Logic and Inductive Logic	166-167
45. Deductive Logic and Elementary Psychology	168
46. Elementary Psychology and Educational Psychology	169-170
47. Modern Indian Languages :—	
(a) Hindi	171-173
(b) Urdu	174-177
(c) Bengali	178-179
(d) Marathi	180
(e) Gujarati	181
48. Modern European Language—French	182
49. Classical Languages :—	
(a) Sanskrit	183-185
(b) Arabic	186
(c) Persian	187-189
(d) Latin	190
(e) Greek	191
(f) Hebrew	192
50. Physiology, Hygiene and Elementary Psychology	193-195
51. Indian Music (for girls only and as an additional optional non-examination subject for boys)	196-198
52. Physical Training (for girls)	199
Courses for the Examination for Certificate in :—	
53. Military Science	200

Courses for the Intermediate Examination in Commerce :—

54.	Subjects of examination, number and length of papers and maximum and minimum marks	201-202
55.	English	202
56.	Book-keeping and Accountancy	202-203
57.	Business Methods	203-204
58.	Correspondence	204
59.	Elementary Economics	204-205
60.	Commercial Geography	205
61.	Typewriting	205-206
62.	Shorthand	206
63.	Elements of Banking	206-207
64.	Elements of Industrial Organization	207-208
65.	Mathematics	209

Courses for the Intermediate Examination in Agriculture :—

66.	Grouping of subjects	210-211
67.	Chemistry (Group I)	211-214
68.	Physics (Group I)	214-216
69.	Biology (Group II)	217-221
70.	Elements of Soil Science (Group III)	221-223
71.	Practical Farming (Group III)	224-226
72.	English (Group IV)	227
73.	Economics (Group V)	227-229
74.	Mathematics (Group V)	229-230

EXAMINATIONS IN ARTS, SCIENCE, COMMERCE, AGRICULTURE, MUSIC, AND MILITARY SCIENCE.

CHAPTERS XII TO XV(a) OF THE BOARD'S REGULATIONS

N B.—These regulations are subject to amendment from time to time as the Board may determine. Notice of such amendments will be given in the *Gazette*.

CHAPTER XII

EXAMINATIONS

General Rules

1. The Board shall conduct the following examinations :—

- (a) The High School Examination.
- (b) The Intermediate Examination.
- (c) The Intermediate Examination in Commerce.
- (d) The Intermediate Examination in Agriculture.
- (e) The Diploma Examination in Indian Music at the end of the High School course.
- (f) Examination for Certificate in Military Science.

2. The Board's examinations shall be held at such centres and on such dates and at such times as the Board may from time to time appoint.

3. The tests at the Board's examinations may be partly oral or practical and partly written. Oral and practical tests shall be carried out by examiners appointed by the Board in such manner as the Examinations' Committee may prescribe from time to time. Written tests shall be by means of question papers, and the question papers shall be given out simultaneously at every centre at which the examination is being held.

4. Every candidate sent up by a recognized institution for admission to an examination held by the Board shall, not later than the seventh of January each year,—

- (a) pay the fee prescribed for the examination,
- (b) state the optional subject or subjects in which he desires to present himself for examination, and

(c) furnish the Secretary with a certificate showing—

- (i) that he has completed a regular course of study* in a recognized institution ;
- (ii) *Cancelled* ;
- (iii) (for **Science candidates of the High School Examination only) that he has actually performed the experiments laid down in the syllabus.

*Regulation 4, Chapter XVII—

†For the purposes of a regular course of study, the minimum number of meetings of a class that must be held in preparation for any of the Board's examinations shall be as follows :

(1) The minimum number of days that recognized institutions including classes XI and XII shall be open shall be 180 ; for other recognized institutions the minimum shall be 200.

(2) No candidate shall be presented for the High School Examination by a recognized institution unless he has been present in classes IX and X for at least 75 per cent. of the days the institution was open during two academical years.

(3) No candidate shall be presented for the Intermediate Examination by a recognized institution unless he has attended at least 75 per cent. of the lectures and practical work (if any) given in each subject in which the candidate is to be examined at the institution during two academical years.

(4) In the case of failed and detained candidates the percentage shall be calculated for one academical year only. The attendance put in during the last academical year shall be calculated.

(5) The head of a recognized institution may condone a deficiency of not more than (i) six days in the case of a candidate for the High School Examination and (ii) six lectures in each subject for the Intermediate Examination. All cases in which this privilege is exercised shall be reported to the Board.

(6) The Board may in very special cases, condone a deficiency of not more than (i) nine days in the case of a candidate for the High School Examination, and (ii) nine lectures in each subject in the case of a candidate for the Intermediate Examination.

†The following footnotes are appended to the above Regulation :

“(a) The minimum number referred to in clause (1) applies to the institution as a whole and not to attendance in class X or class XII separately (*vide* paragraph 16 of the minutes of the meeting of the Board held on the 30th November and 1st December, 1923).

(b) The two academical years referred to in clauses (2) and (3) need not be consecutive (*vide* resolution 20 of the meeting of the Examination's Committee held on the 25th January, 1929, adopted by the Board). It is left to the discretion of the heads of institutions to take into account the attendance of any one year in the case of a candidate who has attended class IX for more than one year along with his attendance in class X (*vide* resolution 22 of the meeting of the Examinations' Committee held on the 28th January, 1930, adopted by the Board, and resolution 6 of the meeting of the Examinations' Committee held on the 20th September, 1930, adopted by the Board).

(c) The term "detained" referred to in clause (4) means detained for any cause either in class X or class XII (*vide* resolution 20 of the meeting of the Examinations' Committee held on the 25th January, 1929, adopted by the Board).

(d) Students who are allowed to attend camps of the University Training Corps or the territorial army or to join team games, scout rallies or educational excursions may be considered as present. The High School or the Intermediate course being a two years' course in each subject, a change of subjects in class X or XII is not ordinarily permissible but in exceptional cases heads of institutions may permit a change of subjects and such cases should be reported to the Board with reasons [*vide* resolution 10(11) (1) of the Board, dated the 10th November, 1932]. Permission to change more than one subject should be *very sparingly* granted. The attendance put in by a candidate in a subject which he subsequently changes with the permission of his head master or principal should be counted along with the attendance in the new subject for purposes of calculating his percentage of attendance in the new subject (*vide* resolution 5 of the Examinations' Committee, dated the 14th March, 1933). If a student wants to change his courses of study from one examination to another, the head of an institution may allow him to do so up to 30th September in class XI only, and the attendance put in by the candidate in the old subjects should be counted along with the attendance in the new subjects, the average attendance in the five subjects for the Intermediate Examination in Commerce or Agriculture to be taken for the four subjects for the Intermediate Examination.

(e) The attendance put in by a student at an institution outside the jurisdiction of the United Provinces Board in preparation for an examination which is recognized as equivalent to the Board's High School Examination should count along with that which he will put in at the United Provinces school to which he is subsequently admitted for purposes of completing a regular course of study for two academical years in preparation for the High School Examination (*vide* resolution 7 of the Examination's Committee, dated the 20th September, 1930, adopted by the Board).

(f) The first academical year in the case of a candidate who is declared successful at the High School Examination as a result of scrutiny of marks and who prior to the announcement of the result joined class X of a High School, should be taken to commence ten days subsequent to the publication of the result of the scrutiny in the *Gazette* (*vide* resolution 3 of the Examinations' Committee, dated the 14th March, 1933, and Board's resolution 18, dated the 8th November, 1933).

(g) Any student who has kept any part of the session at a college affiliated to or recognized by any of the bodies named in Regulation 4, Chapter XIV, may be admitted to a college recognized by the Board and the lectures attended by him at that college should count along with that he will put in at the United Provinces college for purposes of completing a regular course of study, provided the conditions laid down in Regulation 4, Chapter XIV are fulfilled (*vide* resolution 11 of the Examinations' Committee, dated the 22nd April, 1939, sanctioned by the Chairman of the Board on 22nd November, 1939).

(h) In the case of girls who have passed the Vernacular Upper Middle Examination for Girls conducted by the Department and intend to appear at the High School Examination in English only as regular students under Regulation 7, Chapter XIII, the percentage of attendance should be calculated for one academical year only (*vide* resolution 43 of the Examinations' Committee, dated the 27th August, 1939, sanctioned by the Chairman of the Board on 22nd November, 1939).

**The term "Science" includes General Science.

5. The following fees shall be paid in respect of the examinations held by the Board :

- | | |
|---|--|
| (1) High School Examination | Rupees 15 by each candidate from a recognized institution. |
| (2) Ditto .. | Rupees 20 by each private candidate. |
| (3) Intermediate Examination | Rupees 25 by each candidate from a recognized institution. |
| (4) Ditto .. | Rupees 30 by private candidates. |
| (5) Intermediate Examination in Commerce. | Rupees 25 by each candidate from a recognized institution. |
| (6) Ditto .. | Rupees 30 by private candidates. |
| (7) Intermediate Examination in Agriculture. | Rupees 25 by each candidate from a recognized institution and Rs.30 by each private candidate (if any) |
| (8) Examination in one subject only. | Rupees 5. |
| (9) Examination in more than one subject. | Rupees 5 for each subject. |
| (10) *Fee for checking the results of candidates. | Rupees 10 per candidate. |

* The following rules for the scrutiny of marks and the checking of the results of candidates have been made by the Board (*vide* Appendix 1 to the report of the meeting of the Examinations' Committee held on 23rd February, 1923, adopted by the Board and paragraph 2 of the minutes of the meeting of the Board held on the 4th February, 1939):

1. Any candidate who has appeared at an examination conducted by the Board may apply direct to the Secretary for the scrutiny of his marks and the re-checking of his result.
2. Such applications must be made within six weeks from the date of the publication of the result (*vide* resolution 43 of the Examinations' Committee, dated the 7th October, 1931, and resolution 25 of the Board, dated the 5th November, 1931).
3. All such applications must be accompanied by a copy of the treasury chalan showing that the prescribed fee of Rs.10 has been paid. In the case of candidates belonging to Indian States this fee must be sent in cash to the office of the Secretary.
4. No candidate shall be entitled to a refund of the fee unless as a result of the scrutiny a mistake affecting his examination result as published in the *Gazette* is detected.
5. If on scrutiny and re-checking a mistake in the result as originally published in the *Gazette* is detected the result of the scrutiny shall be at once published in the *Gazette* in a supplementary list. In all other cases the result of the scrutiny shall be communicated direct to the candidate as soon as possible.
6. The work of scrutiny does not include re-examination of the answer-books of a candidate. It consists of re-checking the marks entered in the answer-books with a view to seeing whether there has been any mistake in totalling the marks assigned to individual questions or in the form of omitting the marks assigned to any question [*vide* resolution 16 of the meeting of the Examinations' Committee held on 8th November, 1928, and resolution 31(c) of the meeting of the Board held on 9th November, 1928].
7. This scrutiny shall be done in the manner prescribed by the Board from time to time.

- (11) *Fee for communicating the total marks in each subject obtained by a candidate at an examination. Rupees 2 per candidate.
- (12) Diploma Examination in Indian Music. Rupees 10 by each candidate from a recognized institution and Rs.15 by each private candidate.
- (13) Examination for Certificate in Military Science. Rupees 5 per candidate.
- (14) †Fee for changing the name in the certificate or diploma issued by the Board to a candidate for an examination. Rupees 2 per candidate.

* The following rules for the communication of marks have been approved by the Board (vide paragraph 6 of the report of the meeting of the Examinations' Committee held on 10th February, 1927, adopted by the Board):

- (1) Only the total marks in each subject obtained by a candidate at an examination will be communicated.
- (2) Any candidate desiring to know the total marks in each subject obtained by him in an examination held by the Board shall send an application direct to the Secretary not later than six months ordinarily after the publication of the results in the *United Provinces Government Gazette* (vide resolution 43 of the Examinations' Committee, dated the 24th October, 1932, and resolution 25 of the Board, dated the 10th November, 1932).
- (3) A candidate who has passed the High School Examination with Commerce (Typewriting) as an optional subject and intends to sit for an examination conducted by the Public Service Commission may apply direct to the Secretary by the above date for a certificate showing (i) the maximum marks in the Typewriting paper, (ii) the marks secured by him in the said paper and (iii) the percentage which the latter bears to the maximum. The fee for this special certificate is Rs 2 (vide Examinations' Committee's resolution 12, dated the 28th July, 1936, and Board's resolution 41, dated the 17th November, 1936).
- (4) All such applications must be accompanied by a copy of the treasury chalan showing that the prescribed fee of Rs.2 has been paid. In the case of candidates belonging to Indian States this fee must be sent by money order to the Secretary.

N.B.—Fees sent by money order by candidates residing in the United Provinces will not be accepted.

- (5) No refund of the fee shall be allowed.
- (6) Each application should furnish necessary information on each of the following particulars :
 - (a) The name and year of the examination.
 - (b) The name of the candidate.
 - (c) His roll number.
 - (d) The name of his college, or the district of which he was a resident.
 - (e) The name of his examination centre.
 - (f) The subjects offered.

†NOTE—The application should be made through the proper channel and reach the office of the Secretary within one year from the date of the issue of the certificate or diploma.

* Provided that women candidates may pay fees for the High School or the Intermediate Examination at half the rates prescribed :

Provided, further, that in the case of the candidates referred to in Regulation 3(a), Chapter XIV, the fee shall be paid in two instalments, first instalment of Rs.5 and the second instalment of Rs.7-8.

6. †A candidate who fails to pass or who from sickness or other sufficient cause is unable to present himself for any examination, shall not receive a refund of his fee :

Provided the Board may, on application, admit a candidate who was unable to present himself for any examination to the next ensuing examination without payment of a further fee :

Provided also that the fee may not be held over for the next ensuing examination in the case of a candidate who absented himself from a part of the examination.

7. The Secretary shall, after satisfying himself that a candidate has complied with all the requirements for admission to an examination of the Board, furnish the candidate with a card of admission, on presentation of which to the local superintendent of the examination, the candidate shall be permitted to sit for the examination.

8. Notwithstanding anything contained in these Regulations, no candidate who is undergoing rustication at the time of submission of his application form or during the period of examination or who was expelled during the academical year just preceding the date of the examination at which he intends to appear shall be admitted to the examination.

* The proviso applies to the fees prescribed for all the examinations that are mentioned in the regulation, but *not* to the fees prescribed for checking the results of candidates or for communicating the total marks in each subject obtained by a candidate at an examination (*vide* resolution 5 of the Examinations' Committee, dated the 12th January, 1931. adopted by the Board).

† The last date for receiving applications from candidates for the holding over of their examination fees for the Board's examinations under the first proviso to Regulation 6, Chapter XII, is 15th July of the year of the examination for which the fees were paid. These applications should be recommended by the forwarding officers. Applications received after this date will in no circumstances be entertained [*vide* resolution 22 (B) of the Examinations' Committee, dated the 6th November, 1937, adopted by the Board, and resolution 12 of the Examinations' Committee, dated the 12th January, 1938, adopted by the Board].

9. The Secretary, if satisfied that a candidate's admission card has been lost or destroyed, may grant a duplicate card on payment of a further fee of Rs.2.

10. Private candidates* shall be eligible to appear at the Board's examinations on the conditions hereinafter laid down.

* The following rules for the admission of private candidates to the Board's examinations have been approved by the Board (*vide* Board's resolution 22, dated the 8th November, 1924):

1. Permission to appear as private candidates will be given to candidates who have appeared at a previous High School or Intermediate Examination and have failed or to whom permission to appear as private candidates has been given by the Board on a previous occasion or to such candidates as may be found to have fulfilled the conditions laid down in the regulations.

2. Permission to appear as private candidates at the next ensuing High School or Intermediate Examination will not be granted to candidates who have failed to obtain promotion to the highest class of any High School or Intermediate College (i.e. to those who have been detained in class IX or XI or have attended class IX or XI in a recognized institution beyond the end of the first term, that is, beyond December).

3. (a) Private candidates may change their subjects of examination from those previously offered by them, if more than one year has elapsed since their last appearance at the examination; they will not be required to give any reasons for the change.

(b) Private candidates who appeared and failed at an examination immediately prior to the submission of their application and desire to offer for the next examination subjects other than those previously offered must give an adequate explanation of the change and show that they can satisfactorily complete the course of study in the new subjects.

4. Candidates residing outside the present territorial jurisdiction of the Board may be permitted to appear at the Board's examinations as private candidates on the following conditions.

(a) If they are still permanent residents of the United Provinces and have temporarily migrated to other provinces due to the employment of their guardians or other adequate reasons, in such a case the application form should be forwarded by the Divisional Inspector of Schools concerned, who should testify to the candidate's *bona fide* residence in the United Provinces.

(b) If they have been residing in the United Provinces for at least two years (exclusive of stay in a residential institution as a boarder) at the time of submitting the application; in such a case the application should be forwarded by the Circle Inspector of Schools concerned in the United Provinces, provided that the applications of candidates whose guardians have been transferred to the United Provinces may be considered on their merits.

5. Where an age-limit or other restriction is imposed by the local University or Examining Body, such restriction shall be rigorously enforced before permission to appear as private candidates at the Board's examinations is granted to outside candidates.

6. Residents of places beyond the territorial jurisdiction of the Board who have appeared and failed at an examination conducted by the Board or its predecessors may be allowed to appear as private candidates at a subsequent corresponding examination, notwithstanding anything contained in rules 4 and 5 foregoing. Rules 4 and 5 will, however, apply to residents of such places who have passed any examination conducted by the Board or its predecessors and desire to appear for the first time at a higher examination conducted by the Board.

7. Private candidates shall not be allowed to offer for their examination any subject except Marathi and Gujrati even if the subject is recognized for the examination which is not being taught in a recognized institution or in which no institution is recognized (*vide* Board's resolution 34(b), dated the 6th and 7th November, 1925).

† The decision of the head of a recognized institution regarding the promotion of students from class IX to class X or from class XI to class XII shall be final on the 1st June of each year. In the case of those hill institutions that observe winter vacation the question of the promotion of students shall be finally decided by the end of June each year. Candidates failed by them in the promotion examination of classes IX and XI shall not be admitted as private candidates to the next ensuing High School or Intermediate Examination respectively.

11. A candidate who desires to offer himself for examination as a private candidate shall, not later than the 1st of October preceding the date fixed for the next ensuing examination, send in an application together with the fee prescribed for the examination, to the Secretary, through the Inspector of Schools of his division or the head* of the recognized† institution at which he last studied or the Chief Educational Officer of the Indian State where he resides. In the case of a female candidate the application may be forwarded by the

8. Private candidates who have passed the Cambridge School Certificate Examination and intend to appear at the Intermediate Examination should specify in the application form the standard of attainment in each of the subjects in which they have passed Cambridge School Certificate Examination as shown in the detailed result of the examination (*vide* Private Candidates Committee's resolution 7, dated the 3rd October, 1925)

9. Permission to appear as private candidates at the High School Examination shall not be given to candidates who have passed the examinations noted below until the period noted against each has elapsed since the date of their passing the examination :

- (a) Vernacular Final Examination for boys with English as an optional subject—Three years.
- (b) Vernacular Final Examination for boys without English as an optional subject—Four years.
- (c) Vernacular Upper Middle Examination for girls—Two years.
- (d) Vernacular Lower Middle Examination for girls—Four years.
- (e) Anglo-Vernacular Middle Examination for girls—Three years.

Any students who have left an English School at a stage earlier than the High School stage shall not be permitted to appear at the High School Examination as private candidates in a year earlier than that in which they would have appeared if they had continued their studies at a recognized institution up to the High School Examination.

A student who has left a recognized European School may be permitted to appear at the High School Examination as a private candidate if he would have reached standard IX in the year his application is submitted had he continued at a recognized European School (paragraph 2 of the Private Candidates Committee's report, dated the 29th October and 2nd and 3rd November, 1936, Examinations' Committee's resolution 17, dated the 12th November, 1936 and Board's resolution 43, dated the 17th November, 1936).

10. All applications from intending private candidates should reach the office of the forwarding officer not later than 1st September preceding the date fixed for the next ensuing examination (*vide* resolution 5 of the meeting of the Private Candidates' Committee held on 17th—20th October and 1st November, 1928, and resolution 33 of the meeting of the Board held on 9th November, 1928 and para 40 of the Examinations' Committee's report dated the 3rd January, 1942 and resolution 8 of the Board dated the 9th February, 1942) The Officer forwarding the application of a private candidate may charge from the candidate not more than annas eight for sending by post his application to the Secretary. In no case should the application be returned to a private candidate by the forwarding officer after he has countersigned it. (Examinations' Committee's resolution 3, dated the 12th November, 1936 and Board's resolution 43, dated the 17th November, 1936.)

11. A candidate who intends to appear as a private candidate simultaneously at any of the Board's Examinations and at an equivalent examination conducted by another body is not permitted to appear at the Board's examination.

12. A candidate who is found guilty of having concealed any facts in his application form or made any false statements therein, will be debarred from appearing at the Examination for two years.

*The head of a High School recognized by the Board is competent to forward direct to the Secretary the application of a private candidate for permission to appear at the Intermediate Examination who last studied at his school.

†The term "recognized institution" means institution recognized by the Board.

head of any institution recognized by the Board. The application should be made in the prescribed form and should set forth—

- (a) his age at the time of the application ; in the case of a candidate for the High School Examination who has never attended any institution a declaration by his parents or guardians in support of his age as entered in the application should be furnished along with the application ;
- (b) the conditions under which he has been studying and is proposing to continue his studies ;
- (c) the optional* subject or subjects which he offers, provided that no practical work or practical examination is prescribed for the subject or subjects so offered , provided, further, that a private candidate may be allowed to take Economics as one of his optional subjects for the Intermediate Examination on the condition that he produces a certificate from a teacher of Economics of a recognized

* The following subjects prescribed for the Board's examinations should be deemed subjects which involve practical work or a practical examination for purposes of this regulation and Regulations 14(a) and 17 :

High School Examination

- | | |
|--|--|
| <p>(1) Physics and Chemistry (except for such private candidates as are referred to in the third proviso to Regulation 17).</p> <p>(2) Agriculture (except for such private candidates as are referred to in the third proviso to Regulation 17).</p> <p>(3) Manual Training (except for such private candidates as are referred to in the last proviso to Regulation 17).</p> | <p>(4) Metal Work.</p> <p>(5) General Science (except for such private candidates as are referred to in the third proviso to Regulation 17).</p> <p>(6) Spinning and Weaving (except for such private candidates as are referred to in the last proviso to Regulation 17).</p> <p>(7) Book-binding (except for such private candidates as are referred to in the last proviso to Regulation 17).</p> |
|--|--|

Intermediate Examination

- | | |
|---|---|
| <p>(1) Chemistry (except for such private candidates as are referred to in the third proviso to Regulation 17).</p> <p>(2) Physics (except for such private candidates as are referred to in the third proviso to Regulation 17).</p> | <p>(3) Biology (except for such private candidates as are referred to in the third proviso to Regulation 17).</p> |
|---|---|

Intermediate Examination in Commerce

Nil

Intermediate Examination in Agriculture

All subjects *except* English.

college showing that he has done[—] during the year preceding the examination under the teacher's supervision the practical and written work prescribed in Economics.

He should also forward the original copy of the scholar's register granted to him by the institution, if any, at which he last studied.

12. Such applications from intending private candidates shall be referred to the Sub-Committee appointed under Regulation 2, Chapter VI, to scrutinize applications from private candidates.

13. Such applications, after being scrutinized by the Sub-Committee, shall either be granted or rejected by it. The examination fee paid less rupee one shall be refunded to the candidate whose application is rejected.

14. Notwithstanding the definition† of "Private candidate" contained in clause (10), Chapter I, any woman candidate, who is not studying at a recognized institution, may be admitted by the Sub-Committee referred to in Regulation 12 above as a private candidate to any of the Board's examinations, provided she fulfils the other conditions governing the admission of private candidates to the examinations conducted by the Board.

*14(a). Notwithstanding anything contained in these Regulations, a student who has passed the High School or an equivalent Examination and is studying in an Intermediate class of a college recognized by the Board may be permitted to appear as a private candidate at the High School Examination of the Board in a single subject not involving practical work or a practical examination, and similar permission may be given to a student who has passed the Intermediate Examination and is studying for a higher examination to go up for the High School or the Intermediate Examination in a single subject not involving practical work or a practical examination.

†Clause (10), Chapter I—

"Private candidate" means a candidate for admission to an examination conducted by the Board who has not, during any part of the session preceding the examination, studied at an educational institution§ of any kind.

§ Includes unrecognized institutions and coaching classes.

* Students reading in class XII are not allowed to avail themselves of the concession ven in Regulation 14(a), Chapter XII. Candidates who have passed the High School or Intermediate Examination, but are not reading in a recognized institution or at a University may also avail themselves of the concession given in Regulation 14(a), Chapter XII [vide resolutions 10(I) and (III) of the Board, dated the 10th November, 1932].

14(b). Notwithstanding anything contained in these Regulations, no male married* candidates, except those who are married before 1st July, 1929, or who are at the time of marriage not less than eighteen years of age, shall be admitted from any institution recognized by the Board to the High School Examination after the examination of 1930. Such candidates may apply for permission to appear as private candidates only at the High School Examination with effect from the examination of 1931.

14(c). Notwithstanding anything contained in these Regulations girls may be permitted to appear either as regular students or as private candidates at the High School Examination with Science or General Science as an optional subject, provided they produce a certificate from the head of an institution recognized in that subject showing that they have done in the laboratory of that institution the practical work prescribed in the subject in the Prospectus during or out of school hours.

14(d). Notwithstanding anything contained in these Regulations, any regular students going up for the High School or Intermediate Examination may be permitted to appear in the same year as private candidates at the Diploma Examination in Indian Music.

15. Except when otherwise provided in these Regulations, the names of candidates who have passed an examination of the Board shall be placed in three divisions, and further, the names of students from recognized institutions shall be grouped according to the institutions in which they have studied.

16. A candidate who has failed in an examination may present himself for one or more subsequent examinations, provided that he shall on each and every such occasion satisfy the Secretary that he has fulfilled the conditions laid down in the Regulations for the admission of candidates to the Board's examinations.

17. A candidate who has failed in an examination may be admitted to a subsequent examination without attending a regular course of study in a recognized institution, provided—

(a) that he has not pursued his studies at an educational institution† of any kind ;

*“ Marriage ” within the meaning of this Regulation means what in Hindustani is called *Shadi*, *Biyah*, or *Nikah* and not *Garna* or *Rukhsati*.

† Includes unrecognized institutions and coaching classes.

(b) that, not later than the 1st of October preceding the date fixed for the next ensuing examination, he sends an application together with the fee prescribed for the examination to the Secretary through and recommended by the head of the institution at which he last studied, in the prescribed form, setting out—

- (i) the conditions under which he has been studying and is now proposing to continue his studies ;
- (ii) the dates of his failing in the examination :

provided, further, that this Regulation shall not apply to candidates who have taken* a subject or subjects for which practical work or a practical examination is prescribed :

provided, that private candidates may be allowed to take Science or General Science or Agriculture as an optional subject for the High School Examination or one or more of the Science subjects Chemistry, Physics, and Biology as optional subjects for the Intermediate Examination on the following conditions :

- (a) that they have studied the subject or subjects as regular students at a recognized institution and failed at the examination of a previous year ;
- (b) that they produce a certificate showing that they have done in the laboratory of a recognized institution the practical work prescribed in the subject or subjects in the Prospectus during the year preceding the examination at which they intend to re-appear, notwithstanding clause (a) of the first proviso foregoing ;
- †(c) that they had passed in the Science subject or subjects at their last appearance for the examination :

provided, lastly, that private candidates may be allowed to take Manual Training or Spinning and Weaving or Book-binding as an optional subject for the High School Examination on the following conditions :

- (a) that they have studied the subject as regular students at a recognized institution and failed at the examination of a previous year ;

* See the footnote to Regulation 11(c), Chapter XII.

†The expression " Science subject " occurring in clause (c) to the third proviso to Regulation 17, Chapter XII includes " Agriculture " (*vide* resolution 48 of the Examinations' Committee, dated the 27th August, 1939, sanctioned by the Charman of the Board on 22nd November, 1939).

(b) that they produce a certificate showing that they have done at a recognized institution the practical work prescribed in the subject in the Prospectus during the year preceding the examination at which they intend to re-appear, notwithstanding clause (a) of the first proviso foregoing.

18. *Any candidate who has obtained 40 per cent. of the aggregate number of marks, but has failed in one subject only, obtaining not less than 25 per cent. in that subject, shall be admitted to a subsequent examination in the subject in which he failed on payment of the fee prescribed in these Regulations; and if he passes in that subject he shall be deemed to have passed the examination.

18(a). The answer-books of candidates who are eligible for the compartmental examination under Regulation 18, Chapter XII, as well as of those who have failed in one subject only by not more than five per cent. of the marks assigned to that subject, shall be scrutinized in accordance with the rules framed by the Board.

19. †Heads of recognized institutions are not permitted to detain candidates who have fulfilled the conditions laid down for permission to appear at one of the Board's examinations except for very unsatisfactory work or some other grave reasons, provided that detention under this Regulation shall not exceed 10 per cent. of the total strength of the class.

* Compartmental candidates have the option of appearing at the examination as private candidates, provided they have not pursued their studies at an educational institution of any kind during the session preceding the examination at which they intend to appear and subject to the restrictions laid down in the provisos to Regulation 17, Chapter XII.

A failed candidate who is declared eligible for the Compartmental Examination after he had joined class X or XII as a result of scrutiny of marks may appear at the examination as a private candidate notwithstanding the restriction contained in clause (10), Chapter I [*vide* Examinations' Committee's resolution 30, dated the 5th October, 1936 and Board's resolution 42 (b), dated the 17th November, 1936].

Compartmental candidates are not eligible for admission to class XI of a recognized Intermediate College unless and until they have passed *completely* the High School Examination under Regulation 2, Chapter XIII (*vide* Examinations' Committee's resolution 9, dated the 6th February, 1925, adopted by the Board and Examinations' Committee's resolution 9, dated the 5th November, 1930, adopted by the Board).

The prescribed fee for admission to the compartmental examination is Rs.5.

Failed candidates may have two chances of re-appearing at the compartmental examination in two consecutive years immediately following the year in which they appeared at the full examination and were declared eligible for the compartmental examination (*vide* Board's resolution 28, dated the 6th and 7th November, 1925, and paragraph 42 of the report of the meeting of the Examinations' Committee held on 9th November, 1927, adopted by the Board).

† Heads of recognized institutions may exercise their power of detaining students up to three weeks before the commencement of the examination (*vide* resolution 4 of the Examinations' Committee, dated the 14th March, 1933, and Board's resolution 18, dated the 8th November, 1933).

CHAPTER XIII.

HIGH SCHOOL EXAMINATION.

1. The following are the subjects prescribed for the High School Examination of the Board :—

Compulsory.

- (1) English.
- (2) Mathematics.
- (3) History and Elementary Civics or Geography and Elementary Civics.
- (4) One of the following Modern Indian Languages :
Hindi, Urdu, Bengali, Marathi, and Gujarati.

Optional.

- (1) One of the following Classical Languages :
Sanskrit, Arabic, Persian, and Latin.
- (2) Commerce.
- (3) Physics and Chemistry.
- (4) Agriculture.
- (5) Drawing.
- (6) Manual Training.
- (7) A Modern European Language.
- (8) Domestic Science.
- (9) Metal Work.
- (10) *History or Geography.
- (11) Book-binding.
- (12) Spinning and Weaving.
- (13) General Science (Physics, Chemistry, and Biology).
- (14) †Indian Music—Vocal.
- (15) Indian Music—Instrumental.
- (16) Rural Economics, Co-operation and Economic Geography of India.

N.B.—Candidates must take up one optional subject for examination, and candidate will be examined in more than one such subject, in addition to the compulsory subjects, at one and the same examination ; provided that a candidate who passed the High School Examination or an examination equivalent thereto may ap

* A candidate taking History or Geography as a compulsory subject must not take the same subject as an optional subject.

†Vocal Music involves the accompaniment of an instrument for keeping time though it is not necessary that the candidate should himself acquire a knowledge of playing an instrument. A candidate who has passed the High School Examination may under the footnote to Regulation 1, Chapter XIII offer both vocal and instrumental music in one and the same year. He will be required to pay double the

at a subsequent High School Examination in one or more subjects, compulsory or optional, in which he has not previously passed the High School Examination; and such a candidate shall, if successful, be entitled to a certificate of having passed the examination in the additional optional subject or subjects offered by him.

2. A candidate is not entitled to a certificate of having passed the High School Examination unless he qualifies separately in each subject offered by him thereat.

3. Diaries shall be kept by all teachers employed in teaching classes preparing for the High School Examination showing the work done in class in each subject taught by them, and such diaries shall be inspected by the oral or practical examiners or by such other authorities as the Board may depute.

4. The question papers set and the written answer-books of all candidates at terminal examination shall also be subject to inspection in such manner and by such authorities as the Board may direct.

5. The head of the institution shall furnish the oral or practical examiner, or such other authority as the Board may appoint, with a list of the candidates undergoing examination in the subject or subjects with which he is concerned, and shall make an entry against each name regarding the proficiency of the candidate as judged by his record therein during the course of study prescribed for the examination.

6. *Cancelled.*

7. Any candidate who has passed a *public examination in an Oriental Language (Sanskrit, Persian, or Arabic) or the examination in advanced Urdu or Hindi conducted by the department may be

* (a) The following examinations are recognized by the Board as public examinations in an Oriental Language under this Regulation and Regulation 7, Chapter XIV :

(1) Maulvi, Alim, Mulla (now defunct), and Fazil in Arabic, and Munshi and Kamil in Persian, conducted by the Education Department of the United Provinces, (2) the Sanskrit Examinations conducted by the Government Sanskrit College, Benares, and by the Benares Hindu University (*vide* Board's resolution 33, dated the 6th and 7th November, 1925, and paragraph 2 of the report of the meeting of the Examinations' Committee held on 4th February, 1926, adopted by the Board), (3) the Diploma Examinations in Arabic, Persian and Sanskrit conducted by the Lucknow University [*vide* Board's resolutions 18(g), dated the 3rd November, 1926 and 30, dated the 16th January 1935] and (4) the Sanskrit Examinations conducted by the Department of Public Instruction, Jaipur State [*vide* resolution 7 of the meeting of the Examinations' Committee held on 8th November, 1928, and resolution 31(c) of the meeting of the Board held on 9th November, 1928].

(b) Candidates residing in the United Provinces who have passed an examination (Sanskrit, Persian, or Arabic) of the Oriental Faculty of the Punjab University may also apply for permission to appear at the High School Examination in English only as private candidates (*vide* paragraph 39 of the report of the meeting of the Examinations' Committee held on 9th November, 1927, adopted by the Board).

admitted as a *private candidate to the High School Examination in English only, and shall, if successful, be entitled to a certificate of having passed the examination in English only. Similar concession may be given (1) to candidates residing in the United Provinces, who have passed an examination in a vernacular language (Hindi or Urdu) conducted by the Oriental Faculty of the Punjab University, (2) to Drawing Masters working in institutions †recognized by the Board who have read up to the High School standard, (3) to candidates who have passed the Vernacular Upper Middle Examination for girls conducted by the department, (4) to teachers of Manual Training working in institutions †recognized by the Board, (5) to teachers of Music working in institutions †recognized by the Board who have read up to the High School standard, (6) to candidates who have passed the Visharad Examination conducted by the All-India Hindi Sahitya Sammelan, Allahabad, (7) to candidates who have passed the Vidyavinodini Examination conducted by the Prayag Mahila Vidyapitha, Allahabad, and (8) to teachers of Books binding, Metal Work and Spinning and Weaving Working in institutions recognized by the Board and Wood-Working Instructors and Drawing Masters Working in Government Carpentry Institutions in the United Provinces.

8. **Candidates for the High School Examination shall answer questions in Hindi or Urdu in all subjects other than English

* Under Regulation 7, Chapter XIII, candidates who are studying English only in recognized institutions may also appear as school or college candidates in English only at the High School Examination [vide resolution 10(V) of the Board, dated the 10th November, 1932].

†N.B.—A candidate who takes the full High School Examination but fails may be granted a certificate to which he is entitled under the above regulation, provided he passes in the subject of English and submits an application to the Secretary of the Board not later than the 31st December of the year in which he appeared at the full High School examination. His name shall be published in the *Gazette*.

‡Includes Middle English Schools (vide resolution 7 of the Examinations' Committee, dated the 19th February, 1932).

**This Regulation should be read in the light of the following notes :

1. No candidate is permitted to answer questions in different subjects through different media, except as provided in the following rules.

2. No candidate whose mother-tongue is Hindi or Urdu will be allowed to answer questions in English in any subject, except as provided in the following rules.

3. Candidates whose mother-tongue is Hindi or Urdu may answer questions in English in those subjects in which no books in Hindi and Urdu versions have been prescribed or recommended or suggested in the Prospectus.

4. Candidates offering the Hindi or Urdu medium of examination may use such English technical terms as have been adopted in the Hindi or Urdu versions of books recommended or prescribed in the Prospectus.

(See page 17 continued.)

§provided that the Chairman of the Board or his nominees may at his or their discretion permit candidates to answer questions in English.

CHAPTER XIII(a)

DIPLOMA EXAMINATION IN INDIAN MUSIC

1 The Diploma Examination in Indian Music shall be open to—

(a) candidates who have completed a regular course of study for two academical years at an institution recognized by the Board for the examination ;

b) the following classes of private candidates :—

(i) regular students going up for the High School or Intermediate Examination who desire to appear as private candidates for the Diploma Examination in Indian Music in the same year ;

5 Candidates answering questions in Hindi or Urdu may use English technical terms in Geometry, Physics, Chemistry and General Science.

6. Candidates taking Commerce may answer questions in English for the present.

7. The existing practice in printing question papers for the High School Examination may continue.

8. The symbols and digits used in Mathematics and Geometrical Drawing may be in English character or in Hindi or Urdu character.

9. In the case of answers in Urdu the expressions and solutions of sums in Arithmetic and Algebra should be arranged according to the practice allowed in the Vernacular Final Examination.

10. Candidates taking Geography may fill up maps and insert the names of towns, mountains, etc. in English or Hindi or Urdu (*vide* paragraph 39 of the report of the Examinations' Committee, dated the 27th August, 1939, sanctioned by the Chairman of the Board).

§With a view to avoiding the infliction of any disability the Chairman of the Board has decided that the power vested in him under the regulation to grant permission to candidates desiring to answer questions in English should be liberally exercised (*vide* General letter no. B/7592/V—4, dated the 27th February, 1939).

- (ii) private candidates permitted by the Board to appear at the High School or Intermediate Examination of the same year ;
- (iii) candidates who failed at the Diploma Examination in Indian Music of any previous year ;
- (iv) teachers actually engaged in teaching in any educational institution in the United Provinces ;
- (v) candidates who have already passed the High School or any examination recognized by the Board as equivalent thereto or Intermediate Examination and would like to qualify themselves in Music with a view to joining the advanced courses in Music in any University or Music institution.

2. The courses of study for the *examination shall be as may be laid down in the Prospectus from year to year.

CHAPTER XIV.

INTERMEDIATE EXAMINATION.

1. Every candidate for admission to the Intermediate Examination shall be required to have passed the Board's High School Examination, or to have passed an examination which by Regulation is declared equivalent thereto, before entering upon the course of study prescribed for the Intermediate Examination.

2. The following examinations are declared equivalent to the Board's High School Examination for the purpose of enabling candidates to enter upon the course of study prescribed for the Intermediate Examination :

- (1) the Matriculation Examination of any University established by law in India approved for the purpose by the Board.
(The Matriculation Examinations of the following Universities are approved by the Board : Allahabad, the Punjab,

*Hindi or Urdu may be used as the medium of instruction and examination optionally with English for the Diploma Examination in Indian Music (*vide* Examinations' Committee's resolution 3, dated the 28th July, 1934 and Board's resolution 41, dated the 17th November, 1936).

Bombay, Calcutta, Madras, Patna, *Benares, and *Ali-garh) ;

- (2) the School-Leaving Certificate Examination of the United Provinces, or of another province, provided this examination is accepted as equivalent to Matriculation by the University established by law in that province ;
- (3) the Cambridge School Certificate (formerly called Senior Local) Examination, provided a student has passed in five of such †subjects as are recognized for the High School Examination of the Board of High School and Intermediate Education, United Provinces and provided, further, that a candidate who has passed the Cambridge School Certificate Examination in less than five full subjects may, prior to appearing at the Intermediate Examination, pass the Cambridge School Certificate Examination in one or more additional subjects so as to make up five full subjects ;
- (4) the Diploma Examination of the Chiefs' Colleges ;
- (5) the High School Examination for European Schools in the Central Provinces and in other provinces ;
- (6) the High School Certificate Examination of the Board of High School Education, Central Provinces ;
- (7) the Anglo-Vernacular High School and the English High School Examinations of Burma ;
- (8) the London University Matriculation Examination ;
- (9) the English School-Leaving Certificate Examination of the Travancore State ;

*By Matriculation Examination of the Benares Hindu and Aligarh Muslim Universities the Admission Examination of the former and the High School Examination of the latter are meant.

† The following subjects prescribed for the Cambridge School Certificate Examination are recognized as equivalent to the corresponding full subject (noted against each) prescribed for the High School Examination :

- (1) History (Cambridge) to History (High School) ;
- (2) Arithmetic with Geography (Cambridge) in the case of girls only to Mathematics (High School) ;
- (3) Hygiene and Physiology together with House Craft (Cambridge) in the case of girls only to Domestic Science (High School) ;

(vide Examinations' Committee's resolutions 5 and 11, dated the 12th November, 1935, adopted by the Board and 41, dated the 12th November, 1937, adopted by the Board).

- (10) the High School-Leaving Certificate Examination of Hyderabad (Deccan), provided a candidate has passed in class I or class II ;
- (11) the Secondary School-Leaving Certificate Examination of Mysore, provided a candidate has been declared eligible for admission to a University course ;
- (12) the Diploma Examination of the Royal Indian Military College, Dehra Dun, so long as the syllabus and the standard of the examination continue to be the same as those of the examination recognized in the foregoing clause (4) ;
- (13) the High School Examination of the Board of Secondary Education, Delhi, provided a candidate has passed the examination in five of such subjects as are recognized for the High School Examination of the Board of High School and Intermediate Education, United Provinces ;
- (14) the High School Examination of the Board of High School and Intermediate Education, Rajputana (including Ajmer-Merwara), Central India, and Gwalior, Ajmer ;
- (15) the Dufferin Final Passing Out Examination (courses for the Executive Cadets or the Engineering Cadets) of the Indian Mercantile Marine Training Ship "Dufferin" ;
- (16) the Secondary School-Leaving Certificate Examination of the Kochin State, provided the holder of the certificate has been declared eligible for admission to the University course of study by the Madras University ;
- (17) the Matriculation Examination of the National University, Ireland ;
- (18) the Matriculation Examination of the Osmania University, Hyderabad (Deccan), provided a candidate has passed in class I or class II ;
- (19) the High School Examination of the Board of Intermediate and Secondary Education, Dacca ;
- (20) the School-Leaving Certificate Examination conducted by the Nepal Government, provided a candidate has passed in the first or second division.

(21) the School Certificate Examination of the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, Sheffield and Birmingham, provided a candidate has passed the examination in English, Mathematics, History or Geography and two other subjects recognized for the High School Examination of the Board of High School and Intermediate Education, United Provinces.

(22) the Matriculation Examination of the Joint Matriculation Board, Pretoria, South Africa.

3. No candidate shall be admitted to the Intermediate Examination unless two academical years shall have elapsed since the date of his or her passing the High School or an equivalent examination :

'provided that candidates who have passed the Cambridge School Certificate (Senior Local) Examination may be admitted to the Intermediate Examination in the academical year following that in which they pass the Cambridge School Certificate Examination.

†3(a). Notwithstanding anything contained in those regulations, a woman candidate for the Intermediate Examination who has been admitted to the training class of an institution recognized for

* Candidates intending to appear under this proviso are eligible to appear as private candidates also, provided they fulfil the necessary conditions (vide Board's resolution 24 (last paragraph), dated the 9th November, 1924).

†The following rules have been made by the Board for the issue of certificates to candidates appearing at the Intermediate Examination under Regulation 3(a), Chapter XIV [vide resolution 4 of the Examinations' Committee, dated the 16th July, 1938 and Board's resolution 32(d), dated the 4th November, 1938]:

(1) If a candidate appearing in English and Physiology, Hygiene and Elementary Psychology at the end of the second year of her training course fails to secure the minimum pass marks in any one of the subjects she should be declared as "Failed".

(2) If she secures the minimum pass marks in both the subjects she should be declared as "Passed" both in the *Gazette* and in the cross list.

(3) No certificates shall be issued at this stage but a list of the names of such candidates who pass shall be kept separately as in the case of compartmental candidates for check and guidance in the second year of their appearance.

(4) Those candidates only who have been declared "Passed" in the first year of their appearance (i.e. at the end of the second year of their training) shall appear in the remaining two subjects in the next ensuing examination, provided they have been promoted to the third year of the training and are continuing therein.

(5) A candidate who passes in English and Physiology, Hygiene and Elementary Psychology in the first year of her appearance shall have to appear at the next ensuing Intermediate Examination [subject to clause (4) above]. If she fails to appear at the next ensuing Intermediate Examination owing to illness, she shall have to appear at the next Intermediate Examination.

(6) A candidate after passing in the remaining two subjects (at the end of the third year of the training) shall be given a certificate as "Passed under regulation 3(a), Chapter XIV" and no division shall be mentioned.

(See page 22 continued)

the Intermediate Examination and preparing candidates for the Departmental English Teachers' Certificate Examination for women held at the end of three years' course shall be examined in the two compulsory subjects, English and Physiology, Hygiene and Elementary Psychology at the end of the second year and in any two of the following optional subjects at the end of the third year :

- (1) History and Allied Geography or Histories of Greece and Rome and Allied Geography.
- (2) Geography.
- (3) Biology.
- (4) Civics.
- (5) A Modern Indian Language (Urdu, Hindi, Bengali, Marathi or Gujarati).
- (6) A Classical Language, viz. Sanskrit, Arabic, Persian, Latin, Greek or Hebrew.
- (7) Mathematics.

4. *Any student who has kept one academical year at a college affiliated to the Universities of Calcutta, Madras, Bombay, Patna, Benares, the Punjab, Nagpur, Delhi, Aligarh, or Rangoon or recognized by the Board of High School and Intermediate Education Rajputana (including Ajmer-Merwara), Central India, and Gwalior, Ajmer, after matriculation, may be allowed a year corresponding to that which he has so kept, provided he produces a satisfactory certificate from the Principal of a college affiliated to the Universities of

(7) A candidate who fails in the first year of the examination shall have to re-appear both in English and Physiology, Hygiene and Elementary Psychology in any future year.

(8) In the second year of appearance a candidate shall have to secure minimum pass marks in the subjects offered.

(9) A candidate who fails whether in one subject or both the subjects at the second year of her appearance at the Intermediate Examination shall have to re-appear in both the subjects at a subsequent examination (*vide* Resolution 42 of the Examinations' Committee, dated the 27th August, 1939, sanctioned by the Chairman of the Board on 22nd November, 1939).

*Any student who has kept any part of the session at a college affiliated to or recognized by any of the bodies named in the above regulation may be admitted to a college recognized by the Board and that the lectures attended by him at that college should count along with that he will put in at the United Provinces college for purposes of completing a regular course of study, provided the conditions laid down in the above regulations are fulfilled (*vide* Resolution II of the Examinations' Committee, dated the 22nd April, 1939, sanctioned by the Chairman of the Board on 22nd November, 1939).

Calcutta, Madras, Bombay, Patna, Benares, the Punjab, Nagpur, Delhi, Aligarh, or Rangoon or recognized by the Board of High School and Intermediate Education, Rajputana (including Ajmer-Merwara), Central India, and Gwalior, Ajmer, that the corresponding year has been duly kept according to the regulations in force at the University or of the Board from which he has *migrated, and that the said Principal has no objection to his transfer.

5. Every candidate for the Intermediate Examination shall be examined in English and any three of the following subjects :

- (1) Mathematics.
- (2) Chemistry.
- (3) Physics.
- (4) Biology.
- (5) Drawing.
- (6) Economics.
- (7) Civics.
- (8) History and Allied Geography.
- (9) Histories of Greece and Rome and Allied Geography.
- (10) Geography.
- (11) †Deductive Logic and Inductive Logic.
- (12) †Deductive Logic and Elementary Psychology.
- (13) †Elementary Psychology and Educational Psychology.
- (14) A Modern Indian Language (Urdu or Hindi or Bengali or Marathi or Gujarati), or a Modern European Language (German or French).
- (15) A Classical Language, viz. Sanskrit, Arabic, Persian, Latin, Greek or Hebrew.

* The Board has framed no rules nor prescribed any form regarding migration of students from or to its territorial jurisdiction. A candidate intending to migrate to a place outside the jurisdiction of the Board should communicate with the Circle Inspector of Schools through the head of his last institution. In case the candidate is a resident of a place outside the United Provinces, he should communicate with the head of his last institution.

This regulation (Regulation 4, Chapter XIV) applies to candidates for the Intermediate Examinations in Commerce and Agriculture also (*vide* resolution 19 of the Examinations' Committee, dated the 28th March, 1931, and resolution 15 of the Board, dated the 5th November, 1931).

†No candidate shall take both of the following subjects :

- Nos. 11 and 12.
- „ 12 and 13.
- „ 12 and 16.
- „ 13 and 16.

(16) *Physiology, Hygiene and Elementary Psychology.

(17) Indian Music (for girls only and as an additional optional non-examination subject for boys.)

6. Any candidate who has passed the Intermediate Examination of the Board or an examination equivalent† thereto may appear at any subsequent Intermediate Examination or Examinations conducted by the Board in any§ subject in which he has not previously passed the Intermediate Examination, provided that in the case of a subject for which practical work or a practical examination is prescribed he produces evidence satisfactory to the Board that he has completed the practical course prescribed for the subject.

7. || Any candidate who holds a certificate of having passed the High School Examination in English only under Regulation 7, Chapter XIII, or of having passed an examination equivalent to the High School Examination in English only under similar conditions, may be admitted as a ¶ private candidate to the Intermediate Examination in English only, provided at least one academical year shall have elapsed since the date of his or her passing the High School or an equivalent examination in English, and such a candidate shall, if successful, be entitled to a certificate of having passed the examination in English only.

* (See the last foot-note at page 23).

† The Intermediate Examination in Commerce or Agriculture may be regarded as equivalent to the Intermediate Examination only for the purpose of appearing at the Intermediate Examination in an additional optional subject under Regulation 6, Chapter XIV [*vide* Board's resolution 5(III), dated the 10th February, 1934].

§ Under Regulation 6, Chapter XIV, a candidate may offer more than one subject for the Intermediate Examination in a subsequent year [Resolution 10(III) of the Board, dated the 10th November, 1932].

|| Passing the High School Examination or an examination declared equivalent thereto in all subjects may be accepted as a fulfilment of the condition of passing in English required in this Regulation, provided that the candidate possesses one of the qualifications mentioned in Regulation 7, Chapter XIII.

¶ Candidates who are studying English only in recognized institutions may also appear as college candidates in English only at the Intermediate Examination [*vide* resolution 10(V) of the Board, dated the 10th November, 1932].

*8. Candidates for the Intermediate Examination are permitted to answer questions in Hindi or Urdu or English in all subjects other than English and Greek, Latin, Hebrew and Modern European Languages.

CHAPTER XIV(a).

EXAMINATION FOR CERTIFICATE IN MILITARY SCIENCE.

1. Every candidate for admission to the Examination for Certificate in Military Science shall be required to have passed the Board's High School Examination or an examination equivalent thereto and to have, since the passing of this examination, (1) prosecuted a regular course of study for not less than two academical years at an institution recognized by the Board for the Examination for Certificate in Military Science, and (2) attended an approved course of instruction in Military Science, as laid down in the Syllabus.

2. The following are the subjects of examination which may be added to or altered in such manner as the Board may, from time to time, decide :

Theory.

- (1) Military History as illustrated by the Mesopotamian Campaign (1914—18).
- (2) Organization of the Land Forces.
- (3) Characteristics of weapons and fighting troops.
- (4) Elementary map reading.
- (5) Elementary Military Tactics.

*This regulation should be read in the light of the following notes —

(1) A candidate for the Intermediate Examination may answer questions in English in one or more subjects and in Hindi or Urdu in the remaining subjects in which a medium through Hindi or Urdu is permitted.

(2) The option of using the medium of examination through Hindi or Urdu or English has been given in the following subjects only and in the following manner with effect from the Intermediate Examination of 1940 —

(a) Sanskrit and Hindi—through the medium of English or Hindi.

(b) Arabic, Persian and Urdu—through the medium of English or Urdu.

(c) Mathematics—through the medium of English, Hindi or Urdu on condition that in case of the Hindi or Urdu medium English mathematical technical terms may be used.

(d) Chemistry, Physics and Biology—through the medium of English, Hindi or Urdu on condition that in case of the Hindi or Urdu medium English scientific technical terms may be used.

(e) Drawing, Economics, Civics, History and Geography—through the medium of English, Hindi or Urdu.

(f) Logic, Psychology and Physiology, Hygiene and Elementary Psychology. through the medium of English, Hindi or Urdu.

† See Regulation 2, Chapter XIV.

Practice.

- (1) Performance of all movements in the ranks in squad and platoon drills.
- (2) Duties of a Section Commander in platoon and section drill.
- (3) Musketry (rifle only)—Care of arms, firing positions, range and discipline.

3. The subject Military Science should be studied as a special optional subject in addition to the subjects recognized for the Intermediate Examination or the Intermediate Examination in Commerce or the Intermediate Examination in Agriculture.

 CHAPTER XV.

INTERMEDIATE EXAMINATION IN COMMERCE.

1. Every candidate for admission to the Intermediate Examination in Commerce shall be required to have passed the Board's High School Examination or an examination *equivalent thereto, and to have, since the passing of this examination, prosecuted a regular course of study for not less than two academical years at an institution recognized by the Board for the Intermediate Examination in Commerce.

2. †Inspecting officers of an Education Department and teachers in schools and colleges recognized by the Board may be admitted to this examination as private candidates by special permission of the Board, provided that by the date of the examination not less than two academical years shall have elapsed since the date of their passing the High School Examination or an examination equivalent thereto.

3. The following are the subjects of examination. These may be arranged in alternative groups in such manner and with such additions and alterations as the Board may, from time to time, decide :—

Compulsory.

- (1) English.
- (2) Book-keeping and Accountancy.
- (3) Business Methods and Correspondence
- (4) (a) Elementary Economics.
- (b) Commercial Geography.

* See Regulation 2, Chapter XIV.

† Failed candidates of the Intermediate Examination in Commerce may also be admitted to a subsequent examination as private candidates under Regulations 16 and 17, Chapter XII (*vide* paragraph 6 of the report of the meeting of the Committee of Course in Commerce held on the 8th November, 1923).

Optional.

One of the following :—

- (1) Steno-typing (shorthand and typewriting).
- (2) Elements of Banking.
- (3) Elements of Industrial Organization.
- (4) Mathematics.

4. Any candidate who has passed the Intermediate Examination in Commerce (formerly called the Commercial Diploma Examination) of the Board or an examination *equivalent thereto, may appear at any subsequent Intermediate Examination in Commerce conducted by the Board in any subject in which he has not previously passed the Intermediate Examination in Commerce.

CHAPTER XV(a).

INTERMEDIATE EXAMINATION IN AGRICULTURE.

1. Every candidate for admission to the Intermediate Examination in Agriculture shall be required to have passed the Board's High School Examination, or an examination equivalent †thereto, and to have, since the passing of this examination, prosecuted a regular course of study for not less than two academical years at an institution recognized by the Board for the Intermediate Examination in Agriculture :

provided that a candidate who has passed the Intermediate Examination of the Board or an examination ‡equivalent thereto with Chemistry and Biology as optional subjects may be admitted to the Intermediate Examination in Agriculture after prosecuting a regular course of study for not less than one academical year, since the date of his passing the aforesaid examination, at an institution recognized by the Board for the Intermediate Examination in Agriculture

*A candidate who has passed the Intermediate Examination may appear at the Intermediate Examination in Commerce in additional optional subjects.

† See Regulation 2, Chapter XIV.

‡ The Intermediate Examinations of the following Universities are recognized as equivalent :

Osmania University, Hyderabad (Deccan), Madras University, Benare Hindu University and Aligarh Muslim University.

2. The following are the subjects of examination arranged in groups. The Board may make such additions and alterations in them as it may, from time to time, decide :—

Group I.—Chemistry and Physics.
Practical Chemistry and
Practical Physics.

Group II.—Botany and Zoology.
Practical Botany and
Practical Zoology.

Group III.—

I.—Elements of Soil Science—

Soil Geology, physical properties of soil, soil classes and climatology.

Tillage, Plant food and general principles of Manuring, principles of Irrigation and Drainage.

II.—Practical Farming—

Practical 1—Crop Culture, and vegetable gardening.

Practical 2—Farm Machinery, ploughing and other tillage operations.

Practical 3—Animal Husbandry, and Veterinary Science.

Group IV.—English—

Prose text-books, books recommended for general study, unseens and grammar

Translation and Composition

Group V.—Economics or Mathematics.

3. Any candidate who has passed the Intermediate Examination in Agriculture (formerly called the Agricultural Diploma Examination) of the Board or an examination* equivalent thereto, may appear at any subsequent Intermediate Examination in Agriculture conducted by the Board in any subject in which he has not previously passed the Intermediate Examination in Agriculture.

*A candidate who has passed the Intermediate Examination may appear at the Intermediate Examination in Agriculture in additional optional subjects.

MAXIMUM AND MINIMUM MARKS ASSIGNED TO THE VARIOUS SUBJECTS FOR THE EXAMINATIONS OF 1944.

HIGH SCHOOL EXAMINATION

Maximum marks	..	..	150 in English and 100 in every other subject.
Minimum pass marks	..	..	50 in English and 33 in every other subject.

DIPLOMA EXAMINATION IN INDIAN MUSIC

Maximum marks	..	..	100.
Minimum pass marks	..	..	33.

INTERMEDIATE EXAMINATION

Maximum marks	..	..	150 in English and 100 in every other subject.
Minimum pass marks	..	..	50 in English and 33 in every other subject.

INTERMEDIATE EXAMINATION IN COMMERCE

Maximum marks	..	..	100 in each subject.
Minimum pass marks	..	..	33 ditto.

INTERMEDIATE EXAMINATION IN AGRICULTURE

Maximum marks	..	..	100 in groups I and II each, 150 in group III and 50 in groups IV and V each.
Minimum pass marks	..	..	*33 per cent. in each group.

DISTINCTION

Minimum marks required	75 per cent. of the aggregate marks in a subject.
------------------------	----	----	---

DIVISION

Minimum pass marks required for Division I.	60 per cent. in the aggregate.
Minimum pass marks required for Division II.	45 per cent. in the aggregate.
Minimum pass marks required for Division III.	33 per cent. in the aggregate.

* See N.B. at the foot of page 210.

TEXT-BOOKS AND SYLLABUS

FOR

THE BOARD'S EXAMINATIONS OF 1944.

HIGH SCHOOL EXAMINATION.

(N. B. — It is left to the discretion of the examiners to set alternative questions on all subjects for the High School Examination.)

A—COMPULSORY SUBJECTS.

(1) ENGLISH.

Three papers, each of three hours, will be set (1) on the prescribed course in Prose and Poetry with questions on Grammar and Idiom, (2) on Unseen Passages with questions on Grammar and Idiom, (3) *passages in a Modern Indian Language for translation into English and a simple narrative or descriptive composition in English. There will be a *fourth* paper, of one hour's duration, designed to test the candidate's knowledge of arrangement of paragraphs, spelling, punctuation and the use of capital letters.

Text-books prescribed for detailed study :

Group A—

1. High School Prose, by A. JHA (Rai Sahib Gulab Singh & Sons, Lahore). Re.1-4.
2. A Reader in Modern English Prose, by BROWN (Macmillan & Co.). Re.1.
3. Models of High School Prose, by F. G. PEARCE (Oxford University Press). Re.1-4.

Group B—

1. Some Triumphs of Modern Exploration, by Webster Smith (Blackie & Son). Duxeen binding, Re.1.
2. Caravan of Light, by K. K. MEHROTRA (Oxford University Press). Re. 1.

* These passages will be a rendering from English.

3. **PHYLLIA WRAGGE** : Noble Lives (Thomas Nelson & Sons, Agent—The Indian School Supply Book Depot, Central Avenue, South, Calcutta). Re.1.

Group C—

1. **S. N. DEVA** : School Poetry (Indian Press, Ltd., Allahabad). Annas 12.

(*Omitting* Blake's "To the Evening Star"; Byron's "Ocean"; Campbell's "Hohenlinden"; Doyle's "Loss of the *Birkenhead*"; Collins' "Dirge"; Moore's "The Last Rose of Summer"; Clare's "The Woodcutter's Night Song"; Longfellow's "Home".)

2. An Anthology of Verse, by E. J. Thomson (Macmillan), Re.1, from which the following poems are prescribed :

The ballad of Lady Rosabelle ; The Slave's Dream ; John Gilpin ; The Child's First Grief ; The Mountain and the Squirrel ; Lead Kindly Light ; Breathes There ; The Only Son ; The Poet's Dream ; Kubla Khan ; The Brook ; Poems from Gitanjali.

3. Pattern Poetry, Part IA. (Thomas Nelson & Sons, Agent—The Indian School Supply Book Depot, Central Avenue, South, Calcutta). Price annas 11.

The following pieces are prescribed out of it :

J. Russell Lowell—The Singing Leaves ; Tennyson—The Sleeping Beauty ; Southey—After Blenheim ; Walter de la Mare—Sam's Three Wishes ; Alfred Noyes—The Highwayman ; Cowper—The Loss of the *Royal George* ; Bryant—To a Water-Fowl.

NOTE—Teachers are advised to see that students use the Anthologies named in the Prospectus and no inaccurate reprints of the actual poems prescribed.

N.B.—The above text-books are arranged in three groups—A, B, and C. Group A contains books of Prose Selections, Group B books of Inspirational Stories, and Group C books of Poetry. Every school must select for study one book only from each of the above groups.

Books recommended for rapid reading and indicating the standard of the unseen passages to be set in the second paper :

1. BOOKER T. WASHINGTON : Up From Slavery (George Harrap, Ltd.).
2. The Golden Deeds of India, First Series, by L. and H. G. D. TURNBULL (Oxford University Press).
3. RIDER HAGGARD : She (Abridged—Longmans, Green & Co.).
4. Shakuntala (Longmans, Green & Co.).
5. KERBIN : Legends from Greece and Rome (Ram Narain Lal, Allahabad).
6. FOURNIER : The Wonders of Physical Science (Macmillan).
7. In England (Macmillan).
8. READE : Cloister and the Hearth (Abridged—Macmillan's English Literature Series).
9. Stories from Tagore (Macmillan).
10. STEVENSON : Treasure Island (Oxford University Press).
11. The Story of Little Nell (Blackie).
12. YONGE : The Little Duke (Indian Press School Classics).
13. Stories from the Poets (George G. Harrap & Co.).
14. Men of Science (George G. Harrap & Co.).
15. Stories of Robinhood (Nelson).
16. Tom Browne's School Days (Abridged Oxford edition).
17. MORRIER : Hajji Baba (Abridged—Macmillan).
18. Tales from Shakespeare, Part II (Indian Press, Ltd., Allahabad).
19. Tod's Annals of Rajasthan (Rai Sahib Ram Dayal Agarwala, Allahabad).
20. Guy Mannering (P.T.I. Book Depot, Bangalore).
21. Oliver Twist (Indian Press, Allahabad).
22. The Paladins of India (Oxford University Press).
23. The Stories of the Buddha (Ram Prasad & Bros., Agra).
24. Reading in English (Gaya Prasad & Sons, Agra).
25. Mukerji: Ancient Indian Fasts and Feasts (Macmillan).
26. Don Quixote (Victory Series).
27. Socrates Persists in India (Oxford University Press).

Recommended for use by students.

The Little Oxford Dictionary.

(2) MATHEMATICS.

There will be two papers, each of three hours—one in Arithmetic and Algebra and the other in Geometry and Mensuration.

SYLLABUS.

(1) Arithmetic and Algebra.

The four simple rules ; British and Metric systems of measurement ; Factors ; Prime numbers ; H. C. F. and L. C. M. Decimal and vulgar fractions (including conversion of a recurring decimal to a vulgar fraction and conversely) ; Square Root ; Ratio and Proportion ; Average ; Percentages ; Profit and Loss ; Interest, simple and compound ; Present Worth and Discount (true and commercial) ; Stocks and Shares ; Areas and volumes ; Simple equations of one or more unknown quantities ; Quadratic equations of one unknown quantity ; Graphs of statistics ; Graphs of straight lines and graphical solution of linear simultaneous equations ; Problems.

N.B.—Candidates will be provided with squared paper, if necessary.

(2) Geometry and Mensuration.

The course includes theoretical, practical, and numerical Geometry, and every candidate will be expected to answer questions in both branches of the subjects. The questions on practical Geometry will be set on the constructions contained in the annexed Schedule A, together with easy extensions of them. All figures should be drawn accurately for which purpose every candidate should provide himself with a graduated scale, a pair of set squares, a protractor, a compass, and a hard pencil. The questions on theoretical Geometry will consist of theorems and problems contained in the annexed Schedules A and B, together with easy extensions and deductions with numerical illustrations. Any proof of a proposition will be accepted which appears to the examiners to form part of a systematic treatment of the subject ; the order in which the theorems are stated in Schedule B is not imposed as the sequence of their treatment. In the proof of the theorems hypothetical constructions will be permitted.

N.B.—Candidates will be provided with squared paper, if necessary.

SCHEDULE A.

Bisection of angles and of straight lines.

Construction of perpendiculars to straight lines.

Construction of an angle equal to a given angle.

Construction of parallels to a given straight line.

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

Division of straight lines into a given number of equal parts.

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

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

Simple cases of the construction of circles from sufficient data.

Construction of a rectangle equal to a given polygon

Construction of a rectangle on a given base equal in area to a given rectangle.

Construction of a square equal to a given rectangle.

Construction of a rectangle of given area the sum or difference of whose sides is given. (These constructions should be based on the propositions on the geometry of the circle.)

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

Mensuration of triangles and simple rectilineal figures; finding their area by means of field book; application of formulæ for length of circumference and for area of a circle in terms of its radius.

 SCHEDULE B.

Angles at a point.

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

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

Parallel straight lines.

When a straight line cuts two other straight lines, if—

(i) a pair of alternate angles are equal, or

(ii) a pair of corresponding angles are equal, or

(iii) a pair of interior angles on the same side of the cutting line are together equal to two right angles, then the two straight lines are parallel ; and the converse.

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

Triangle and rectilinear figures.

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

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

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

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

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

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

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

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

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

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

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

Areas.

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

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

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

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

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

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

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

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

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

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

Loci.

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

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

The Circle.

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

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

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

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

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

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

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

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

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

The angle in a semi-circle is a right angle, the angle in a segment greater than a semi-circle is less than a right angle, and the angle in a segment less than a semi-circle is greater than a right angle.

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

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

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

NOTE—The use of diagonal scale for drawing and measuring lines in answering questions in Geometry in the High School Examination may be permitted.

The following books are suggested :

For Arithmetic—

1. DR P. L. SRIVASTAVA : Senior Practical Arithmetic for Indian Schools (Revised edition) (Indian Press, Ltd., Allahabad).
2. Oudh Upadhyaya : New Arithmetic (Ram Narain Lal, Allahabad)
3. A. S. SINHA : A New Arithmetic (P. C. Dwadash Shreni & Co., Aligarh)
4. VAIDYA AND MATHUR : High School Arithmetic (Gwalior and Rajputana Publishing Co., Lashkar, Agent—Educational Publishing House, Agra).
5. FAQIR CHAND RASTOGI : A New School Arithmetic (Lakshmi Narayan Agarwala, Agra).

For Algebra—

1. M. A. BUTT : Algebra for High Schools (Rai Sahib Gulab Singh & Sons, Lahore).
2. S. T. HUSAIN AND F. M. KHAN : Simple Algebra, Parts I and II (P. C. Dwadash Shreni & Co., Aligarh).
3. M. RAY : Modern Algebra (Indian Publishing House, Calcutta).
4. MEWA RAM : Modern Algebra (revised) (G. R. Bhargava & Sons, Chandusi).
5. RAM KISHORE BHARGAVA : High School Algebra (Hr Prasad Bhargava, Kuteherighat, Agra).

For Geometry—

1. HALL AND STEVENS : A Shorter School Geometry, Parts I and II (Macmillan & Co.).
2. PARKINSON AND PRESSLAND : A Primer of Geometry (Clarendon Press, Oxford) (Indian edition) Re.1-12.
3. PIERPOINT'S Elements of Geometry.
1. The New Sequence Geometry, by GRAY and SMITH (The Grant Educational Company) (to be had of the Indian School Supply Depot, Calcutta).
5. Analytic Geometry, Part II, by S. B. L. KAPOOR (Agarwal Press, Allahabad).
6. Lessons in Geometry, Parts I and II, by S. N. CHATTERJEE (Macmillan & Co.), Part I for Re.1 and Part II for Re.1-4.
7. Plane Geometry for High Schools, by M. A. BUTT (RAI Sahib M. Gulab Singh & Sons, Lahore).
8. An Indian School Geometry, Parts I and II, by SHIVANATH SINGH (Indian Press, Ltd., Allahabad)

Recommended for the use of teachers :—

High School Mensuration, by MITAL and VARMA (Lakshmi Narain Agarwala, Agra).

(3) HISTORY.

There will be two papers, each of three hours :

- (i) Indian History and Allied Geography, and
- (ii) English History and Allied Geography.

N.B.—Candidates are expected to draw freehand maps of India and Great Britain and Ireland.

Indian History

Indian History in outline from the earliest times to 1935

The following syllabus is suggested :

I.—The influence of Geography on Indian History.

II.—Ancient India —

A—First period from the earliest times to 600 B.C.

- 1. The Civilization of the Indus Valley and the Dravidians
- 2. The Aryan immigration.
- 3. Vedic Age (outline).
 - (a) Vedic religion.
 - (b) Vedic society.
 - (c) Vedic literature.

B—Second period from 600 B.C. to 180 B.C.

- 1. Life and teachings of Mahavira and Buddha.
- 2. The Mauryan Empire.
- 3. Culture—
 - (a) Dharma.
 - (b) Government.

C—Third period from 180 B.C. to A.D. 650.

- 1. Yuechis, Kushanas, Kanishka.
- 2. Guptas—Samudragupta, Chandragupta Vikramaditya
- 3. Harsha.

4. Culture (outline).

D—Fourth period from A.D. 650 to A.D. 1200.

1. Rajput Kingdoms, Chauhans, Chandels, Gaharwar (Rathor).
2. The South—Pandyas, Pallavas, Cholas, and Keralas.
3. The Deccan—Chalukyas, Rashtrakutas, and Yadavas.

III.—Medieval India—

A—Early medieval period up to 1526.

1. Life and teachings of Muhammad.
2. Arab invasion of Sind.
3. The Turkish invasions and the kingdom of Delhi.
 - (a) Mahmud of Ghazni.
 - (b) Shahab-ud-din Muhammad of Ghor.
 - (c) The Slave Kings and Mongol invasions.
 - (d) The Khiljis, Ala-ud-din.
 - (e) The Tughlaks—Muhammad and Firoz—break-up of the Empire of Delhi.
 - (f) The invasion of Timur.
 - (g) The Bahmani and the Vijaynagar Kingdoms
 - (h) Culture, literature, religion and art.
 - (i) Saiyyids and Lodis.

B—The Moghal Empire—

- (a) 1. Babar and Humayun.
2. Sher Shah.
3. Akbar—Conquest and Consolidation.
4. Jahangir, Shahjahan—prosperity.
5. The administrative and religious policy of Aurangzeb—Maharattas and Rajputs.
6. The decline and fall of the Empire.
- (b) Shivaji—The struggle with the Mughals—The Peshwas up to 1761.
- (c) Sikhs—Guru Nanak and Guru Govind Singh.
- (d) Early European settlements, 600—1708.

Culture (outline)—

Religions.

Architecture and painting.

Literature.

IV —Modern India—

A.—1. Struggle of the European Powers. The French and the British (1700—1763).

2. Struggle between the English and Indian Princes (1753—1774): Conquest of Bengal.

B—Expansion and consolidation of British rule (1774—1857):

1. Warren Hastings—Regulating Act and Pitt's India Act.

2. Cornwallis—The permanent settlement.

3. Wellesley—The subsidiary alliance.

4. Minto—Embassies to Asiatic Powers.

5. Hastings—Nepal war, Mahratta wars.

6. Bentinck—Reforms

7. Auckland and Ellenborough—Afghan wars.

8. Hardinge—Punjab war

9. Dalhousie—Completion of the British Dominion.

C—British rule (1857—1935):

(a) Wars and expansion—

1. Afghanistan.

2. Burma.

(b) Internal developments—

1. Constitutional—Acts of 1861, 1892, 1902, 1919, 1935.

2. Local Self-Government.

3. Education.

4. Justice.

5. Administration.

(c) Growth of National Movement in India.

The following books indicating the scope and standard of knowledge required are recommended :

1. A Class Book of Indian History, by S. K. AYYANGAR (Longmans, Green & Co., Calcutta).
2. DR. ISHWARI PRASAD : Students' History of India (Hindi, and Urdu), second edition (Indian Press, Ltd., Allahabad).
3. DR. N. C. BANERJI : A Text-book of Indian History (Mondal Bros. & Co., Calcutta).
4. RAMA SHANKAR PRASAD : Hamare Dosh ka Itihas (Hindi and Urdu) (Agarwal Press, Allahabad.)
5. A Short History of the Indian People,
Hindustan ke Nivasiyo ki Samksipt Itihas, by DR. TARA CHAND
Ahle Hind ki Mukhtasar Tawarikh
(Macmillan & Co.).

The following atlases are recommended :

1. Students' Atlas of Indian History (Macmillan).
2. JOPPEN : Historical Atlas (Longmans, Green & Co.).

English History.

English History in outline from A.D. 1485 to 1914.

The following syllabus is suggested :

I.—The influence of Geographical features on English History.

II.—Introductory outline of the following topics (1066—1485)

1. Feudalism
2. Religion and Church.
3. Magna Carta.
4. Growth of Parliament.

III.—History of England (1485—1688) :—

A—Tudors, (1485—1603)—

1. Monarchy and Parliament.
2. Religious changes and movements.
3. Growth of Commerce.
4. Discoveries and beginning of colonial and sea power.
5. Relations with European Powers.

B—Early Stuarts, (1603—1649)—

1. Monarchy and Parliament.
2. Religious developments—Puritans.
3. Commercial and Colonial expansion.
4. Civil War.

C—The Commonwealth (1649—1660) :—

Cromwell —

- (a) Scotland and Ireland.
- (b) European Powers, navigation law
- (c) Growth of Presbyterians.
- (d) Parliaments of the period.

D—Latter Stuarts (1660—1688)—

1. Parliament—Parties.
2. Relation with European Powers—France and Holland.
3. Colonial and Commercial expansion.

IV.—Constitutional Government (1688—1914) :—

A—William and Mary and Anne (1688—1714)—

1. Bill of Rights.
2. Parliament—
 - (a) Whigs and Tories.
 - (b) Cabinet.
3. Affairs of Ireland.
4. Relations with European Powers and growth of Colonial Power.

B—Early Hanoverians (1714—1763)—

1. Policy of Walpole and Pitt.
2. European wars.
3. Colonial expansion.

C—Latter Hanoverians (1763—1830)—

1. Industrial Revolution.
2. American Colonies.
3. French Revolution, Wars with France.
4. Ireland—Union.

D—Rise of Democracy (1830—1914)—

- (i) Reform Acts.
- (ii) Home rule for Ireland.
- (iii) Growth of British Empire.
- (iv) Policies of Peel, Palmerston, Disraeli and Gladstone.
- (v) Relations of England with the European States, e.g. France, Germany and Russia.

N.B.—Students are expected to have a knowledge of “Representation of the People Act, 1911, 1918 and 1928”

The following books indicating the scope and standard of knowledge required are recommended :

1. T. F. TOUT : A History of Great Britain, Book II (Longmans).
2. GUEST, G. : Outlines of British History (Oxford University Press).

3. F. R. WEST : A Short History of England for Indian Schools (English, Hindi and Urdu editions, 1936) (Indian Press, Ltd., Allahabad).

4. D. B. BAIJAL : A Short History of England (Hindi and Urdu editions, 1936) (City Book House, Cawnpore).

5. VISHESHWAR PRASAD : A History of England (Hindi and Urdu editions), (revised edition, 1936) (Gautam Bros., Cawnpore).

6. DR. BANARSI PRASAD SAXENA : History of English People (Hindi and Urdu editions, 1936) (Shri Ram Mehra & Sons, Agra).

The following atlases are recommended :

1. S. R. GARDINER : A School Atlas of English History (Longmans, Green & Co.).

2. Macmillan's Atlas of the British Empire.

or

Geography

There will be two papers, each of three hours' duration, as follows :

Paper I.—General Geography of the World outside of India.
(Sections I and II of the syllabus.)

Paper II.—India and its world relations. (Section III of the syllabus)

Syllabus.

I.—(a) Shape of the Earth ; rotation and revolution duration day and night ; the seasons. Latitude and longitude. The commoner map projections, treated simply.

(b) Outlines of the relief and drainage of the lands and study of the chief land-forms. The hydrosphere : ocean currents, waves and the phenomena of tides.

(c) The atmosphere. Weather and climate. Study and measurement of temperature, pressure and rainfall. Climate. Seasonal distribution over the globe of temperature, pressure and rainfall ; study of wind-belts ; Ferrel's Law, Buys Ballot's Law, cyclones and anti-cyclones. Chief types of climate.

(d) Practical exercises based on simple contour maps.

II.—(a) The world treated according to its major natural regions. Knowledge of the principles of physical geography and of the geographical distributions should be applied to the study *in outline* of the major natural regions of the world.

(b) The influence of environment on man, his activities, his industries. World sources of food, raw material, power and manufactured goods. Important trade routes, growth of towns.

III.—Geography of India including a regional treatment of the United Provinces in fuller details. Its relations, physical and climatic, with contiguous areas ; its commercial relations with the world in general.

Books recommended.

1.—As text-books :

Morrison : Our World (abridged edition), (Macmillan). (English, Hindi and Urdu editions), English Rs.2-8, Hindi Re.1 and Urdu Re.1-4

Stamp : The World (Longmans). (English, Hindi and Urdu editions), English Rs. 3.

Morrison : Junior Geography of India (Nelson). 12 annas.

French and Stamp : The Indian Empire (Longmans).

H. Pickles ; India, World and Empire (Oxford). (English, Hindi and Urdu editions), English Rs.2-4.

Wallis : Practical Exercises in Geography (Macmillan). 1s.

Fairgrieve and Young : Junior Contour Exercise Book (Phillip). 9d.

Stamp : Geographical Exercise Books for India, Part I (Longmans). 12 annas.

Sohan Lal : Modern Geography of the World (Urdu and Hindi editions), (Indian Press, Allahabad).

Ram Narain Misra : Geography of India (Urdu and Hindi editions) (Bhugol Karyalaya, Prayag). Rs.2.

John Bartholomew : Oxford Indian School Atlas (1936 edition), (Oxford University Press). Re.1-4.

Visual Contour Atlas (Phillip). 1s. 4d

Collin's Clear Type Atlas.

Advanced Atlas, by Dr. I R. Khan (Hindustani Book Depot, Lucknow).

II.—As reference books for students :

Unstead and Taylor : Essentials of World Geography (Phillip). 2s.

Fairgrieve and Young : The World (Phillip). 2 . 6d.

Kermack : New Geography of the World (Johnston) 3s.

E. C. and L D. Stamp : Practical Atlas of Modern Geography (George Gill & Sons) Re. 1-12.

Phillip's sets of synthetic maps (for students' use). 1s. per packet

Phillip's Modern School Atlas of Physical, Political and Commercial Geography. 7s. 6d.

Lyde : Man and His Markets (Macmillan). 3s.

Herbertson : Man and His Work (Black). 1s. 6d.

Davis : Elementary Physical Geography (Ginn). 5s. 6d.

Mackay : The Oxford Picture Geographies (Oxford Press). 2s. 6d. each.

Goodchild : Geography and Man (Ravi Narain Lal, Allahabad). Rs.2.

Lay : World Geography, Books I—III (Macmillan). 1s., 1s. 3d. and 2s. 3d. respectively.

L. D. Stamp : Real Life Geography (George Gill & Sons). Re.1
Bhugol Atlas (Hindi and Urdu editions) (Bhugol Karyayya Allahabad).

I:I.—As books of reference for teachers :

Newbigin : Man and his Conquest of Nature

Hardy : Plant Geography (Oxford University Press).

Newbigin : Animal Geography (Oxford University Press).

Brooks : The World (London University Press). 7s. 6d.

Herbertson (F. D.). Clarendon Geographies. Vols. I and II, 4s each.

Chisholm : Smaller Commercial Geography (Longmans) 5s.

Skcats : Principles of Geography (Oxford University Press). 5s. 6d.

Mill : The Realm of Nature (Murray). 5s.

Lands and Their Stories. Books I to VII (Blackie).

Peeps at Many Lands (Black). 2s. 10d. each.

The Indian Year Book (Times of India Office, Bombay). Rs. 5-4.

Wallis : Macmillan's Geographical Exercise Books, Northern Continents. 1s.

Wallis : Macmillan's Geographical Exercise Books, Southern Continents. 1s.

Phillip's Sets of Maps of the Continents and of India with explanatory Handbooks. (Prices vary according to style of mounting Eyeletted style recommended.)

Elementary Civics.

A separate paper of one hour's length carrying 16 marks shall be set on Elementary Civics which should be scheduled in the scheme for the High School Examination after the fourth paper in English and before the papers in History and Geography are given. Elementary Civics shall form part of the second paper in compulsory History and Geography. Candidates offering Civics with either paper shall answer questions carrying only 34 marks from the History or Geography paper and shall be allowed not more than two hours' time to do so; candidates offering History or Geography as an optional subject shall attempt the *full* paper carrying 50 marks.

Syllabus :

1. Meaning of Civics, Citizen and Citizenship.
 2. Citizen and Association .
 - (a) Family; (b) Community, (c) Occupation; (d) Religion;
 - (e) Culture.
 3. Citizen and Society:
 - (a) Village and City; (b) District and Province; (c) Nation and Humanity
 4. Citizen and State : Government and its functions—
 - (a) Peace and Security :
 - (b) Justice.
 - (c) Education and Sanitation.
 - (d) Economic Welfare.
 - (e) Social Welfare.
 5. Structure of government :
 - (1) Its forms, Federal and Unitary, Responsible and Representative.
 - (2) Its organs, Legislature, Executive and Judiciary.
 6. Rights and duties of a citizen. Patriotism.
 7. The Indian system of government—Imperial, Central, Provincial and Local (with special reference to the United Provinces).
- NOTE**—Treatment of these topics is to be quite elementary.

The following books are recommended for class use :—

(1) Indian Citizenship (English Version), Bhartiya Nagri Kata (Hindi Version), Shahrizat-i-Hind (Urdu Version), by Dr. Beni Prasad (Indian Press, Allahabad), 12 annas each edition.

(2) Elementary Civics and Administration (Hindi and Urdu Versions), by Dr. B. M. Sharma (Bhagwan Das & Bros., Arya-nagar, Lucknow), 14 annas each edition.

(3) An Outline of Civics (General and Indian) (English and Hindi Versions), by S. V. Puntambekar (Nand Kishore & Bros., Benares City), 12 annas each edition.

(4) Elementary Civics and Administration (Urdu and Hindi Versions), by Dr. Ishwari Prasad and Dr. Tripathi (Rai Saheb Ram Dayal Agarwala, Allahabad), one rupee each edition.

(5) A Text-Book of High School Civics (Urdu and Hindi Versions), by R. K. Suvastava (Lakshmi Narain Agarwal, Agra), 14 annas each edition.

(6) Nagrik Shashtra (Hindi and Urdu Versions), by K. L. Varma, (Nand Kishore & Bros., Benares City), annas twelve each edition.

Books of reference for teachers—

(1) Macs Iver : Elements of Social Science.

(2) S. V. Puntambekar : Introduction to Civics and Politics.

(3) Dr. Beni Prasad : The A. B. C. of Civics.

(4) Srinivas Shastri : The Rights and Duties of the Indian Citizen

(5) Drs. Ram and Sharma : Elements of Civics.

(6) Lahiri and Bannerji : The New Constitution.

(4) MODERN INDIAN LANGUAGES.

There will be two papers, each of three hours' duration, in each of these languages*—one paper will be set in Prose Text, Unseen, and Grammar, the other in Poetry Text and Composition. In Urdu only the Prose paper shall include an alternative question from each of the books recommended for supplementary reading and the Poetry paper shall include questions on Grammar also. The ability of the Urdu candidates to read *shikast* will be tested by means of a paper set for the purpose.

*NOTE—There shall be in the second paper a passage in simple English prose for translation into a Modern Indian Language as a compulsory part of the examination in Modern Indian Languages.

The following are the text-books prescribed :

(a) Hindi.

Paper I—

Prose—

(1) गद्यरत्नावली by Rai Bahadur Shyam Sunder Das (Indian Press, Ltd., Allahabad), Re. 1,

or

(2) हिन्दी गद्य विहार, by Hari Shankar Sharma (Shanti Press, Agra), Re. 1 (half cloth, stiff cover),

or

(3) गद्य-रत्न संग्रह by C. S. Vajpai (Educational Publishing House, Benares), Re.1.

Paper II—

Poetry—(1) हिन्दी काव्य संग्रह by Satya Jiwan Varma (Ram Narain Lal, Allahabad) (Illustrated half cloth, stiff cover—Re.1),

or

(2) पद्य-कल्पद्रुम (Revised edition). by Narottam Das Swami (Gaya Prasad & Sons, Agra). (Card bound edition, Re.1),

or

(3) काव्य कौमुदी, (revised), by "Rasal" (Agrawal Press, Allahabad) (Stiff cover, Re.1).

Special attention should be paid to composition. The following books are recommended for grammar and composition :

(1) रचना प्रबोध, by Ram Ratna (Ratnashram, Agra).

(2) निबंध—चंद्रिका by Ram Narain Chaturvedi (Ram Charan Lal, Lucknow).

(3) संक्षिप्त-हिन्दी व्याकरण, by Kamta Prasad Guru (Nagari Pracharini Sabha, Benares).

(4) *Hindi Unseens, Part I*, by S. S. Avasthi (Agrawal Press, Allahabad).

(5) रचना प्रभाकर, by Ganga Prasad Upadhyaya (Rai Sahib Ram Dayal Agrawala, Allahabad).

(6) High School Hindi Vyakaran, by Ganga Prasad (Rai Sahib Ram Dayal Agrawala, Allahabad).

(7) Hindi Rachana (Gaya Prasad & Sons, Agra).

Books recommended for supplementary reading :

(1) चरित्र-चित्रण, by Mahavir Prasad Dwivedi (Hindi Press, Allahabad)

(2) सप्त सुमन, by Prem Chandra (Nand Kishore Bros., Benares).

(3) भौष्म, by Rup Narain Pandeya (student's edition). (Hindi Granth Ratnakar Karyalaya, Bombay). Re.1-4.

(4) गणपाठजाली by Har Datt Sharma and A. N. Sharma (University Book Depot, Delhi). Re. 1-4.

(5) स्काउटिंग और ग्राम सेवा. by Shri Ram Bajpai (Leader Press, Allahabad). Re.1.

(6) पुरुष पर्व, by Seyaram Sharan Gupta (Sahitya Sadan, Chirgaon, Jhansi). Annas 12.

(7) सुधांशु, by Rai Krishna Das (Bharati Bhandar, Benares). Annas 12.

(8) शिकार, by Shree Ram Sharma (Sahitya Sadan, Kirthara, Mainpuri). Annas 10.

(9) जयद्रथ षष्ठ, by G. C. Sharma (Ganga Granthagar, Lucknow). Annas 14.

(10) सुदर्शन, by Kamta Prasad Guru (Ram Narain Lal, Allahabad). Annas 10.

(11) मुक्ति का रहस्य, by L. N. Mishra (Sahitya Bhawan, Allahabad). Re.1-8.

(12) बीर भूमि मेवाड़, by Surendra Sharma (Sahitya Kutir, Agra) Annas 12.

(13) समाज सेवक, by B. P. Mishra (Sahitya Samiti, Raigarh). Re.1.

- (14) शेरदु कहानियां, by B. Hriday (Chhatra Hitkari Pustakmala, Allahabad). Annas 12.
- (15) अन्नमोल रत्न, by R. G. Sukul (Educational Publishing House, Benares). Re.1.
- (16) खेज के पत्र पर, by C. L. Garg (University Book Depot, Agra). Re.1
- (17) भव भूति विलास by Pandit H. Misra (Rai Sahib Ram Dayal Agrawala, Allahabad). Annas 12.
- (18) सुदर्शन सुमन, by Sudarshan (Motilal Benarsi Das, Lahore) Re.1-8.
- (19) संतैषु अथवा कृषि मुनि, by M. C. Singh (Kitab Mahal, Lucknow). Annas 9.
- (20) हमारे साहित्य निर्माता. by Shri Shanti Priya Dwivedi (Granthmala Karyalaya, Bankipore, Patna). Re.1.
- (21) भाग्य-निर्माण, by Thakur Kalyan Singh (Chhatra Hitkari Pustakmala Karyalaya, Allahabad). Re.1-4.
- (22) कुशाल, by Kailas Nath Bhatnagar (Indian Press, Allahabad). Re. 1.
- (23) चन्द्रगुप्त नाटक, by Badri Nath Bhatt (Ratnashram Printing Works, Agra). Annas 6.
- (24) सत्य हरिश्चन्द्र नाटक, by Shree Harish Chandra (Nagri Pracharin; Sabha, Benares—Indian Press, Allahabad). Annas 4.

NOTE—Candidates are expected to read at least three books recommended for supplementary reading in the above list which should include one of the drama books

(b) Urdu.

Text-books prescribed :

Prose

One of the following books :

(1) Umdatul Intikhab (or High School Urdu course), by Mohammad Anwarul Hakk (Rai Sahib Ram Dayal Agrawala, Allahabad) Re.1-4.

(2) Muntakhebat Nasr, by Maulana Asghar Husain (Indian Press, Allahabad). Re.1-2.

(3) Nigaristan-i-Adab (selection from Urdu Prose), Part I, by Hamid Ullah 'Afsar' (K. D. Seth, Lucknow), Re.1.

Poetry

One of the following books :

(1) Gulistan-i-Sakhun, by Maulvi Abdul Waheed Sahib (Rai Sahib Ram Dayal Agrawala, Allahabad) Re.1.

(2) Tohfa-i-Jalal, by Maulvi Hafiz Saiyid Jalaluddin Ahmad (Jafri Brothers, Anwar Ahmadi Press, Allahabad). Annas 12.

(3) Nazm-i-Urdu, by Maulvi Saiyid Qaim Raza Sahib Nasim Amrohi (Saiyid Shamsul Hasan, Ishaat-i-Urdu, Lucknow). Annas 12.

Recommended for Grammar :

One of the following books :

(1) Zubdatul Qawaid, by Dr. Zubaid Ahmad (Rai Sahib Gulab Singh and Sons, Allahabad). Re.1.

(2) Adibul Qawaid, by Maulvi Hafiz Jalaludin Ahmad (Jafri Brothers, Anwar Ahmadi Press, Allahabad). Re.1.

Recommended for supplementary reading :

(1) Sharif Zada, by Mirza Ruswa (National Press, Allahabad).

(2) Taubat-un-Nasuh, by Dr. Nazir Ahmad.

(3) Prem Battisi, by Prem Chand.

Recommended for *shikast* :

(1) Manual of Urdu Shikasta Script (1936 edition) (Newal Kishore Press, Lucknow). Re.1-2.

(2) Majmuai Khat-i-Shikast wa Kaghizati-karrawai (1936 edition) (The Indian Publishing House, 12 Bank Road, Allahabad). Annas 8.

(3) Dastural Adalat (Majmuai Kaghizati-karrawai (1932 edition) (Mujtabai Press, Meerut City). Annas 8.

(4) Jadid Khat-i-Shikast (1933 edition). (The Indian Press, Ltd. Allahabad). Annas 12.

(5) High School Khat-i-Shikast (Ram Charan Lal Agarwala, Lucknow). Annas 10.

(6) Rahnumai Khat-i-Shikast (Nazir Sons, Muslim University, Aligarh). Re.1.

(c) Bengali

Text-books prescribed :

Prose—

“ High School Bengali Selection ”, by R. Chakravarty, published by Students’ Friends, Hewett Road, Allahabad, of which the following pieces are omitted :

- (1) Shakuntalar Patigriha Jatra, by Ishwar Chandra Vidya-sagar.
- (2) Gatayuger Samaj, by Akshay Ch. Sarkar.
- (3) Jananir Prabhab, by Shiva Nath Shastri.
- (4) Madhusudaner Kabi Saktir Utsa—Jogindra Nath Bose.
- (5) Lalit Giri —Bankim Chandra Chatterji.

Poetry—

“ Kabya Prativa ”, by K. C. Sinha (Indian Press, Allahabad. Price Re.1-4), of which the following poems are omitted :

- (1) Prarthana by Vidyapati.
- (2) Akshep by Chandidas.
- (3) Rambilap by Krittibus Ojha.
- (4) Kamale Kaminir Rup-barnana—Mukundaram.
- (5) Prithibi and Swadesh—Iswar Gupta.
- (6) Bangabhumir Prati—Maichel M. S. Dutta.
- (7) Mogal Raj Lakshmi—Dinabandhu Mitra.
- (8) Usha—Krishna Chandra Majumdar.
- (9) Himanchal—Bihari Lal Chakravarty.
- (10) Jamunatate—Hem Chandra Banerji.
- (11) Bimbisarer prati Siddhartha—Giris Chandra Ghose.
- (12) Akulata—Giris Chandra Ghose.
- (13) Buddhadever Tanutyag—Nabin Chandra Sen.
- (14) Ajodhyar Pathe—Raj Krishna Roy.
- (15) Jamuna Lahari—Gobinda Ch. Roy.
- (16) Alak—Baroda Chandra Mitra.
- (17) Eso—Dwijendra Lal Roy.
- (18) Pratiksha—Dwijendra Lal Roy.
- (19) Jamuna—Jadu Gopal Chatterji.

- (20) and (21) Hem Chandra and Manab—Akshay Kumar Baral.
 (22) Biswa Prakriti—Priyamada Debi.
 (23) Santwana—Jibendra Nath Dutta.
 (24) Robindra Jayanti—Mohit Mazumdar.
 (25) Bedan Bina—Bande Ali Mian.
 (26) Eman ki Rabe—Prativa Debi.

Recommended for supplementary reading (at least three of these books should be read by the students) :

- (1) Banga-Gaurab, Part II, by Rai Bahadur Jaladhar Sen.
 (2) Arya Kriti, by Rajani Kanta Gupta.
 (3) Bankim-Rachana (Calcutta University).
 (4) Bindur Chhele—Sarat Chandra Chatterji.
 (5) Swadesh O Sankalpa—Dr. Robindra Nath Tagore.
 (6) Alo-O-Chaya—Kamini Roy.

Grammar—Heads of Institutions are to select a text-book on the subject. The following books are recommended) :

- (1) Sahitya Prabesh—Prasanna Kumar Vidyaratna.
 (2) Bhasabodh Vyakaran—Nakuleswar Vidabhusan.
 (3) Vyakaran Prabesh, Parts II and III—R. Chakravarty
 (Students' Friends, Allahabad.)

The following books on *Composition* are recommended :

- Bengali Composition—J. L. Banerji.
 Matriculation Bengali Composition—Mitra and Biswas

(d) Marathi

Text-books prescribed :

Paper I, Prose—उषः काल (a novel), by Hari Narayan Apte to be had of Messrs. Parchure Puranik & Co., Madhanbag, Bombay).

Paper II, Poetry—The following selections as published in the latest edition of “ Navnit ” (to be had of Messrs. Parchure Puranik & Co., Madhanbag, Bombay) :

- (१) वामन पंडिता चे स्फुट श्लोक, पानें (१३३—१४३)
- (२) मोरोपंत—कर्म पर्वतोल कर्णार्जन युद्धाच्या आर्या, पाने (३३०-३४६)

Books recommended for rapid reading :—

- (1) महाराष्ट्र शाब्द प्रवेशिका, भाग १-२, by G. G. Kanitkar (Macmillan & Co.).
- (2) Lele's गद्यसमुच्चय, भाग १-२.
- (3) आननूगीत, भाग १-२ by Anandrao Krishnaji Tekade.

Grammar—R. B. Joshi's Marathi Grammar “ Praudhabodha. ”

Recommended for the use of teachers :

- (1) Marathi Grammar, by M. K. Damle (published by the Indraprakash Press, Bombay).
- (2) मराठा ची सज वट in two volumes, by G. G. Mujumdar teacher, Sangli High School, Sangli.

(e) Gujarati.

Text-books prescribed :

Paper I, Prose—Patanniprabhuta, by K. M. Munshi (Messrs. N. M. Tripathi & Co., Book-sellers, Kalbadevi Road, Bombay).

Paper II, Poetry—(1) Ketkank Kavyo, Part I, by Nanalal Dalpatram Kavi.

(2) Shankit Hriday, by Ramamlal Vasantlal Desai.

The following books are recommended for supplementary reading (at least three of these books should be read by each candidate) :

(1) Gujarat-ni-juni Vartao, by Manilal Chhabaram Bhatt.

(2) Otarati Diwalo, by Kaka Kalelkar.

(3) Sahitya-Manjari, Guchha 2 and 3, by Sakarlal A. Dave (Ahmedabad).

(4) Vadlo, by Krishnalal Sridharani.

For Grammar the following book is recommended :

Madhyama Gujarati Vyakarana, by K. P. Trivedi (N. M. Tripathi, Bombay).

B.—OPTIONAL SUBJECTS.

(1) CLASSICAL LANGUAGES.

There will be two papers, each of three hours, in each of these languages—the first paper will be in the Prescribed Texts and Grammar and the second paper in Translation, Composition and Unseen.

SYLLABUS.

(a) Sanskrit.

Paper I—(a) Text-books prescribed :

(1) Ratna Samuechaya, by Ratna Chandra (Standard Literature Co., Allahabad). Annas 10.

(2) Sanskrita Praveshika, by Shankar Deva Pathak [Chandra Sanskrit Pustakalaya, Brindaban (Muttra)].

(b) Grammar—

NOTE—Questions on grammar will be asked from text-books prescribed under Paper I and outside but they must be confined to the prescribed syllabus on grammar and should carry not more than one-third of the total marks of the paper :

I.—Sandhis covered by the following sutras. It is not necessary to learn the sutras :

(a) स्वरसन्धि—

- (1) इको यणचि
- (2) एचोऽयवायावः ।
- (3) आद्गुणः ।
- (4) वृद्धिरेचि ।
- (5) एङः पदान्तादति ।
- (6) अकः सवर्णे दीर्घः ।

(b) ह्रस्वसन्धि—

- (1) स्तोश्चुनाश्चुः ।
- (2) ष्टुना ष्टुः ।
- (3) भलां जशोऽन्ते ।
- (4) भनां जश् भशि ।
- (5) खरि च ।
- (6) मोऽनुस्वारः ।

(o) विभक्तिसन्धि ---

- (1) विसर्जनोपसर्गः ।
- (2) भ्रमजुषो ऋः ।
- (3) अतो राश्रुतादह्रुः ।
- (4) षोडश च ।
- (5) एतत्तदाः सुलोपोऽकारनञ् भ्रमासं हलि ।
- (6) भ्रमणो अघोऽपूर्वस्य योऽर्षः ।

II—Declension of the following nouns and others of the same kind :

- (a) पृच्छिङ्ग—राम, हरि, सखि, गुरु, कर्तृ, पित्र, गा, भूमि, भगवन्, कारव, आत्मन्, राजन् ।
- (b) श्रीलङ्ग—रमा, मति, नदी, घेनु, वधु, वाच, मग्नि ।
- (c) नपुंसक—गृह, वारि, दधि, मधु, पयस्, शयन, जगत, नमि, प्रवर् ।
- (d) सर्वनाम—सर्व, पूर्वं, तद्, यद्, किम्, युष्मद्, अस्मद्, इत्थम् ।
- (e) Numerals. From एक to दशन in all genders.

III—Conjugation of the following roots in लट्, लङ्, लोट्, विधिलिङ्, लृट् ।

- (a) भ्वादि—भू (P), हस् (P), पठ् (P), रक्ष् (P) वद् (P), पच् (P), नप् (P), गम् (P), वृश् (P), सद् (P), ग्या (P), स्पृ (P), पा (P), जि, सेव् (A), लभ, वृथ (A), मृद् (A), मह्, (A), याच्, (U), नी (U), ह् (U).
- (b) अदादि—अद् (P), अस् (P), ब्रू (P), रुद् (P), दुह् (P), स्वप (P), हन (P), इ (P), गास् (A), शो (A).
- (c) जुहोत्यादि—हु (P), भो (P), दा (P).
- (d) दिवादि—दिव् (P), वृन् (P), नश् (P), अम् (P), युध (A), जन (A).
- (e) स्वादि—सु (U), आप् (P), शक् (P).
- (f) तुदादि—तुद् (P), इप् (P), स्पृश् (P), प्रच्छ् (P), सृ (A), मृच् (U).
- (g) रुधादि—रुध् (U), भुज् (U).
- (h) तनादि—तन् (U), कृ (U).
- (i) क्यादि—को (U), ग्रह् (U), ज्ञा (U).
- (j) चुरादि—चुर् (U), चिन्त् (U), कथ् (U), and भक्ष् (U).

P—Stands for परस्मैपद, A—Stands for आत्मनेपद

U—Stands for उभयपद ।

IV—Compounds—General definition, with illustrations of the following Samasas : तत्परुष, कर्मधारय, बहुव्रीहि, द्वन्द्व ।

Books recommended :—

- (1) Smaller Sanskrit Grammar, by Mr. M. R. Kale (Gopa Narayan & Co., Bombay). Price Rs.3.

(2) **Vyakaran Praveshika**, by Dr. Babu Ram Saxena (Ram Narain Lal, Allahabad). Price annas 12.

(3) **High School Grammar**, by Hari Har Pathak (Nand Kishore & Bros., Benares). Price annas 12.

Paper II—Translation, Composition and Unseen :

(a) Selected passages from books recommended for rapid reading and from others of equal difficulty for translation into English or Hindi ; and (b) translation of easy English or Hindi prose passage or sentences into Sanskrit ; and (c) composition of simple sentences in Sanskrit

Book recommended for rapid reading and for composition :

Sahityamanjari, by Pandit Ramesh Chandra Shastri (Sarda Mandir, Nai Sarak, Delhi).

N.B.—Sanskrit must be written in Devanagari script.

(b) Arabic.

Prescribed course :

Paper I—(a) Prose and Poetry.

عربي هائي اسكول كورس

Text :

نثر

١ — الاسكيات من نفحة اليمن

١ — قيل لما هرب موسى بن عمران

٢ — عن القاضي يحيى بن اكرم الى يستندده صيفه

٣ — قيل ان ملك الشام

٤ — قيل ان ملك الصين بلغه

٥ — قيل ان الصحاح خرج يوما

٦ — قيل ان بعض الحكماء لزم

٧ — قيل دخل حسن بن القصر

٨ — قيل ان الهمد قال اسليمان

٩ — قيل نزل رجل الاكاليين

١٠ — قيل ان بهرام الملك خرج

١١ — قيل ان المامون تكلم برما

١٢ — قيل كان رجل له غلام

١٣ — دخل لص دار مالك بن دينة

١٤ — قال بروس التمام السوس

١٥ — قيل ان رجلا اتى سليمان

١٦ — دير اصطفت اسد و ثعلب

١٧ — سال بعض الملوك رزية

١٨ — قيل ان رجلا جلس يوما يا كن

١٩ — ذك صاحب حياة الحيوان.

٢٠ — قيل لقيس بن سعد هل رايت

٢١ — قيل ان عليا رضى الله عنه

٢٢ — قيل ان، الهشيد جمع اربعة من الاطباء

٢ — الامثال من نفحة اليمن

١ — Verses from the beginning.

٣ — الاسفار من الف ليلة و ليل

٤ — السفر الثاني من اسفار السعد باد البحري

٥ — السفر الثالث ايضا ايضا

٢٥ — الفضائل والنقائص

الباب الخامس من الجزء الأول من مجانى الأدب

D -- اوصاف البلاد

١ — مكة المكرمة - من الإحلة التجارية

٢ — التحم المدني ايضا

٣ — اصيها، من مجانى الأدب

٤ — بلخ ايضا

٥ — بيت المقدس ايضا

٦ — بيروت من مجانى الأدب

٧ — تبت ايضا

٨ — حلب ايضا

٩ — دمشق ايضا

١٠ — شيراز ايضا

١١ — دلي ايضا

١٢ — الصين ايضا

١٣ — عمان ايضا

١٤ — ملببار ايضا

نظم

١ — من ديوان سيدنا على بن ابي طالب

١ — الناس من جهة التمثال اكفاء

٢ — ليبيك ليبيك انت مولاه

٣ — امن بعد تكفين النبي و داه

٤ — احسين انى راعظ و مؤدب

٥ — تغطى عيوب الماء كثرة ماله

٦ — و افضل قسم الله للمره عقله

٧ — ليس البلية فى ايماننا عجبنا

٨ — كن ابن من شئت و اكتسب ادبا

- ٩ — ايها الفاخر جهلاً بالنسب
 ١٠ — سليم العرض من حذر العجز ابا
 ١١ — و نفي سفته يواجهنى بجهل
 ١٢ — ادا شئت ان قلمى فزر متواترا
 ١٣ — قد شاب داسى و راس التحص , له يشب
 ١٤ — كنا كزوج حمامة فى ايكه
 ١٥ — شينان ان بكت الدماء عليهما
 ١٦ — اما الدنيا فناء ليس للدنيا ثبوت
 ١٧ — الم تم ان الدهر يوم وايلة
 ١٨ — قد كذبت ميتا فصحت حيا
 ١٩ — تغرب عن الارطان فى طلب العلم
 ٢٠ — تمنى رجال ان اموت و ان اس

From *از هاء العجب* by Muhammad Ibn Yusuf As-Surati (Jamia-i-Milhyia Press, Delhi) :

- ١ — اغر عليه للذبرة حاتم
 ٢ — ولا حير في عيش امرى لم يكن له
 ٣ — لقد نصحت لانوام و قلت هم
 ٤ — عجبت لمبتاع الصلابة بالهدى
 ٥ — بعدد الكد تكتسب المعالى
 ٦ — انى رايت و فى اليا م تحروبة
 ٧ — و ليس فتى الفتيان من راح و اغتدي
 ٨ — و لو ان ما اسعى لادنى معيشة
 ٩ — ولا حير في عيش امرى و هو خامر
 ١٠ — قلم فليس المء يوان عالما
 ١١ — علمى معر حيثما يمت ينفعنى
 ١٢ — اخي ان تمال العلم الا بسنة
 ١٣ — احو العلم حتى خالد بعد موته

- ١٣ — ولا تفكر الا على ما فعلته
 ١٥ — هـ . الدفء ما حملتها تتحمل
 ١٦ — اذا انقطعت عنى من العيش قد
 ١٧ — ايا من عاش فى الدنيا طويلا
 ١٨ — كامل بعينك هذا الانام
 ١٩ — وما الموه الا الاصعق ان لسانه
 ٢٠ — و كائن ترى من صامت لك معدم
 ٢١ — اذا قل ماء الوجه قل حياؤه
 ٢٢ — لذا جلساء لا نمل حديثهم
 ٢٣ — حذ من اخيك العفو و اغم ذنوبه

(5) Grammar :

(1) مهارة العربية (Parts I and II), by 'Mohammad Abdul Hadi Khas, Bahadurganj, Shahjahanpur,' to be had of the author,

or

(2) شارتوني مجيدى العربية (Shartuni (Majidi Press, Cawnpore).

N.B.— Questions on Grammar exclusively should be asked from the prescribed book as far as possible, and should carry about one-third of the total marks.

Paper II — Translation, Composition and Unseen :

(a) Selected passages for translation into Urdu.

(b) Translation of English or Urdu prose passage into Arabic.

The following two books are recommended for supplementary reading and they indicate the standard of the unseen passages to be set :

- (1) فوائد الادب (published by Rai Sahib M. Gulab Singh & Sons) 1933, pages 1 to 138, omitting the ' Tamrins.'
- (2) Either مجانب الادب Part 1 (Beirut, 1929), pages 61 to 136,

or

مدارج التمام (published by Anwar Ahmadi Press, Allahabad).

NOTE—Arabic words must be written in Arabic characters.

(c) Persian.

Prescribed course—

Part I—

(a) Text :—Prose and Poetry—

Prose.

1. The Gulistan : Saádi—

دیباچه : منت خدای را عز و جل اول وصف تو مانده ایم -
سبب تالیف کتاب : یک شب نامل ایام گذشته کتاب گلستان تمام شد -

باب اول - در سیرت بادشاهان

- (۱) حکایت - بادشاهی را شنیدم که بکشتن اسپرے بر روی خاک -
- (۲) یکی از ملوک خراسان طایر نماند -
- (۳) ملوک زاده را شنیدم در بند اقلیم نادر -
- (۴) طائفه دزدان عرب بجائے نیک مردان -
- (۵) یکی را از ملوک عجم زبر دستی روزگار -
- (۶) بادشاهی باغلامی عجمی اعراف بهشت است -
- (۷) هر مز را گفتند چشم پلنگ -
- (۸) یکی را از ملوک شنیدم گون آیند -
- (۹) یکی از بادشاهان در عالم -
- (۱۰) یکی از وزراء نیاز آرد -
- (۱۱) یکی از رفیقان سوراخ کزدم -
- (۱۲) تخته چند از روندگان نے برسنگ -
- (۱۳) یکی را از ملوک پائے پیل -
- (۱۴) یکی از بندگان عمر و لیث نشستنی -
- (۱۵) ملک زوزن اهل خود -
- (۱۶) یکی از ملوک عرب آستان دارن -
- (۱۷) یکی در صنعت کشتی نشانه نکرن -
- (۱۸) درویشی مجنون بگوشه صحرا می رود دست بدست -
- (۱۹) وزرائے نوشین روان پودین -
- (۲۰) شیادے کسپیل کنید -
- (۲۱) باطائفه بزرگان کارها باشد -
- (۲۲) اسکندر رومی نام نیکت بقرار -

باب دوم - در اخلاق درویشان

- (۱) زاهد سے مہمان بادشاہے ہوں بسیم دغل -
- (۲) یاد دارم کہ دو ایام طفولیت عاجز تر از خویش -
- (۳) در جامع بعلبک تا بزند مرد سخنگوی گوی -
- (۴) درویشے را ضرورتے پیش آمد درستان را پوستین -

باب چهارم - در فوائد خاموشی

- (۱) چراغے خورد مند دلبلش بیار -
- (۲) یکے از شعراء در مے چند ب د -
- (۳) خطیبے عیب خویش -

باب ہفتم - در تاثیر تربیت

جدال سعدی با مدعی در بیان توانگری و درویشی (یکے بصورت درویشان..
کہ دنیا و آخرت ہر دے) - کف تنوی بستان to اما نصاحت دنیا (delete)

باب ہشتم - در آداب صحبت

- (۱) دو کس رنج بیہودہ ہیزم است یا دفتو -
- (۲) دشمن ضعیف کہ بہ تیر می توان درخت -
- (۳) خشم بیہش از حد گرگ تیز دندان -
- (۴) ہر کہ علم خواند و عمل نکرد مادر مادر باشد -
- (۵) بے ہنراں ہنرمند را زبان مقال -
- (۶) ہر کرا دشمن پیہش است از کماں نیاید باز -
- (۷) حکیمے کہ با جہال در افتد ... زر کم نشود -
- (۸) جوہر اگر در خلاب ابراہیم از آذر -
- (۹) مشک آنست کہ خود مصحفے در میان زندیقان -
- (۱۰) قلبی بے ارادت فقیہ مردم آزار -
- (۱۱) خلاف راہ صواب است باشد بجز دانائی -
- (۱۲) حلم شتو چنانکہ معلوم است مگر بسوہان پاک -
- (۱۳) اجل کائنات ... آید با تو در جنگ -
- (۱۴) آنرا کہ گوی ارادت ... گم کنی کسے دہر نیست -
- (۱۵) حکیمے نامور را پرسیدند چو سرو باہی آزاد -

2. Anwar-i-Sahaili—

Chapter I up to : ملا حسین واعظ کاشفی

جان من خون کردہ خون کردہ را تدبیر نیست

3. Ruqqaat-i-Alamgiri—

رقعات عالمگیری

- (۱) (فرزند عالیجناب محمد اعظم ظاہر در سواری زیر قدمت ہزار جانست -
- (۲) (فرزند عالیجناب باظہار جاسوسان ... در ہرچہ باشی زون باش -
- (۳) (ایضا بیان داریم روزے بخدمت میان عبداللطیف قدس سرہ بآن فرزند قلمی شد -
- (۴) (فرزند عالیجناب داروغہ توپخانہ و دیوان خانہ غافل مشو -
- (۵) (ما کہ بیان نمی خوریم نوکر ہم چو او باید -
- (۶) (فرزند عالیجناب ظاہر ایشان یک ماہ بہ بخشائے بر حال ما -
- (۷) (ایضاً جانا عزیزا بگیرید و نگاہدارید -
- (۸) (ایضا در احمدآباد میو عرب تم کردیم صاحب خانہ را -
- (۹) (ایضا ہمنشین تو ... بہر استقبال می آید -
- (۱۰) (بنام پادشاه زانہ سوم سلطان محمد گام بخش کہ در وقت آخوس صادر فرمودند - (فرزند من جگر ہند من پا باندازہ ردا دواز کشید)

4. Safar Namah Nasiruddin Shah Qachar :

(سفر انگلستان) روز دو شنبہ دوم ذیقعدہ -

اینہا می رتصیدند up to

Poetry.

1. Bostan : Sa'adi—

دیباچہ — حمد باری عز و اسمہ :— بنام جہان دار جز بر پئے مصطفیٰ—
باب اول - دو عدل و راء و تدبیر جہاندار

و ابر افکند سپرد بالا کند (delete)

- (۱) (نگنجد کہمہاے ... بندہ حق گذار -
- (۲) (حکایت - یکے دیدم پسند آیدش -
- (۳) (بند دادن کسے ہمہورا - شنیدم کہ بانہی بست -
- (۴) (حکایت - چہ خوش دست ہست -
- (۵) (حکایت - شنیدم کہ شاپور باہ بست
- (۶) (گفتار - نہ بر حکم بہ نکون -

- (۷) حکایت شنیدم که فرماندهی ... زمین -
 (۸) حکایت - شنیدم که دارا ... کم بود -
 (۹) گفتار - تو که بشنوی ... خواهی بگو -
 (۱۰) حکایت - اتابک مرحوم تکه بن زنگی رحمة الله تعالی - در
 اخبار ... داشتند -

- (۱۱) حکایت - خدا دوست نامی ... بند و گوش -
 (۱۲) گفتار - مها زور مندی ... در گذشت -
 (۱۳) حکایت - چغان قنط سالی ... در نستان -
 (۱۴) حکایت - شنیدم که در مرز ... ظلم جست -
 (۱۵) حکایت - شنیدم که یکبار ... آید بگوش -
 (۱۶) در معنی نکوکاری و بدکاری و عاقبت آن - نکوکار مردم ... به پیش -
 (۱۷) حکایت - یک پند می داد ... لغوان - مع گفتار - الا تا ... مضر
 (۱۸) حکایت درین معنی - یک را حکایت ... به خاستست -
 (۱۹) حکایت - شنیدم که در مصر ... بالین گور -
 (۲۰) حکایت - قزل ارسلان ... کس است -
 (۲۱) حکایت - شنیدم که از نیکمردی ... خاتمت -
 (۲۲) حکایت - حکایت کنند از جفا ... مستجاب -
 (۲۳) گفتار - همی تا تو ابد ... در حلقه کارزار -
 (۲۴) گفتار - میان دو بد خواه ... نه آرام دل -
 (۲۵) گفتار - اندر حذر کردن از دشمنی که در طاقت آید - گرت خویش ...
 پیش بود -

باب دوم - در احسان

- (۱) اگر هوشمندی ... در مران -
 (۲) گفتار پدر مرده ... سه بر فتم پدر -
 (۳) حکایت در نر نکوکاری - کسه دید در خواب ... پیغمبر این -
 (۴) حکایت پدر مسک و پسر جوانمرد - یک رنت ... حسیب -
 (۵) مثل - بدختر چه خوش ... لافر شوی -
 (۶) باز آمدن بدحکایت فرزند خلف ... در نه حسرت خور -

- (۷) حکایت - اندر راحت رسانیدن همسایگان - برارید علیست -
- (۸) حکایت - شنیدم کہ مردے بہر منزلے -
- (۹) حکایت - ہسپتنگ تمیز -
- (۱۰) حکایت - کریم تنگدست با سائل - یکے را کرم چہ باک -
- (۱۱) حکایت - بنالید درویشے زبہر شد -
- (۱۲) حکایت - یکے سیوت کسی ست -
- (۱۳) حکایت - در معنی صید کردن دلہا با احسان - نرہ در یکے دو روز -
- (۱۴) حکایت - حاتم طائی و صفت جرانمرنی وی - شنیدم در ایام ماجرائے شنو -
- (۱۵) حکایت - ندانم کہ گفت ہمو ہند -
- (۱۶) حکایت - توانگر سفلہ و درویش صاحبدل - شنیدم کہ مغرورے دندان بہ از -
- (۱۷) گفتار - الا کہ طلبکار ہدف -
- (۱۸) حکایت - در معنی امرہ نیکو کاری - کسی دید سایہ ور -
- (۱۹) حکایت - پدر بخیل و فرزند لا اہالی :- یکے زہرہ دولت -
نواں یافتن
- (۲۰) گفتار - بہ گفتیم درباب عدل است و دان -

باب چہارم - در تواضع

- (۱) ز خاک آفریدت آزاں آدمی -
- (۲) حکایت - یکے قطرہ باراں نا ہست شد -
- (۳) گفتار - ز مغرور دنیا بستہ است پیش -
- (۴) حکایت - شنیدستم از راویان کلام عبادت نمائے -
- (۵) حکایت - ذوالقون مصری (ح) :- چنیں یاددارم نہ رود گلے -

باب ششم در قناعت

- (۱) خدا را نداقت تپش خورے ، -
- (۲) گفتار - کمال است در نفس کہ دون چاہ و مال -

باب ہفتم - در تربیت

- (۱) سخن در صلاح بند و کسے -
 (۲) اگر پائے در دامن آری سوختست -
 (۳) یکے خوب خلقی نادان مباحث -

باب ہشتم - در شکر

- (۱) نفس می نیارم زن فراموش گردن گناہ -
 (۲) گفتار - شب از نہر آسائش نایان فدارن مہوئے ..
 (۳) گفتار - نخست او ارادت ... زستار، شاہ -

باب نہم - در توبہ

- (۱) بیا اے کہ عمرت فہمت شمار -
 (۲) گفتار - جوانا رہ طاعت از نشستن بخیز -
 (۳) شبہ در جوانی سیاهی بگور -

باب دہم - مناجات

- (۱) بیا تا بہ آریم نیند از دم -
 (۲) تلم می بلرزد میں رون بر سرم -
 (۳) شنیدم کہ مستے زتاب نیند زعقوم مکن نا امید -

2. Tohfat-ul-Ahrar Jami (Newal Kishore Press, Lucknow)

Pages 15—17 مناجات چہارم - اے زکرم چارہ گر کار ہا
 پیرو پیغمبران

Pages 81—84 مقالہ سیزدہم مع حکایت عمر عبدالعزیز
 (۱) بسرت افسر صدر زخمزندان شان
 حکایت زاغ کہ رفتار کبک می آموخت و رفتار

Pages 93-94

خوب فراموش کرد

3. رباعیات عمر خیام beginning with the following lines :

- (۱) عشاق بدرگمیت اسپرند بیبا
- (۲) مه د آن نون که خلق خوانند او را
- (۳) خرم بگو داشتم دل پدو هم را
- (۴) عاتل بچه امید درین شوم سراے
- (۵) اے خواجه یکے کام روا کن مارا
- (۶) اے دل ز زمانه رسم احسان مطلب
- (۷) چون کار نه بو مراد ما خواهد رفت
- (۸) هر کو ورته ز عقل در دل بنکاشت
- (۹) امروز تو را دسترس فردا نیست
- (۱۰) سر از همه فاکسان نهان باید داشت
- (۱۱) هر دل که در و مهر و محبت بسرشت
- (۱۲) هر گه که غمے ملازم دل شودت
- (۱۳) در چشم محققان چه زیبا و چه زشت
- (۱۴) هر سبزه که بپرکنار جوئے رستست
- (۱۵) آن به که درین زمانه کم گیزی دوست
- (۱۶) چون مردن تو مردن یکبارگی است
- (۱۷) هشدار که دررگار شور انگیز است
- (۱۸) با دشمن و دوست فعل نیکه نیکوست
- (۱۹) نتخانه و کعبه خانه بندگی است
- (۲۰) گل گفت به از لقائے من رونے نیست

4. رباعیات اوسهید ادواخیر beginning with the lines :

- (۱) باز آ باز آ هر آنچه هستی باز آ
- (۲) گفتار نکو دارم و کردارم نیست
- (۳) عصیان خلایق از چه صحه است
- (۴) مردان خدا ز خدا کدار، دگه ند
- (۵) هرگز نام از یان تو غافل نشون

- (۶) اے خواجہ ز فکر گور غم می باید
 (۷) نا علم اگر عمل برابر گردد
 (۸) شاہی طلبی ہو گداے ہمہ باش
 (۹) روزے ز پدائے گلاب می گردیدم
 (۱۰) یارب ز قناعتم تو انکر گردان

(b) *Grammar*—Candidates are expected to know Etymology, Syntax and the more common figures of speech. The following books are recommended :

- (1) قواعد فارسیء عملی by Maulvi Ishaq Ali (Indian Press, Allahabad), or (2) Matriculation Persian Grammar, by Qazi Fazl Haq and Chaudhri Abdul Ghafur (Rai Sahib Gulab Singh & Sons, Lahore) or (3) دستور عدم by M. Mubin Naqawi (Jafri Bros., Allahabad).

Paper II—Translation, Composition and Unseen—

(a) Selected passages for translation into Urdu ; (b) an easy composition exercise in Persian ; and (c) translation of English or undu prose passage into Persian.

The following books are recommended for supplementary reading and they indicate the standard of the unseen passages to be set. Any two of them should be read by each student :

(1) عیار دانش (Selections by Sami Ullah Khan, published by Ram Narain Lal, Allahabad).

(2) گلدستہ دانش (Anwar-i-Ahmadi Press, Allahabad).

(3) نوشته جات ایہ انبیاء by M. Mustafa Hasan (Anwarul Matabi, Lucknow). Annas 12.

(4) ادبیات ترجمہ حصہ اول by M. Abid Hasan Faridi (Sri Ram Mehra & Co., Agra).

(5) Intikhab-i-Farsi-i-Qadim-o-Jadid, by S. Hadi Ali (United India Press, Lucknow). Annas 12.

(6) Nigar-i-Ajam, Part III, by Muhammad Tahir Faruqi (Ram Prasad & Bros., Agra). Annas 12.

Students who offer Persian are required to have such a knowledge of the etymology of the Arabic language as will enable them to explain all Arabic words and phrases which may occur in the text-books and in the books recommended for rapid reading in Persian.

NOTE—Persian words must be written in Persian characters.

(d) Latin.

Paper I—(a) Prescribed Prose and Poetry :

Text-books—

1. Cæsar : De Bello Gallico, Book VI.
2. Livy : Hannibalian War, Selections from Books XXI and XXII (Macmillan).
3. Virgil : Aeneid, Book VI.

*(b) Grammar—*Gildersleeve's Latin Grammar or Allen's Latin Grammar is recommended.

*N.B.—*Questions on Grammar should be asked from the prescribed books as far possible, and should carry about one-third of the total marks.

*Paper II—*Translation, Composition and Unseen :

Composition will include translation into Latin of easy English sentences and also of a simple passage of continuous English Prose.

Books prescribed :

Junior Latin Composition, by J. Mathewson Milne (Harrap & Co.)

(2) COMMERCE.

The examination will consist of two papers, each of three hours—
(a) one paper on Business or Commercial Practice and (b) one paper on either (i) Typewriting or (ii) Book-keeping.

The following is the syllabus in each subject :

Business or Commercial Practice.

Office routine. Drafting simple business and official letters, telegrams and cablegrams, including a knowledge of simple codes. Docketing, filing, copying and dispatch of letters. Ordinary postal regulations. Use of postal forms, such as Money Order, V.-P. P., Acknowledgment, Registration and insurance forms. Post Office Savings Bank Accounts. Telephone. Simple duplicating and other labour-saving appliances.

Meaning of ordinary commercial terms and abbreviations. Preparation of simple commercial documents, such as indents, invoice bills of exchange, promissory notes, statements of account. Nature and use of Bills of Lading and railway receipts. Simple banking transactions involving the nature and use of cheques, deposit slips and pass-books.

Books recommended

1. Extracts from Business Methods and Correspondence, by Arthur Fieldhouse.
2. Commercial Practice, Part I, by Roop Ram Gupta and K. L. Govil (Messrs. Gautama Bros. & Co., Cawnpore).
3. Modern Business Practice, by Balwan Singh (Sheo Prasad & Sons, Cawnpore). Rs.2-8.

Typewriting.

There will be no practical examination on the typewriter, but only a theory paper of two hours' duration involving questions on—

- *(a) the mechanical construction of the typewriter ;
- (b) care of the machine ;
- (c) display of matter, including headings and titles ; centring ;
contractions and abbreviations ; hyphenation ; punctuation ; stencil cutting ; adaptation of one or more

* Questions on the mechanism of the typewriter will be of a general nature, so that students who are acquainted with the mechanism of any of the more popular typewriting machines will be able to answer the questions (*vide* G. L. no. B-2773/V—3, dated the 5th September, 1924, from the Secretary of the Board).

characters to represent characters not given on the keyboard ; corrections ; erasures.

There will also be a second paper of one hour's duration, consisting of type-copying of three manuscripts.

Books recommended :

1. Pitman's or Remington's Typewriting Manual.
2. Modern Theory and Practicæ of Typewriting, Parts I and II, by S. R. Gupta and K. L. Agarwala (Gupta Bros. & Co., Khurja).
3. A Progressive Course in Typewriting Practice, by J. P. Rastogi (Rastogi & Co., Meerut).

Book-keeping.

Elementary theory of double entry book-keeping. Preparation and keeping of the Cash-book, Bought and Sold Books, Returns Books, Bills Receivable and Bills Payable Books, Journal and Ledger ; recording therein simple transactions involving purchases and sales ; bills receivable and payable ; real, personal and nominal accounts such as rent, salaries, interest, discounts, bad debts and depreciation. Drawing up the Trial Balance. Closing the Ledger, and preparing Trading and Profit and Loss Accounts and Balance Sheet. Simple banking transactions involving the nature and use of cheques, deposit slips and pass-book, and preparation of Bank Reconciliation Statements. The nature and use of Bills of Exchange and Promissory Notes. Petty Cash and Imprest Systems.

Books recommended :

1. Elementary Book-keeping, by Arthur Fieldhouse (Simpkin, Marshall & Co., Ltd., London, E.C. 4).
2. Book-keeping and Accountancy, by M. L. Agarwala (Ram Charan Lal Agarwal, Lucknow).
3. Groundwork of Book-keeping, by Y. D. Keskar (G. R. Bhargava & Sons, Chandausi).
4. High School Book-keeping and Accountancy, by G. S. Govil (Gupta Bros. & Co., Khurja). Rs.2-8.

(3) SCIENCE (PHYSICS AND CHEMISTRY).

The examination will consist of two papers—one in Physics and one in Chemistry, each of three hours.

SYLLABUS.**Physics.**

Measurements of length, area, volume, mass and weight. The balance. Density, specific gravity. Principle of Archimedes. The three states of matter. Pressure of air, simple barometer.

Heat—Expansion of solids, liquids and gases, temperature, thermometers, maximum and minimum thermometers, clinical thermometer, melting and boiling points, moist and dry air, evaporation, conduction, convection and radiation, thermos-flask. Unit of heat, specific heat, change of state, latent heat. Easy calculations.

Light—Rectilinear propagation of light. Reflection, refraction, plane, concave, convex mirrors, concave and convex lenses and prisms. Position of object and image with easy calculations. The camera, microscope, telescope, the eye as an optical instrument. Dispersion.

Magnetism—Attraction and repulsion, magnetization, terrestrial magnetism, magnetic meridian. The compass.

Electricity—Electrification by friction. Properties of a charged body. Conductors and insulators. The electroscope. Induction. The electrophorus. A simple cell, Leclanche cell, dry cell, arrangement of cells in series and parallel, magnetic, heating and chemical effect of a current. The simple galvanoscope, simple explanation of the telegraph, the electric bell, electric light.

Sound—(Treatment to be simple and non-mathematical.) Waves on water surface, wave length, frequency, amplitude, production and transmission of sound. Velocity of sound in air and in water. The gramophone.

Practical work.

The following list of experiments indicates the minimum amount of practical work required to be performed by students. Other experiments of equal educational value may be substituted. The experiments should be performed individually as far as can be arranged. The

teaching of theory should be fully illustrated by experiments and demonstrations are to be considered an essential part of the teacher's work.

NOTE—A chart giving a list of the experiments to be performed and the date on which each student completes each experiment should be maintained and hung in the laboratory at each school recognized in Science (*vide* G. L. no. B/3149—3300/V—36, dated the 21st December, 1925, from the Secretary of the Board).

General—Determination of the relative density of—

- (a) bodies which float in water ;
- (b) bodies which sink in water ;
- (c) liquids.

Use of the calipers.

Determination of the radius of a wire by Archimedes' principle.

Determination of the internal radius of a narrow tube.

Principle of moments.

Light—Reflection at a plane mirror.

Focal length of a concave mirror.

Refraction through a prism.

Refractive index of glass and water.

Focal length of a convex lens.

Heat—Cooling curve of water and wax or naphthalene.

Determination of Specific Heat.

Determination of the Latent Heat of Ice.

Determination of the Latent Heat of Steam.

Magnetism—Mapping out lines of force by a small compass needle.

Determination of the direction of the Magnetic meridian.

Electricity—Charging an electroscope by Conduction and Induction.

The magnetic effect of a current on a magnetic needle.

The electro-magnet.

NOTE—Until the practical examinations in the High School Examination are instituted the theory paper should include two questions based on the prescribed practical work.

Books recommended :

1. Experimental Science for Indian Schools, by Gregory and Hodges (Macmillan). Rs.3.
2. An Oxford High School Physics, by A. D. Joshi (Oxford University Press). Rs.3.

3. Oxford High School Physics (Urdu and Hindi).

4. Prarambhik Bhautik Vigyan (Hindi), by N. K. Sethi (Kashi Hindu Vishwa Vidyalaya, Benares).

The following books on Physics are recommended for teachers' reference library :

1. Every-day Physics, by H. E. Hadley (Macmillan & Co.).
Rs.4.

2. An Introduction to Physical Science, by Ivor B. Hart (Oxford University Press). Rs.2.

3. The Science of Every-day Life, by E. V. Buskirk, E. L. Smith and W. L. Nourse (Constable & Co.).

4. New Practical Physics, by N. H. Black and H. N. Davis (Macmillan).

5. Experimental Hydrostatics and Mechanics, by Nightingale (G. Bell & Sons).

6. Heat, Light and Sound, by Nightingale (G. Bell & Sons).

7. Magnetism and Electricity, by Nightingale (G. Bell & Sons).
Recommended for school library :

1. A Class Book of Physics, by R. A. Gregory and H. E. Hadley (Macmillan & Co.). Rs.3-12.

2. A Course of Physics, by Charles H. Draper (Blackie & Sons). Rs.3-12.

3. An Elementary Physics, by K. C. Bhattacharya (Indian Press, Allahabad). Rs.2.

4. Matriculation Physics, Heat, Light and Sound (University Tutorial Press).

Chemistry.

States of matter : solids, liquids and gases. Change of state. Melting and boiling points, effects of impurities on melting and boiling points. Evaporation, distillation, sublimation. Solubility of solids in water and alcohol, saturated solutions, determination of solubility in water, influence of temperature on solubility of solids and gases in water. Crystallization, water of crystallization. (Practical importance of processes like decantation, filtration and precipitation in every-day life.)

Chemical and Physical change.

Elements (metals and non-metals). Compounds and mixtures. Study of common properties of the following substances (including their solubility and action of heat) :

(a) *Elements*—Iron, copper, lead, tin, zinc, aluminium, mercury, magnesium, carbon, phosphorus, sulphur (including their chief allotropic forms) and iodine.

(b) *Compounds*—Common salt, nitre, sodium carbonate, sodium bicarbonate, chalk, blue and green vitriols, salammoniac, red lead and mercuric oxide.

Study of air, its composition.—Rusting of metals. Meaning of combustion, slow and rapid combustion studied with iron, magnesium and phosphorus. Study of water including the action of sodium, magnesium and iron. Electrolysis of water, synthesis of water and its composition. Hard and soft waters.

Preparation, properties and tests of the following :

Oxygen (terms oxidation and reduction, oxides, acids, bases and salts are to be explained). Nitrogen, Chlorine, Carbon-dioxide, Ammonia, Sulphur-dioxide.

Hydrochloric acid, Nitric acid and Sulphuric acid.

Laws of constant and multiple proportions. Atoms, molecules. Daltons' Atomic Theory. Gay Lussac's Law. Avogadro's Hypothesis. Explanation of the terms—formulae, chemical equations, equivalent, atomic and molecular weights, valency, Determination of equivalent weights. To find the empirical formula of a compound from

its percentage composition. Easy numerical questions on simple equations that are in their syllabus.

Norms (1)—The course given below indicates the minimum amount of practical work required to be performed by students and suggests a method of treatment of the syllabus for the guidance of teachers. They may substitute other experiments of equal educational value. Practical work should be co-ordinated with the theoretical work and follow it consecutively, as far as possible. Practical experiments should be performed by students individually as far as can be arranged.

(2) A chart giving a list of experiments to be performed and the date on which each student completes each experiment should be maintained and hung in the laboratory of each school recognized in Science (*vide* G. L. no. B/3149—3300/V—36, dated the 21st December, 1925, from the Secretary of the Board).

The use of stencils in answering papers in Science is not allowed.

(Classes IX and X)

Classes IX and X will have six periods of Science per week—for at least 27 working weeks; this gives a total of 162 periods in class IX :

Detailed syllabus	Minimum list of experiments which should be done by the pupils individually
Effect of dissolved substances on boiling point.	To find B. P. of solution of calcium chloride. Solution of different strengths.
Distillation. Purification of water ..	To bend tubes, bore corks, set up apparatus for distillation and find B. P. before and after distillation.
Elements and compounds	To examine the elements—sulphur, copper, lead, mercury, zinc. To examine the compounds, ferrous sulphate, copper sulphate, lead oxide, mercury oxide and regain the elements, where possible.
Metals and non-metals, properties : The atmosphere. Combustion, active and inactive air.	Burning a candle in a bell jar. Repeat with sulphur, phosphorus. To measure the proportion of air used up when a substance burns in air.
Rusting	To show iron will not rust in dry air. To measure the air used up when iron rusts in air.
Increase in mass in rusting and burning	To show increase in mass when magnesium and iron burns in air and when iron rusts in air—when a candle burns in air.
Explanation of above. Oxygen . ..	Preparation from mercuric oxide and potassium chlorate in small quantities and in large quantities from manganese dioxide and potassium chlorate, its properties.
Metals, non-metals, and their oxides ..	To show loss in mass when potassium chlorate is heated.
Elementary ideas of qualitative analysis	Their basic and acidic properties.

Detailed syllabus	Minimum list of experiments which should be done by the pupils individually
Nitrogen. Its use in the atmosphere ..	*Properties, to find percentage of nitrogen in air by pyrogallic acid.
Water not an element	Action of sodium on water. Action of magnesium on boiling water. Action of steam on iron (lecture room). Examination of oxide of iron formed. Increase in mass. Comparison with iron rust.
Preparation of hydrogen ; its properties	From zinc and sulphuric acid. What happens to the zinc. What happens when hydrogen burns in air. Explosion of hydrogen with air.
Carbon	*Electrolysis of water and its composition by volume. Action of hydrogen on the oxides of copper and iron when heated. Properties and varieties.
Carbonic acid gas. Chalk	*Formation when carbon or carbonaceous matter burns in air. Effects of acids on chalk. Examination of the gas, properties of gas obtained by the effect of strongly heating chalk. Examination of lime, difference between properties of chalk and lime, loss in mass on heating chalk.
Animal and plant life	*Formation of oxygen by plants.
Chlorine gas	Preparation from manganese dioxide and hydrochloric acid. Its properties.
Hydrochloric acid gas	Preparation from sodium chloride and sulphuric acid. Its properties.
Ammonia gas	Preparation from ammonium chloride and quicklime. Its properties.
Sulphur	Effect of heat.

* Experiments marked with an asterisk should be shown by the teacher in the class room.

NOTE—Until the practical examinations in the High School Examination are instituted the theory paper should include two questions based on the prescribed practical work.

The following books are recommended for use in Chemistry :

(1) Gregory and Hodges ; Experimental Science for Indian schools (Macmillan). Rs.3.

(2) A School Course of Chemistry, by J. R. Partington (Macmillan).

(3) High School Chemistry, by G. S. Bhargava and M. L. Bhargava (Nand Kishore & Bros., Benares). Rs.2.

(4) A First Course in Inorganic Chemistry, by Bailey (University Tutorial Press, London).

(5) An Elementary Chemistry for Indian Schools, by K. C. Bhattacharya (Revised and enlarged edition, 1934) (Indian Press, Allahabad). Rs.2-4.

(4) AGRICULTURE.

The examination will consist of two papers of three hours each.

The first paper will be on the subject-matter in the syllabus up to and including sub-section (5)—Tillage ; and the second paper on the remaining portion.

SYLLABUS.

(1) *Climatology*.—Weather and seasons in the country and in the provinces.

(2) *Soils*.—Soil-forming processes.

Classification of soils on the basis of size of soil particles :

Gravel (kankar).

Sand (bhur).

Sandy loam (retili domat).

Loam (domat).

Clay loam (matyar domat).

Clay (matyar).

Texture of soils.—Arrangement and size of particles of soil ; specific gravity ; pore space ; surfaces exposed ; friability.

Organic matter in the soils.—Its sources, distribution and maintenance. Its effect on soil.

Soil water.—Its forms, its movements.

Control of soil moisture.—Run-off losses ; percolation ; evaporation. Methods of checking the same.

Soil heat.—Relation of heat to germination and growth. Sources of soil heat. Factors affecting soil temperature. Effect of colour on radiation.

(3) *Irrigation and Drainage*—

Water requirements of plants.—Factors affecting transpiration. Wilting point. Conserving of moisture. Effect of excessive moisture.

Sources of water for irrigation.—Rain, its annual and seasonal variations ; wells including tube-wells, rivers, canals, tanks and bandhis.

Types of simple water-lifts.—Persian wheel, chain pump, charsa, baldeo balti, dhekli, power pumps.

Distribution of water.—Flow system ; pakka and kachoha channels ; planning and laying out of irrigation channels.

Drainage.—Earth bunds. Conditions making drainage necessary. Possible relation between irrigation and drainage.

(4) *Manures and manuring.*—Farm-yard manure ; composting ; manure-pit ; green manuring ; poudrette ; preservation ; application ; oil-cakes ; chemical fertilizers.

(5) *Tillage.*—Objects of tillage and description of principal implements of tillage :

- | | | |
|------------------------------------|--|-----------------|
| (a) Ploughs. | \| | (c) Patela. |
| (b) Cultivators including harrows. | | (d) Hand tools. |

(6) *The Plant.*—General description of a plant and its parts and the functions of each. Plant growth, substances necessary for plant growth, sources of those substances, storage and movements of food materials. Necessary conditions for the normal growth of a plant—air, heat, light and moisture.

(7) *Farm Crops.*—Preliminary cultivation, sowing, weeding, irrigation, manurial requirements, harvesting, storage, and marketing of the following crops :

Wheat, gram, rice, maize, jawar, arhar, cotton, mustard, sanai, potatoes, sugarcane, and vegetables.

(8) *Farm Animals.*—Buffaloes, cows and oxen, goats ; their care and maintenance.

(9) *Patwari Papers.*—Limited to village maps, khasra, khatauni and khewat.

Candidates are required to maintain note-books of all work done, both theoretical and practical. These note-books should be inspected periodically and initialed by the teachers. They may be called for at the time of the examination.

Candidates will undergo the following course of practical work in connexion with the above syllabus :

1. Each student is required to keep records of the following facts noted in the school observatory :

(a) Rainfall.

- (b) Maximum and minimum temperature of air in shade; readings to be taken at least once a week.
- (c) Wind directions.
- (d) The nature of frost, fog, hail and dust-storm and the time of their occurrence.
- (e) Afternoon temperature of black soil, light coloured soil, rolled soil, and mulched soil.

2. Separation of stones, gravel, and fine soil by sieve. Weight of different soils in unit volume. Organic matter in soil and sub-soil, its power of absorbing moisture. Amount of percolation of water in a unit of time through sand, clay and loam. Classification of soils as clay, loam, sandy by sight and touch.

3. Rough estimates of amount of water discharged in one hour by the different water-lifts in use.

4. Results of applications of green manuring, farm-yard manure, oil-cakes, ground bones, nitrate, applied to school garden plots.

5. Use of farm implements.

6. Drawings of the following plants :

Juar, cotton, wheat, gram, potato and okra (bhindi).

7. Records of notes of cultivation of at least one *kharif* crop, one *rabi* crop, sugarcane, one garden crop, from the time of preparation of seed-bed to marketing, actually observed by the candidate.

8. Description of local breeds of farm animals. Recognition of different feeding stuffs.

General lay-out of farm buildings.

NOTE—Until the practical examinations in the High School Examination are instituted the theory paper should include two questions based on the prescribed practical work.

Books recommended :

- 1. Meston Readers, Parts 1 to 3, by K. S. M. A. Qayum.
- 2. Krishi Shastra, by Tej Shanker Kochak.
- 3. Tisdale's Books on Dairying.

4. Monthly Journals, Leaflets, and Bulletins issued by the United Provinces Agricultural Department.

5. Lessons in Indian Agriculture, by D. Clouston (Macmillan & Co., Ltd.).

6. Rahbar Zarait, by T. S. Kochak (Krishi Shastra Office, Sundohundevi, Chaupatiyan, Lucknow). Rs.2-8.

7. Krishi Vigyan, Part I, by Sita Prasad Tiwari.

8. Studies in Agricultural Improvement, English, Hindi and Urdu editions, by C. Maya Das (Government Central Press, U. P., Allahabad). Price, English edition, Re.1-4.

9. Phoolon-ki-kheti aur Vyavasaya, by N. D. Vyas of the Imperial Institute of Agriculture Research, Pusa (Bihar).

(5) DRAWING.

The examination will consist of two papers of three hours each. The first paper will be in two parts (a) on Object Drawing from a group of objects retained before the class, and (b) from a choice of three familiar objects to be drawn entirely from memory in outline only in pencil. The number of marks for (a) should be 35 and for (b) 15. The second paper will be on Geometrical Drawing.

SYLLABUS.

Object Drawing.—This should be in Pastel, and should comprise common objects from nature.

The Round.—Such as Orange, Mango, Apple, Tomato, Lichi, Melon, Peach ; Hockey and other Balls, Nutmeg, Walnut, etc.

The Cylindrical.—Such as Flower-pot, Household Utensils, Degchies, Cups, Saucers, Surahi Bowls, Tumblers, Lotas, Bottles of kinds, Inkpots, Gloy Bottle, Paper-weight, Candle-stick, etc.

The Rectilinear.—Open Book, Cigar and Cigarette Boxes, Match Box, Attaché Case, Cash Box, Flags, etc.

Miscellaneous.—Hockey Sticks, Cricket Bat, Tennis Racket, Mallet, Hammer, Screw Driver, Chisels, Padlock, Key, Scissors, Knives, Hatchet, etc.

Nature Study.—Simple flowers and leaves of all sorts. Butterflies, Beetles, etc.

The above outline which is but suggestive should be in Pastel on Tinted Paper and will involve instruction in the art of Blending Colours, Colour Harmonies, Colour Schemes and Shadows.

Memory Drawing.—The drawing of some simple and familiar objects entirely from memory.

Books recommended :

Pastel work for the standards, 3 volumes, by A. G. Tompkins (Messrs. Isaac Pitman & Sons, London, Bath and New York). Rs.3 each volume.

Materials.—Pastels, paper, pencils, etc. left to the choice of the teachers concerned.

Geometrical Drawing.—(1) The theory and use of instruments especially of the protractor and Marquise scale.

(2) Italic and Plain block-letter writing.

(3) The whole of practical plane geometry.

(4) Drawing of scales, viz. scale of chords ; diagonal scale ; plane scale ; comparative scales.

Books recommended :

(1) *Geometry, Plane and Solid* (Morris), (Longmans, Green & Co., Bombay and London.)

(2) *Practical Plane and Solid Geometry*, by T. W. Wood (George Gill & Co., Minerva House, Warwick Lane, E. C., London), Re.1-1.

(3) *Modern Art Geometry*, by R. C. Singhal (English Hindi and Urdu editions) (Messrs. Ram Narain Lal & Sons, Allahabad). Re.1-4.

(4) *Geometrical Drawing (Plane)*, by M. K. Varma (Popular Book Depot, Educational Publishers, Agra). Re.1-8.

Materials —School Geometry set (Reeves).

Recommended for reference by teachers :

(1) *Roorkee Treatise on Drawing, Part I* (Roorkee Thomason College Book Depot, Roorkee).

(2) *The Teacher's Manual of Drawing*, by Weston, published by Thomas Nelson & Sons and sold by Wheeler, Bombay and Indian School Supply Book Depot, Calcutta (price Rs.4-6).

(6) MANUAL TRAINING.

The examination will consist of one paper of three hours in Drawing and theory and a practical examination of four hours in Woodwork.

				Maximum marks.
Theory paper	..	..	..	40
Practice	..	..	..	60

A minimum pass of 15 marks has been fixed for the practical examination.

SYLLABUS.**(1) Woodwork—**

- (a) A series of models graduated in respect of the tool manipulations involved, to be made in wood, from working drawings (drawn in plan and elevations, conventional isometric projection) or from a given pattern in wood; the construction of the models to involve the use of one or more of the following tools : Jack Plane, Try Square, Marking Gauge, Marking Knife, Smoothing Plane, Tenon Saw, Bevel, Screw Driver, Firmer Chisel, Hammer, Mallet, Bradawl, Nail Punch, Compass, Firmer Gauge, Gimlet, Frame Saw, Spoke Shave, Brace and Bit, File.

The following joints at least should be included amongst the models :

Half-lap, Housing, Mortise and Tenon, Half-lap Dovetail, Box Dovetail, Edge-dovetail, Bridle.

- (b) The care and maintenance in good working condition of the above-mentioned tools, excluding saw setting and sharpening.
- (c) (i) Simple mechanical principles involved in the use of the above mentioned tools.
- (ii) Preliminary idea of the structure, felling, seasoning of wood, decay of timber with its causes, characteristics of common timber such as teak, tun, deodar, kail, shesham, mango, phaldu, and nim, chambeli or bakayan.

(2) *Drawing*—

Drawing in plans and elevations of all models in the course and in conventional isometric projection of those of a rectangular shape.

NOTES—(1) A scheme drawn up on the above lines is given below. Teachers need not keep strictly to the particular model mentioned in this scheme, but if any changes in the models are made these should not involve changes in the new tool manipulations employed. The course should, if possible, be commenced in class VII.

(2) Attention is invited to the suggestions for the teaching of Manual Training contained in Director of Public Instruction's circular no. 2 of 1917-18.

**Books recommended for the use of teachers :*

1. The Teacher's Handbook of Sloyd, by O. Salloman. (George Phillip & Sons.) 6s.
2. Manual Instruction ; Woodwork, by J. C. Pearson. (George Phillip & Sons.) 6s.
3. McDougall's Light Woodwork, by David Thomas. (McDougall's Educational Co., London.) 1s.
4. The Scholar's Woodwork Class-book, by T. W. Berry. (Cassell & Co., London.) 1s.
5. Practical Drawing, by T. S. Usherwood. (Macmillan & Co.) 2s.
6. Educational Handwork—Intermediate Course, by J. L. Martin and C. V. Manley. (Blackie & Sons.) 1s. 6d.
7. Educational Handwork or Manual Training, by A. H. Jenkins University Tutorial Press, Burlington House, Cambridge).
8. The "Self-help" Course of Woodwork Exercise, by E. J. Andrews (Charles and Dible, 10 Paternoster Square, London.) 2s. net.
9. Handicraft in Wood and Metal, Shirley and Hooper (Batsford). Rs.9.

* In connexion with the books recommended for the use of teachers in this Prospectus it should be noted that there is in addition a number of books approved for the use of teachers generally (*vide* list of books approved for the use of teachers of Anglo-Vernacular and Vernacular Schools, dated the 31st July, 1916, and its supplements issued annually).

(7) A MODERN EUROPEAN LANGUAGE.**French.**

There will be two papers of three hours each. The first paper will consist of passages for translation from the Prescribed Text-books, questions on the Prescribed Text-books, and questions on Grammar. The second paper will consist of Unseen passages and idiomatic phrase for translation from French into English and *vice versa*.

Text-books prescribed :

1. *Ed. About* :—Le Nez d'un Notaire. Macmillan's Edition (Siepmann's Series).
2. *Du Camp* :—La Dette de Jeu (Cambridge University Press)
3. *Daudet* :—Quatre-vingt Contes. (Oxford University Press).
4. *La Fontaine* :—Selected Fables. Hugon (Oxford University Press).

Grammar recommended :

French Grammar (Sonnenschein's Parallel Grammar Series) or Heath's Modern French Grammar (Harrap).

NOTE—The *vice versa* examination has been dropped for the present.

(8) DOMESTIC SCIENCE

The examination will consist of two papers of three hours each. The first paper will contain questions on Physiology, Hygiene, Household Management, and Home-nursing. The second paper will consist of the practical examination in Sewing to be held at the same time as the examination in written work. There will also be an oral and practical test in First Aid and Home-nursing, and a practical test in Cooking. Two periods a week for practical work are to be set apart in the time-table.

	Marks.
First paper	50
Sewing	20
First Aid and practical work in Home-nursing and Cooking	30

Candidates should be required to gain pass marks separately in—

(a) First paper (Physiology, Hygiene, Household Management and Home-nursing), the minimum pass marks being 15.

(b) Sewing; First Aid with practical work in Home-nursing and Cooking, the minimum pass marks in the second paper being 15, the aggregate in the two papers being 33 per cent.

SYLLABUS

As a basis for the teaching of Hygiene and Home-nursing there should be a preliminary simple treatment of the following topics in Elementary Physiology :

The human skeleton, the organs of digestion, the circulation of the blood, the nervous system, respiration.

I.—Hygiene.

NOTE—Great importance should be attached to practical work wherever the subject admits of this.

1st.—Composition of air, importance of pure air, impurities of air, diseases caused by impure air, ventilation.

Water.—Composition of water; quantity of water required; source of water-supply, springs, deep wells, surface wells, rivers, tanks how

water is pollution ; how to prevent pollution of water ; how to purify water ; boiling and filtering.

Food.—Composition of food ; composition of good diet and its importance ; preservation of food ; cooking of food ; drinks and condiments.

Personal Hygiene.—Cleanliness of body (hair, nails, teeth, etc.) ; clothing ; exercise ; importance of temperance ; the use of *pan*, opium and other drugs ; spitting.

Precautions against diseases.—Infectious diseases (smallpox, measles and diphtheria, etc.) ; colds and influenza ; tuberculosis enteric fever ; dysentery and diarrhoea ; cholera . plague malaria . itch ; leprosy ; ophthalmia (sore-eyes).

II.—*First Aid.*

First Lecture.

A. Principles of First Aid.

B. A brief description of the Structure and Functions of the body.

Practical—The triangular bandage and its application to the Head, Chest, Back, Shoulder, Elbow, Hand, Hip, Knee, and Foot. Arm Slings (large, small and St. John).

Second Lecture.

A. *Fractures*—Causes, varieties, signs and symptoms.

B. Treatment of fractures—general rules.

C. Individual fractures—The Skull, Lower Jaw, Spine, Ribs. Breast-bone, Collar-bone, Shoulder-blade, Arm, Forearm, Hand.

Practical—Treatment of fractures. Application of splints.

Third Lecture.

A. Individual fractures (contd.)—Pelvis, Thigh, Knee-cap, Leg and Foot.

B. Dislocations, Sprains, Strains—Signs, symptoms and treatment.

Practical—Treatment of fractures. Treatment of strains.

Fourth Lecture.

A. General description of the Heart and Blood Vessels.

B. Circulation of the Blood.

C. Wounds and Haemorrhage.

D. Wounds accompanied by Arterial Haemorrhage.

E. The situation of the main arteries—Pressure points.

F. Wounds accompanied by Capillary or Venous Haemorrhage, Varicose Veins.

G. Haemorrhage from special regions—Bruises.

Practical—Compression of arteries.

Fifth Lecture.

A. Injuries to Internal Organs—Haemorrhage.

B. Burns, Scalds, Stings, Bites of snakes and rabid animals, frost bite.

C. Foreign Bodies in Eye, Ear and Nose.

Practical—Treatment of Fractures and Haemorrhage.

Sixth Lecture.

A. Respiration—Natural and Artificial.

B. Asphyxia.

C. The Nervous System.

D. Insensibility.

Practical—Artificial Respiration.

Seventh Lecture.

A. Poisons.

B. Transport of the Injured.

(i) For Males—Hand Seats and Stretcher Exercise.

(ii) For Females—Hand Seats only.

Practical—Transport of the Injured.

Eighth Lecture.

A. Preparation for the Reception of Accident cases.

B. Recapitulation.

Practical—Preparation of the bed, removing clothes, etc.

III.—Home-nursing.

NOTE—None of the work is to be purely theoretical. Practice must be given in every point which allows of practical work.

First Lecture.

1. Definition of Home-nursing. Qualifications of the Nurses.

2. Structure and functions of the human body.

3. The Roller bandage, and its application.

Practical—Roller bandaging.

Second Lecture

1. The Sick room : choice, preparation, cleaning and lighting.

2. Ventilation and warming.
3. The bed and bed-making. Beds for special cases.
Practical—Bed-making, changing sheets, Roller bandaging.

Third Lecture

1. Details of Nursing ; Washing the patient, pulse, respiration, temperature.
2. Observation of the Sick : Signs and symptoms to be noted ; Reports.

Practical—Taking and recording pulse, respiration and temperature. Roller bandaging.

Fourth Lecture

1. Food : Digestion and the Digestive System.
2. Diets : Milk ; serving food.
3. Beverages and invalid cookery.

Practical—Feeding a helpless patient. Roller bandaging.

Fifth Lecture

1. Medicines and their Administration.
2. External Applications ; Cold, Heat ; Counter-irritants.

Practical—Measuring medicines. Poultices and fomentations.

Sixth Lecture

1. Fever.
2. Infection and Disinfection.
3. Specific Infectious Diseases.

Practical—Mixing disinfectant solutions. Sponging and giving packs.

Seventh Lecture

1. Sick children : Common ailments.
2. Recapitulation.

Practical—General Revision.

IV.—Care and training of children

Food, sleep, exercise, play, clothing, cleanliness, surroundings.

V.—Household Management

A.—Choice of House. Furniture and Decoration. Distribution of rooms. Cleansing and care of house and furniture. Disposal of refuse and sewage. Precautions against flies and mosquitoes.

B.—Care of the kitchen.

Preparation of simple food.

Two of the following groups to be selected of which group (i) is compulsory :

- (i) Preparation of *roti*, rice, *dal*, and *tarkari*.
- (ii) Preparation and care of milk ; and making of sweets.
- (iii) Preparation and care of meat. (One dish only required.)
- (iv) Preparation of preserves (*murabba*) and pickles (*achars*).

C,—Duties of the mistress of household.

Proper distribution of daily activities. Accounts and budgeting of expenditure.

VI.—Clothing

- (i) Choice and care of clothing.
- (ii) Methods of washing and ironing cotton, woollen, and silk materials.

NOTE—Practical work should be done in washing and ironing and in dyeing and starching.

- (iii) Sewing and cutting out.

A good standard of skill will be required in the various stitches that are necessary in making up garments and in mending worn articles of clothing.

Each candidate should select three of the following groups of which two should be from (a), (b) and (c) :

- (a) To draft, cut out to measurement and make up the following garments for a man :

A coat or shirt and a *pyjama* (two garments required).

- (b) To draft, cut out to measurement and make up the following garments for a woman :

A *kurti* or blouse or night dress and a skirt or petticoat or *pyjamas* or knickers (two garments required).

- (c) To draft, cut out to measurement and make up the following garments for a child :

A frock or petticoat and *pyjamas* or knickers (two garments required).

(d) Drawn thread or crewel work or English embroidery or *chikan* work or *sulme sitare*.

*(e) Spinning.

*(f) Weaving.

Notes should be kept. Work in drafting that is done throughout the course should be kept for inspection.

NOTE—As an indication of the scope and standard of instruction in hygiene and home-nursing teachers are referred to Sections II, I' I and IV of Personal and Domestic Hygiene for the School and Home, by Mrs. Harold Hendley (Rai Sahib M. Gulab Singh & Sons, Lahore), also to Indian Manual of First Aid and Indian Home-nursing, published by the Indian Council of the St. John Ambulance Association (Thacker Spink & Co., Calcutta).

Books for teachers' reference :

1. Elementary Physiology, by Bhatia and Suri (Longmans, Green & Co.).
2. Tropical Hygiene, by Lukis and Blackham (Thacker, Spink & Co.).
3. Outline of Domestic Science (for Indian Readers), by Lilian Sawtell (Longmans, Green & Co.).
4. Manual of Mother-Craft, by Dr. Balfour (St. John Ambulance Association, New Delhi). Annas 10.
5. Child-welfare, by Dr. S. K. Mukerji (Indian Press, Allahabad).
6. Domestic Science for High Schools in India, by Needham (Oxford University Press).
7. Good House-keeping (magazine).
8. Home-nursing (for Indian Women living in Indian Style), compiled by Lady Petrie and Dr. Ruth Young (St. John Ambulance Association, New Delhi). (Recommended for the use of students also.)
9. Needle work for Junior Schools and Needle work for Senior Schools, by Gertrude, Fearnside (Evans Bros., Montague House, Russel Square, London, W. C. 1).
10. Home Science (Christian Literature Society, Allahabad). (For students' reference also).

* The following general rules should apply to the practical test in spinning and weaving in all years :

(1) Candidates should be required to state the number of yards of thread spun and the number of counts of the thread.

(2) Marks should be allotted for the quantity of thread spun and the fineness and evenness of the thread.

(3) In the weaving test the candidate's spread and evenness of work should be taken into account in awarding marks.

(9) METAL WORK

The examination will consist of one paper of three hours in Drawing and Theory, and a practical test for four hours in Forging and Fitting Work.

			Maximum marks.
Theory paper	..	..	40
Practice	..	..	60

A minimum pass of 15 marks has been fixed for the practical examination.

SYLLABUS.

(a) *Practical work*—A series of models graded in respect of tool manipulation to be made in metal from Working Drawings or from Patterns, and involving the use of Forge, Anvil, Vice, Tongs, Top and Bottom Tools, Drills, Hammers, Files, Stocks and Dies, etc. Exercises should include Drawing Down, Upsetting, Welding, Annealing, Hardening and Tempering, Rivetting, etc., and such objects as Punches (nail and centre), Scribing Knife, Nuts and Bolts, Rings, Chain Links, Hasp and Staple, Keys (for shafting), Coat Hook, Wall Bracket, Letter Weight, Calipers, Wall-Holdfast, Cold Chisels, Drills, etc. Soldering and Brazing.

(b) *Theoretical work*—Properties and uses of different metals, Iron (malleable and cast), Steel, Aluminium, Tin, Bronze, Brass, etc. Sections and weights of above. Length calculations, Working heats, Care and maintenance of tools, forge, etc.

(c) *Drawing*—In orthographic projection of all models made during the course.

Books recommended :

1. Smithy and Forge, Crane, approximate price Rs.2. (Publishers, Crosby Lockwood.)
2. Smith's Work, Hasluck, Rs.2. (Cassels.)
3. Educational Handwork, Jenkins, Rs.3. (University Tutorial Press.)
4. Handicraft in Wood and Metal, Shirley and Hooper, Rs.9 (Batsford).
5. Plain and Ornamental Forging, Schwarzkopf (Wiley & Sons,) Rs.6-8.

(10) HISTORY *or* GEOGRAPHY

**(The same course as in the compulsory subject excluding the syllabus
in Elementary Civics.)**

(11) BOOK-BINDING

The examination will consist of one paper on theory of three hours and a practical examination (including oral test) not exceeding four hours.

			Maximum marks.
Theory paper	..	..	40
Practical	..	..	60

A minimum pass of 15 marks has been fixed for the practical examination.

SYLLABUS

Theory

Papers—Its history and manufacture, varieties, sizes, weight, colour, surfaces, etc.

Mill boards and straw boards—Their sizes, weight, etc.

Machines and Presses and their uses—Nipping press, standing press, backing press, guillotine, mill board cutter, stitching frame, punching frame.

Hand Tools and their uses—Folders, compasses, dividers, steel set squares, steel scales, angle of iron, scissors with short and long blades, punches, backing hammer, knife, shoe-maker's knife, needles, tenon saw, steel scraper, nail cutter, embossing tools, etc.

General Book-binding Material—Ordinary papers, cardboards, marbles, binding cloth, threads, tapes, paste tub, glue tin, paste and glue, paste and glue brushes.

Decorative Book-binding Materials—Fancy papers, leather, linen morocco, gold leaf, silver leaf, gold knife, gold cushion padded and covered with rough calf, flat polishing iron, blood stone burnisher, tooth agate burnishers, one line pallet, one line fillet with mitre cut out, ivory marker, finishing stone, brass rod filed or engraved with wooden handle, design end tools (having dots, leaves, flowers or other simple forms) for decorative purposes made of brass rods, brass types, a typo-holder, inks, colours and varnishes, etc.

How to take care and preserve books.

Designing and Lettering—Their principles, printing, monograms, etc.

Technical Terms—(Indian and Foreign). Their meanings.

Practical, Part I

Sketches of tools—

Simple and graded introductory exercises—Such as envelopes of various types, pads, picture mounting, picture frames, portfolios folding writing case, voucher files, files, covers for magazines, sketch books, note books, calendars, cardboard brackets, album, repairing of school wall maps, and School registers, cloth mounting of wall maps, binding of cloth mounted maps on a book form.

The sewing and binding of single section pamphlets.

The folding of books in sheets.

Treatment of already bound books and mending torn sections.

The sewing of books on tapes and cards for cloth binding and case work.

Glueing up—rounding and cutting—making case and pasting down.

Library binding in split boards—French joints, zig zag end paper backing and covering.

Books covered in quarter or half leather, linen or paper sides.

Practical, Part II

Designing and lettering and monograms.

Books sewn “flexible”, tight hollow backs cut in boards and bound in half or full leather.

Edge gilding or colouring edges—Working Head Banks and lining up.

Selection of leather, papering and covering, mitring corners.

Designing and finishing.

Making patterns for blind or gold tooling.

Pasting down “Open” and finishing out.

The graining and staining of paper for end papers and covers.

Books suggested :

(a) For teachers—

Book-binding and the Care of books, by John Haqq.

(b) For students—

(1) Book-binding, by Paul N. Hasluck (Cassell & Co., Ltd., London).

(2) A Course of Book-binding and Book Crafts, by George F. Johnson (Blackie & Son, Ltd., London).

(3) A Course of Book-binding, Part I (Hindi edition), by B. Nath (Newal Kishore Press, Lucknow).

(12) SPINNING AND WEAVING

The examination will consist of one paper of three hours and a practical examination (including oral test) not exceeding four hours.

				Maximum marks.
Theory paper	..	..	..	40
Practice	..	..	..	60

A minimum pass of 15 marks has been fixed for the practical examination.

SYLLABUS*Spinning—(a) Theory—*

1. A brief survey of the principles of seed selection, land preparation, cultivation, growth, distribution, ginning and marketing of cotton.

2. Types and classes of the different cottons grown in the various parts of the world with particular reference to Indian-grown cottons. The utilization of all classes of cotton for the various kinds of cloth.

3. The physical properties of cotton, structure, length, diameter and colour of the different varieties.

4. The preparation of the cotton fibre for hand spinning, hand ginning and cleaning.

5. Spinning by the spinning wheel. The principles of hand drawing, twisting, and winding, in comparison with various types of spinning wheel.

6. The qualities and usefulness of well-spun yarn. The effect of spinning on the preparatory and weaving processes.

7. Methods of disposal of yarn.

8. A brief survey of other raw materials used in spinning such as wool, silk, waste silk.

Spinning—(b) Practical—

The spinning wheel and its manipulation, three principles in operation, viz. drawing, twisting, and winding.

Weaving—(a) Theory—

1. Its numeration and explanation of the different forms in which yarn is supplied to the weaving section for making into cloth, e.g. cops, hanks, cones, cheeses, etc.

2. Winding on the "Charkha" and methods adopted when winding from the forms mentioned above. The necessity of good winding and also of the traverse showing how badly-made bobbins affect the subsequent processes.

3. Warping and its object. The methods used, such as single-end multiple and Ball-warping machine in the making of warps for the loom.

4. Sizing and its necessity. The common ingredients used and the methods of application to the yarn. The effect of faulty sizing and application in the after processes.

5. Methods used in the running-off of warps on the weaver's beam.

6. Drawing in, its necessity, object and manipulation, Healds and Reeds, Drawing-in-implements.

Weaving—"Gaiting" the warp in the loom. Explanation of the three main motions, viz. shedding, picking, beating-up. Shedding as done by pedals and applied to the various types of cloth. The manipulation of the pedals, picking and how it is done. Beating-up to produce different thickness or fineness of cloth. Description of the parts in a sley; shuttle, pickers, shuttle boxes and all sundry parts.

Calculations—The system of counting yarns—cotton, wool, silk, etc.

The testing of counts, folding of yarns, quantity of warp and weft in a piece of cloth. Head knitting, reeds and warping.

Designing—The standard weaves such as plain, twill, satins, combination and re-arrangement of these weaves, stripes, mocklenos and similar cloths. Analysis of these cloths with drafting and lifting plans.

The make-up and marketing of the above.

Finishing of cloths.

Weaving—(b) Practical—

The making of warps by the "single," "multiple" and "Ball warp" methods—Winding on to warp bobbins and also weft-pirns. Sizing of yarn by hank and in ball warp. "Running-off" of warps on to plains, drills, twills, and simple tie-up designs.

NOTE—Attempts should be made to give to pupils a general idea of Spinning and Weaving machinery as used in modern mills.

Books suggested for teachers' use and students' reference :

1. Cotton Spinning, Vol. I, by W. S. Taggart (Macmillan).
2. Cotton Weaving and Designing, by J. T. Tayler (Longmans).
3. Hand-loom Weaving, by L. Hooker (Pitman.)
4. Book of School Weaving, by Reed (Evans Bros., Ltd., London)

(13) GENERAL SCIENCE (PHYSICS, CHEMISTRY AND BIOLOGY)

There will be two papers of three hours each as follows :

1st Paper—Physics and Chemistry.

2nd Paper—Biology (Botany and Zoology).

SYLLABUS

(It is assumed that candidates taking General Science have completed the Science course laid down for the Upper Middle section as questions may be asked from this course also in the High School Examination. As far as possible, simple applications of principles underlying the various phenomena included in the syllabus should be emphasized.)

I.—Physics

Pressure at different depths in liquids. Density. Specific Gravity. Archimedes' Principle and its applications. Flotation (Ships, Airships, Balloons, Icebergs). Air-pressure. Effects of air pressure. Syringe. Simple water pump. How the pressure of the air is measured. Barometer movements and weather. Action of the football and bicycle pumps. Bicycle valve. Kites, aeroplanes. Simple manometer.

Rectilinear propagation of light. Candle-power. Plane mirrors. Laws of reflection. Images in spherical mirrors (no formulae). Refraction. Magnifying glass. Simple ideas about the principles and use of Camera. Dispersion and colour.

Electrification. Electroscope. Conductors and insulators. Magnets. Polarity. Earth's Magnetism. Compass needles. Cells and batteries. Electro-magnet. Simple explanation of the telegraph and the electric bell. Simple galvanoscope. Heating and chemical effects of a current.

Sources of heat. Expansion of solids, liquids, and gases. Effects of expansion ; platinum and glass. Thermometers. Air and clinical thermometers. Freezing mixtures. Transference of heat. Davy's safety lamp. Winds. Cold nights with cloudless sky. Thermos-flask. Units of heat. Specific heat. Latent heat (no

calculat on). Cold on evaporation. Heat on compression. Humidity. Change of volume on melting. Boiling of liquids ; vapour pressure ; steam-engine.

II.—*Chemistry*

Solutions in water and other liquids. Crystallization. Slow and rapid evaporation. Saturated solutions. Elements, compounds and mixtures. Study of atmosphere : Oxygen and Nitrogen. Combustion : slow and rapid. Flame. Water. Properties of Hydrogen. Ammonia. Limestone. Sodium carbonate and caustic soda. Hard and soft waters. Acids. Bases. Salts. Chemical symbols. Conservation of mass. Carbon : properties and varieties. Carbon dioxide. How plants use air. Respiration. Coal gas. Sulphur : properties and varieties. Sulphur dioxide. Chlorine. Hydrochloric acid. Phosphorus. Matches. Common salt. Properties of metals and non-metals. Alloys. Simple ideas of the properties of iron and steel. Petroleum : sources and use. Soap. Glass.

III.—*Biology*

Life of animals, based on the frog—External parts and their work. Internal parts and their work : Digestive system ; food and digestion. Circulatory system and blood : work of blood and need for circulation. Lungs and breathing. Kidneys and excretion. Nervous system ; sensation and special senses. Muscles and movement. Bones and support. Reproductive system and reproduction. Habits and life history of the frog.

Elementary physiology of the human body.

General survey of the animal kingdom—Illustrated mainly by local animals.

Life of plants based mainly on mustard (or bean plant)—Various forms of plants : trees, herbs, climbing, plants, parasites, non-green plants. Parts of the plant and their work. Leaves : manufacture of food ; loss of water to air. Stem : carrying water and food ; support of leaves. Root : collecting water and salts from the soil ; holding the plant in position. Storage of food. Flower ; pollination, fertilization, fruits, and the scattering of seeds. The new plant in the seed ; germination. Production of new plants from stems and roots.

General survey of the plant kingdom—Illustrated mainly by local plants.

The value of plants and animals to man—Food, fuel, clothes, power, building materials, medicines, pleasure, scavenging of waste materials (dogs, jackals, cows, bacteria, fungi).

Animals and plants that are harmful to man—

(1) That feed on man and animals : ticks, lice, fleas, bedbugs, mosquitoes, intestinal worms.

(2) That feed on plants : destruction of plants by insects.

(3) That cause disease in man and animals : animal parasites (malarial parasite, kala azar, hookworm) and bacteria (cholera, plague, small-pox, tuberculosis, rabies).

(4) That cause diseases in plants : parasitic fungi (mildews, smuts, rusts).

(5) That carry disease : insects (flies, fleas, sandflies, mosquitoes), and rats.

(6) That destroy property : rats, white-ants, beetles, bacteria and moulds in food ; wood-rotting fungi.

(7) Control of parasites, disease-producing organisms and other pests : by nature (birds and insect-eating insects) and by man.

IV.—Practical work

The following list of experiments indicates the minimum amount of practical work required to be done by each student. Other experiments of equal educational value may be substituted. It should be possible for most teachers to get their students to perform additional experiments. The experiments should be performed individually as far as can be arranged. The teaching of theory should be fully illustrated by experiments and demonstrations which are to be considered an essential part of the teacher's work. The course in Biology will not require extensive expenditure on equipment and materials. Practically all materials can be collected from the local fauna and flora. No microscopic work is expected to be done individually by the pupils ; only that may be done by demonstration only

the part of the teacher, when he believes it will add to the effectiveness of the work.

NOTE—A chart giving a list of the experiments to be performed and the date on which each student completes each experiment should be maintained and hung in the laboratory at each school recognized in General Science.

Physics

To show that the weight of a floating body is equal to the weight of the liquid displaced (using a loaded test tube in a graduated jar with different liquids).

Determination of the radius of a wire by Archimedes' Principle.

Determination of the relative density of (a) bodies which sink in water, and (b) liquids.

To measure (a) the pressure of the lungs, and (b) gas supply (if any).

Reflection at a plane mirror.

Focal length of (a) concave mirror, and (b) convex lens by parallel rays method.

Relation between image and object produced by (a) concave mirror, and (b) convex lens (no calculations).

Refractive index of glass and liquids.

Refraction through a prism.

Cooling curve of water and wax.

Determination of the apparent expansion of water (by heating water in a flask and noting rise in level of surface).

To compare heat required to melt ice and to boil water.

To show that the loss of heat of one body is equal to the gain of heat in another.

To map lines of force by a small magnet.

To charge an electroscope.

Magnetic effect of a current.

Chemistry

To observe the action of water on sodium, sodium chloride, potassium nitrate, sodium carbonate, copper sulphate.

Crystallization of a salt.

To observe the action of heat on potassium nitrate, calcium carbonate, copper sulphate, iron, zinc, tin, lead, mercury, sulphur, phosphorus.

To determine the change in weight due to oxidation when a substance is sufficiently heated in air.

To find the proportion of oxygen and nitrogen in air.

To prepare oxygen from potassium chlorate and manganese dioxide and study its properties.

To prepare hydrogen from zinc and sulphuric acid and study its properties.

To prepare carbon dioxide from limestone and hydrochloric acid and study its properties.

To prepare hydrochloric acid from sodium chloride and sulphuric acid and study its properties.

To prepare chlorine from manganese dioxide and hydrochloric acid and study its properties.

To prepare ammonia from ammonium chloride and quicklime and study its properties.

To prepare sulphur dioxide from copper and sulphuric acid and study its properties.

Biology

Observation of living frogs ; habits and mode of life.

Demonstration of more important features of the internal parts. Students should sketch easier parts.

Observation of life history in the field and in the laboratory.

Demonstration of common representatives of the animal kingdom ; students should be encouraged to collect materials ; should be developed as a museum activity.

Collection and sketching of common plant forms.

Study and sketches of parts of plants.

Simple experiments, mainly demonstrations, to show : that food (starch) accumulates in leaves exposed to light ; that water is lost through the leaves ; that plants require a continuous supply of water ; that water rises through the stem ; that CO_2 is given off during respiration ; that plants grown in darkness are not green, but become green upon exposure to light.

Process of germination : study and sketches (bean, chana and castor bean).

Demonstration of common representatives of the plant kingdom, the project to be developed as for animals.

Observation and collection of insects that feed on cultivated plants.
 Collection of fungus diseases of plants, specially of crop plants ;
 Study of the damage they cause.

Animals that carry disease : their habits and life-histories.

Observation and study of plants and animals that destroy property.

Control of bacteria, by heat, drying, and chemicals.

Examination of the breeding places of mosquitoes, flies, and rats.
 Experiments to show means of destruction.

NOTE—Until the practical examinations in the High School Examination are instituted the theory paper should include two questions based on the prescribed practical work.

Books suggested :

- (1) Gregory and Hodges—Experimental Science for Indian Schools (Macmillan).
- (2) E. M. Thillayampalam : An Introduction to Biology (Indian Press, Allahabad).
- (3) Parsons—Every-day Science (Macmillan & Co.).
- (4) Marie Stopes—Human Body (Gill, London). 5s.
- (5) Green and Potter—Biology by Discovery (J. M. Dent & Sons, Ltd., London). 5s.
- (6) Whitehouse—Assignments.
- (7) An Introduction to Science, Books I and II (Basil Blackwell, Oxford). (*Recommended for general reading.*)
- (8) Andrade and Huxley—An Introduction to Science, Book 1 “(Things around us)” (Macmillan). (*Recommended for general reading but not as a text-book.*)
- (9) Simmons and Gale—A First-book of General Science for High School Examination (1930 edition) (Macmillan). (*Recommended for supplementary reading in libraries.*)

APPENDIX

A note on the General Science course for the guidance of teachers

The course in General Science consists of Physics, Chemistry and Biology and is intended to awaken the interest of young students in and give them an intelligent appreciation of things and life around them. With this general purpose in view, the syllabus is mainly descriptive and all quantitative relations are omitted. The teacher should keep this main purpose of the syllabus in mind in presenting the different sections of the subject and emphasize the part these sciences play in modern life. In Biology the teacher should emphasize the life-functions of frog and man rather than details of structure; in plants, it is not the shapes and kinds of structures that should be emphasized, but the fact that the plant is a living organism. How animals and plants obtain their food, breathe, react to their surroundings and reproduce their life rather than elaborate details of structure is the important thing.

Practically every item of the syllabus can be illustrated by a simple experiment and students should be encouraged to learn the subject more from direct experience and demonstration rather than by reading books alone. The teacher is recommended carefully to prepare his material and experiments before their demonstration in the class and induce students to write out notes of what they have seen. These notes supplemented by reading of suitable books must form the basis of his knowledge of the subject.

The syllabus lays down a list of experiments in each section which the student is expected to carry out himself. This does not, however, limit the teacher's freedom of suggesting additional experiments in any section. The student in the practical room should, in fact, have free access to material or apparatus and might be allowed, wherever possible, to repeat for himself the experiments which were shown in the classroom.

(14) and (15) INDIAN MUSIC—VOCAL AND INSTRUMENTAL
(The same course as for the Diploma Examination in Indian Music.)

(16) RURAL ECONOMICS, CO-OPERATION AND ECONOMIC GEOGRAPHY OF INDIA

There will be two papers of three hours each. The first paper will be on Rural Economics and Co-operation and the second paper on Economic Geography of India.

PAPER I

Rural Economics and Co-operation

Introduction—Subject matter of Economics, Wealth ; Wealth and Prosperity ; Utility ; Value ; Price and Income.

Production—Essentials of production ; their nature and function in agricultural and handicraft industries. A survey of the principal crops of any locality ; low yield of the land and its causes ; subdivision and fragmentation of holdings ; important cottage industry products, oil crushing, rope-making, cotton spinning and weaving, tanning, shoe-making, wood-work, ghee and milk production. Methods of agriculture, equipment, agricultural technique and rural industries.

Consumption—Wants, income, satisfaction of wants, classification of wants, savings, budget of consumption of farmer, village artisan, a village labourer, standard of living, essentials of a balanced diet.

Exchange—Barter, purchase and sale, market, extent of a market, determination of price in the existing rural conditions. Marketing of agricultural produce and disposal of village handicrafts, its drawbacks and improvements ; village markets, *hats* and fairs, their utility and organization.

Distribution—Sharing of agricultural income, rent, interest, wages and profits, *batai* system, abuses of *batai*, system of payments to village workers, customs and traditions and their effects on the economic conditions. Land tenure ; relation between zamindars and tenants. Patwari papers.

Village economy—Village problems, sanitation, education, recreation, personal hygiene and its principles, cattle problems, agricultural and cattle improvements, disputes, indebtedness and its causes and

remedies ; village and district administration, relation of the village people between themselves, and with the administrative officers ; associations and their importance in the rural areas ; panchayats and their functions.

Government Agricultural Department and its work for the agriculture of these provinces.

Co-operation—Co-operative Credit Societies, Primary Agricultural Credit Co-operative Societies, their organization and working and effects in India ; Agricultural Non-credit Societies, Co-operative Sale and Purchase Societies, Co-operative Better-living Societies, Consumers' Co-operative Stores ; Unions of Co-operative Societies, District or Central and Provincial Co-operative Banks.

Books recommended :

- (1) ग्राम अर्थशास्त्र, by Pandit D. S. Dubey and Mr. S. S. Saksena.
- (2) First Principles of Economics, by S. L. Agarwal, and R. N. Gupta. (The Indian Book Depot, Lucknow.)
- (3) Strickland : Introduction to Co-operation in India (Oxford).
- (4) Mathai : Agricultural Co-operation in India.
- (5) Kaji : 'Co-operation in India.

PAPER II

Economic Geography of India

1. *Introduction*—(a) Scope of Economic Geography—man and his environments.

(b) Physical environments—Rocks, soils, and climate and their influence on the economic life of the people.

(c) The influence of vegetation and animal life on economy of man's life.

2. *Physical conditions of India*—Natural structure of the country's soil, classification. Physical properties of soil, tillage and plant food in the soil. General principles of manuring in relation to soil and crops, various kinds of manures.

Climate—Distribution of heat and rainfall and monsoons and its economic effects. Necessity of artificial irrigation. The main types of irrigation throughout the country. The importance of irrigation.

3. *Important crops*—Food crops ; oil seeds ; fibres ; commercial and non-commercial crops—their conditions of production, extent of production and their relative importance in the economy of the country.

4. *Live stock and animal products*—The existing conditions, their importance, extent, drawbacks and improvements.

5. The distribution of minerals and that of the industries based on them.

6. *The distribution of forests*—Their importance, classification and administration. Forest industries.

7. Sources of Power—e.g. coal, water, oil.

8. Localization of industries in India.

9. *Distribution of population*—Occupations and labour in different occupations.

10. *Transport and communications*—Land, railways, river and air ; coastal traffic ; post ; telegraph ; telephone ; and wireless.

11. Provincial and Inter-provincial Trade in India.

12. The origin, growth and importance of towns, special study of the important seaports.

Books recommended :

(1) Manohar Swarup Saksena : Economic Geography of India.

(2) B. B. Mukerji : Commercial Geopraphy of India.

(3) The Indian Year Book (*Times of India*) (latest edition).

PHYSICAL TRAINING (FOR GIRLS)

Physical Training should be included as a non-examination subject for girls in recognized high schools.

N.B.—Organized games and dancing should be introduced and encouraged wherever possible, in recognized high schools for girls.

DIPLOMA EXAMINATION IN INDIAN MUSIC

(Same for vocal and instrumental.)

There will be one paper of two hours' duration and a practical examination. Marks are allotted as follows:

	Marks
Theory paper	30
Practical examination	70

Pass marks in the total of Theory and Practice shall be 33 per cent. Every candidate must obtain pass marks in Theory and Practice separately. The minimum pass marks for the Theory paper shall be 8 out of 30 and for the practical examination 25 (and not 21) out of 70, (21 out of 70 in the case of the High school Examination in Indian Music), the aggregate being 33.

NOTE—There shall be separate papers in Vocal and Instrumental Music.

Indian Music—Vocal

Courses of study :

Theory

Sangita, Nada, Svara, Suddha and Vikrit, Saptaks, Thata Rags, Asraya-raga, Vakra—Svara, Alankara, Pakara, Matra, Laya, Vilambita, Madhya and Druta, Tala, Purva-raga, Uttara-raga, Sandhiprakasha Raga, Vadi, Samvadi, Anuvadi, Vivadi, Alapa, Tana, Boltans, Dhruvapada, Khyala, Tappa, Thumri Dhamara, Hori, Tarana, Chaturanga, Gata, Thata, Ghasita, Jora, Parana.

A short history of Hindustani Music. Reading and writing in simple notation.

Practical

(a) Swaragyan.

(b) One Sargam, one lakshangita and one Khyala and one Dhruvapada in each of the following ragas:

(1) Bhairav, (2) Bhairavi, (3) Asavari, (4) Jaunpuri, (5) Todi, (6) Brindabani Sarang, (7) Bilaval, (8) Bibhas, (9) Ram Kali, (10)

Deshkar, (11) Desi, (12) Iman, (13) Bhupali, (14) Bihag, (15) Khamaj, (16) Kafi, (17) Desh, (18) Kedara, (19) Kamod, (20) Tilak Kamod, (21) Hamir, (22) Durga, (23) Mallar, (24) Nat, (25) Bageshri, (26) Malkans, (27) Darbari Kanhra, (28) Basant, (29) Paraj, (30) Sohani, (31) Bahar, (32) Adana, (33) Bhimpalasi, (34) Multani, (35) Gaund Sarang, (36) Gaund Mallar, (37) Purvi, (38) Marwa, (39) Pilu, (40) Dhanashri, (41) Jayjaywanti, (42) Shri, (43) Puria, (44) Shankara, (45) Kalingra.

(c) Tritala, Dadra, Jhaptala, Ekatala, Chautala, Tivra, Kaharva, Diphandi, Ada-chautala, Sulphaka, Dhamara, Jhumara, Tilavada and their Doons (Double measure).

Indian Music--Instrumental

Courses of study :

Theory

Same as for vocal music.

Practical

One of the following instruments is prescribed for the practical test

1. Vinā.
2. Sārangi.
3. Esarāja.
4. Violin.
5. Sitāra.
6. Sarod.
7. Pakhawāja.
8. Tablā.

(Same for vocal and instrumental.)

Out of 70 marks allotted for the practical test, 20 will be set apart for an oral test, 35 for finding out practical knowledge of Rāga and 15 for Tāl.

N.B—In awarding marks, examiners are required to keep the following points in view :

- (1) The Ālāp of the Rāgas.
- (2) If Ālāp is well expressed, a knowledge of Lakshan-gita is not essential.

(3) The oral test to cover Svara Gyan, at least three easy Svara Vistaras in Sargam or Akar, Tal Gyan and correct intonations.

(4) The general effect produced by the Music rendered by the candidate.

(5) Twenty per cent. marks should be deducted when a candidate sings to the accompaniment of a harmonium. "Tambura" can be used by the candidates while singing. No marks will be deducted if a candidate sings in accompaniment to Tambura. In Diploma Examination singing in accompaniment to a harmonium will not be allowed at all. A standing note in harmonium is however permissible.

(6) The Tabla and Tambura accompaniment can be provided either by the teacher of the centre concerned or by a companion of the candidate.

(7) For practical examination in Instruments for the Diploma Examination and the High School Examination students will be required to learn at least five Toras or Paranas and a little Svara Bistar.

(8) Each centre for examination in Music must arrange for a Tablaplayer and the following instruments :

(i) A Tambura.

(ii) A Harmonium.

(iii) A pair of Tabla.

(9) Not less than fifteen minutes should be allotted to each candidate for the practical test.

(10) Candidates offering instrumental music are required to bring their own instrument.

(11) Each institution recognized for examination in Music must inform the Secretary, Board of High School and Intermediate Education, at least six months before the commencement of the examination the number of candidates offering (a) Vocal music, (b) Instrumental music. Private candidates are also required to furnish the information mentioned above.

(12) Candidates for the Diploma Examination should be examined in institutions recognized for the examination.

(Same for vocal and instrumental.)

The following books are recommended :

For Theory—The Shastra Pravesh, 2nd, 3rd, and 4th parts, published by the Marris College of Hindustani Music, Lucknow.

Sangit Shiksha, Parts I—III, by S. N. Ratanjanker (●luqdar Press, Lucknow).

Sangit Rag Darshan, Parts I and II } (Gandharva Mahavidyalaya
Sangit Shastra Darshan, Part I } Mandal, Allahabad).

“ Talim-i-Sitar Ya Israr-i-Hamid, ” by Professor Hamid Husain Khan (Ram Charan Lal, Lucknow). Re. 1 (for Instrumental Music).

The text-book of Violin (Bela Sikshak), by Vishnu Govind Jog, Marris College of Hindustani Music, Lucknow.

For Practical Music—Selections of relevant Rāgas and Songs from Sangit Balbodh, by Pandit Vishnudigambar Paluskar or from the Kramika Series, Parts I, II and III, by Pandit V. N. Bhatkhande.

N. B.—A candidate intending to appear at the Diploma Examination in Indian Music may offer both vocal and instrumental music in one and the same year. He will be required to pay double the fees.

INTERMEDIATE EXAMINATION

(*N.B.*—Alternative questions will be set in all question papers for the Intermediate Examination.)

The following grouping of subjects is approved for the guidance of students and teachers. The subjects have been so grouped that, while providing a sound general education, suitable as an introduction to University studies, they should also fit the students to enter upon higher specialized courses in technical and professional institutions :

General Arts—Mathematics, Economics, *Civics, Geography, Drawing, a Modern Indian or European Language, Deductive Logic and Inductive Logic *or* Deductive Logic and Elementary Psychology *or* Elementary Psychology and Educational Psychology *or* Physiology, Hygiene and Elementary Psychology, a Classical Language, History and Allied Geography, Histories of Greece and Rome and Allied Geography.
(*Any three should be taken.*)

General Science—Mathematics, Drawing, Chemistry, Physics, Biology, Geography, Economics. (*Any three should be taken.*)

For Medicine—Chemistry, Physics, and Biology.

For Engineering—Mathematics, Physics, and Chemistry.

For Teaching—(1) History, Civics, and Geography.

(2) History, Geography, and Mathematics.

(3) History, Geography and Physiology, Hygiene and Elementary Psychology.

(4) Geography, Mathematics and Physiology, Hygiene and Elementary Psychology.

(5) Geography (or Mathematics), Biology and Physiology, Hygiene and Elementary Psychology.

*Students taking Civics are advised also to take History.

- (6) History, Geography, and Economics.
- (7) Mathematics, Geography and Economics (or Drawing).
- (8) Mathematics, Physics, and Chemistry.
- (9) Mathematics, Physics, and Biology.
- (10) Chemistry, Physics, and Biology.
- (11) Biology, Physics (or Chemistry) and Drawing.
- (12) Physiology, Hygiene and Elementary Psychology, a Classical Language and History or Geography or Mathematics.
- (13) Physiology, Hygiene and Elementary Psychology, Drawing and Biology or Geography or a Classical Language.

ENGLISH

There will be *one* paper of three hours on the prescribed Prose course and a *second* paper of three hours on the prescribed Poetry course ; and in each paper there will be one question on " Unseen " passages. The prose paper will contain one or more prose unseens and the poetry paper will contain one or more poetical unseens.

A *third* paper of three hours will include (a) translation from a *Modern Indian Language into English, and (b) an essay on easy subjects of general interest. The latter will include among the alternatives descriptive or narrative subjects. In the case of candidates whose mother-tongue, is English or a modern Indian Language not recognized by the Board, the third paper will consist of an essay, together with questions on English Composition and on the History of English Literature from 1500, as in Hudson's Outline of English Literature (Bell & Co.)

NOTES—(1) In the case of books prescribed for detailed study candidates will be expected to show a close familiarity with the text, including meaning of words, construction of sentences, historical and other allusions, as well as knowledge and understanding of the subject-matter. They should be able to indicate contexts and to paraphrase and explain any difficult passages in simple and correct English.

(2) In the case of books prescribed for general study detailed knowledge of the text will not be required, but candidates will be expected to show that they have read the course with intelligence and with some appreciation.

Books prescribed :

Prose—(a) For detailed study—

1. Models of Comparative Prose, by Pearce and Aryaratna (Oxford University Press) Rs. 2.

or

English Prose Selections, by Sidhanta and Deb (Macmillan).
Rs. 2.

NOTE—Every college must select for study either of the above two books.

2. Goldsmith's " She stoops to conquer."

(b) For general study—

1. Dickens : Great Expectations (Abridged edition—Oxford University Press). Re.1.

2. Modern Short Stories, by various writers (University of London Press). 2s.

* The Modern Indian Language passage will be a rendering from English.

Poetry—(a) For detailed study—

1. Byron—Prisoner of Chillon.
2. Tennyson—Morte d'Arthur.
3. The Tide of Time, edited by Sir Henry Newbolt (Nelson & Son), Re.0-14-0, from which the following poems are prescribed :

W. H. Davies—"Oh, Sweet Content "
 Dekker—"O Sweet Content."
 Barnes—"Ah, Sweet Content."
 Dela Mare—"Tartary."
 Newbolt—"The Hundredth Year."
 Keats—"In a Drear-nighted December."
 M. Coleridge—"Egypt's Might."
 John Clare—"Song's Eternity."
 M. Coleridge—"Sleep."
 Fletcher—"Care-charming Sleep."
 Daniel—"Care-charmer Sleep."
 Dela Mare—"Ev'n in the Grave."
 M. Coleridge—"To Forget."
 R. Jones—"The Secret Book."
 Swinburne—"Before the Beginning of Years."
 George Herbert—"The Pulley."

or

Pleasures of English Poetry, edited by Gokal Chand (Oxford University Press), Re.1-8, from which the following poems are prescribed :

Wordsworth—"Up, Up, my Friend."
 Fitzgerald—"Omar Khayyam."
 Tennyson—"The Brook."
 Morris—"All for the Cause."
 Tagore—"The Champa Flower."
 Tagore—"Traveller."
 Dela Mare—"Tartary."
 Shakespeare—"Remembrance."
 Milton—"On his Blindness."
 Wordsworth—"The World is too much."

R. Brooke—"The Soldier."

W. H. Davies—"Sweet Stay at Home."

NOTE—Every College must select either "The Tide of Time" or Pleasures of English Poetry, for study.

(b) For general study—

Shakespeare—The Tempest.

Recommended for use by students :

1. The Pocket Oxford Dictionary.

NOTES—(a) Half the total number of marks will be allotted to the portions for detailed study, 30 per cent. to the portions for general study, and 20 per cent. (i) in the Prose paper to Unseen Passages and (ii) in the Poetry paper to Unseen Passages and Elementary Prosody and figures of speech.

(b) The questions in the Poetry paper will include scansion of regular lines, demanding a knowledge of Iambic, Trochaic, Anapaestic and Dactylic metres and also principal figures of speech, viz. Metaphor, Simile, Hyperbole, Onomatopoeia, Personification, Apostrophe, Pathetic fallacy, Oxymoron.

(c) The attention of candidates is drawn to the fact that examiners are instructed to deduct marks for inaccuracy in English.

MATHEMATICS

There will be three papers of three hours each ; one paper in Algebra and Trigonometry, a second in Mensuration and Analytical Geometry and a third on Elementary Dynamics and Statics.

(1) (a) *Algebra*—Quadratic equations involving two or more unknown quantities ; the theory of quadratic equations and of expressions of the second degree ; surds and imaginary expressions ; arithmetical, geometrical and harmonical progressions ; permutations and combinations ; theory of indices and logarithms ; proof of binomial theorem for a positive integral index and the use of binomial and exponential theorems for any index, and of the logarithmic series.

(b) *Trigonometry*—Including solution of triangles and simple problems on inscribed, circumscribed, and escribed circles.

(2) (a) *Analytical Geometry*—Straight line, pair of straight lines, circle (including radical axis and pole and polar), equation to parabola in form $y^2=4ax$ and simple properties deduced therefrom : simple properties of tangents and normals to the ellipse deduced from the equation $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$. (Oblique, and polar co-ordinates will not be required.)

(b) *Mensuration of Solids*—Surfaces and volumes of parallelepipeds and right prisms, pyramids, circular cylinders and cones, spheres and spherical segments ; frusta of pyramids, cones and spheres.

The use of Trigonometry and Logarithms will be permitted in solving numerical examples.

(3) *Dynamics and Statics*—Velocity, composition of velocities ; relative velocity ; acceleration, rectilinear motion under uniform acceleration, composition of accelerations ; Newton's Laws of motion ; rectilinear motion under gravity in a vertical and down an inclined plane ; motion of two masses connected by a string passing over a pulley ; projectiles ; direct impact of smooth bodies ; definition and calculation of kinetic energy ; co-planar forces, parallel and non-parallel, and their composition ; equilibrium of a body under three forces ; moments ;

conditions of equilibrium of a body under a system of co-planar force and simple examples ; centre of gravity ; friction ; work and power ; simple machines (lever, balance, system of pulleys).

NOTE—The use of stencils and slide rule in answering questions in Mathematics is not allowed.

The following books are suggested (*not prescribed*) in addition to more elementary text-books :

1. School Algebra, H. S. Hall, Parts I—III.
 2. School Algebra, Part II, by Paterson (Clarendon Press).
 3. Elementary Algebra, Part II, by P. Ross (Longmans).
 4. Higher Algebra, Chapters I—XVII, by Hall and Knight (Macmillan).
 5. Tutorial Algebra, by Briggs and Brian (University Tutorial Press).
 6. Algebra for Intermediate Colleges, by M. A. Butt (Indian Press, Ltd., Allahabad).
 7. Algebra for Intermediate Colleges (revised edition), 1935, by M. A. Butt (Gautam Bros., Meston Road, Cawnpore).
 8. Hall and Steven's School Geometry, Part VI.
 9. Elements of Analytical Geometry, Part I, by Wanchoo (Indian Press, Ltd., Allahabad)
 10. Co-ordinate Geometry, by Smith or Loney (Macmillan).
 11. Intermediate Trigonometry, by C. C. Ghosh (Macmillan)
 12. Plane Trigonometry, Part I, by S. L. Loney (Macmillan).
 13. Plane Trigonometry, by Deva Prasad Ghosh (Modern Book Agency, 10 College Square, Calcutta). Rs. 2-4.
 14. Plane Trigonometry (Indian Press, Allahabad). Rs.2.
 15. Elements of Statics and Dynamics, by Loney (Cambridge University Press).
 16. Tutorial Statics, by Briggs
and Brian
 17. Tutorial Dynamics, by Briggs
and Brian
- } (University Tutorial Press).
18. Statics and Dynamics, by D K. Sen (Educational Publishing and Co., Karachi, Agent—School and Coll ge Book Stall, Kolahpur).

CHEMISTRY

(N.B.—Candidates will be required to pass in the theoretical as well as the practical part of each Science subject.)

There will be two papers of three hours each and a practical examination. The first paper will include metals and non-metals and the second paper mainly Physical Chemistry and Organic Chemistry.

Marks are allotted as follows :

	Maximum.
Theory paper	70
Practice	30

The minimum pass marks for the theory paper shall be 21 out of 70 and for the practical examination 9 out of 30, the aggregate being 33 per cent.

The following syllabus is prescribed :

Elementary and compound substances, mixtures, solution, chemical action, the fundamental laws of chemical combination, simple methods of the determination of equivalent weights, atoms, molecules, atomic and molecular weights, vapour density, the atomic theory and Avogadro's hypothesis, combination of gases by volume.

Valency, relation between equivalent and atomic weights, simple methods of determination of atomic and molecular weights, Dulong and Petit's law, Boyle's law, Charles' law, vapour pressure, diffusion.

Chemical symbols, formulae and equations, calculations of an easy nature.

Oxidation and reduction, catalysis.

Elementary ideas as to the nature of dissociation in gases, electrolytic dissociation theory.

The Periodic law studied from elements prescribed in the course.

Preparation and important properties of the following elements and compounds and proofs of the composition of the compounds marked* :

Hydrogen, oxygen, water*, ozone, hydrogen peroxide, nitrogen, the atmosphere*, the effects of animal and vegetable life upon its composition, ammonia*, nitric acid and nitrates, nitrous acid and nitrites, nitrous* and nitric* oxides, nitrogen peroxide, carbon, carbon* dioxide, carbon* monoxide, elementary ideas about combustion and structure

of flame, coal gas, chlorine, hydrochloric* acid, chlorides, chlorine peroxide, chloric acid and chlorates ; bromine, iodine, their hydrazoids and salts.

Sulphur, hydrogen* sulphide, sulphur* dioxide and trioxide, sulphuric acid and sulphates, sulphurous acid and sulphites.

Phosphorus, hydrogen phosphide, chlorides of phosphorus, phosphorus trioxide and pentaoxide, orthophosphoric acid.

Silica, silicates of Na, K & Ca, glass.

Sodium, potassium, their hydroxides, chlorides, nitrates, carbonates, sulphates, and common ammonium salts.

Calcium, strontium, barium, and their oxides, carbonates, sulphates, chlorides, nitrates.

Magnesium, its oxide, chloride, sulphate, carbonate and nitrate.

Lead, its chloride, sulphate, nitrate, carbonate and acetate.

Copper, the outlines of its metallurgy, its oxides, chlorides, sulphate, nitrate and sulphides. Brass.

Iron, the outlines of its metallurgy, its oxides (FeO , Fe_2O_3 , Fe_3O_4) chlorides, sulphates and sulphides.

Zinc, its oxide, chloride, carbonate and sulphate.

Mercury, oxides, chlorides, nitrates, sulphide.

Aluminium, oxide, chloride, sulphate and alum.

Arsenic, hydride, oxides, sulphides.

Antimony, hydride, oxides, chlorides, sulphides.

Tin, oxides, chlorides, sulphides.

Silver, oxide, hydroxide, chloride, bromide, iodide, nitrate and sulphate.

(NOTE—Students will be required to know the extraction of metals from their ores.)

Organic :

A—The preparation, typical properties and structural relationship of the following compounds :

Methane, ethane, ethylene, acetylene, ethyl bromide, chloroform, iodoform.

Methyl alcohol, ethyl alcohol, and ether.

Formaldehyde, acetaldehyde, and acetone.

Formic acid and acetic acid.

Ethyl acetate and methyl acetate.

Acetamide acetyl chloride, acetic anhydride.

Methylamine.

B—The simpler properties of the following :

Glycerol, oxalic acid, tartaric acid, fats, soaps (and saponification), starch, cane sugar, grape sugar (and fermentation), urea, benzene, nitrobenzene, phenol, aniline, benzoic acid, proteins.

Practical Work

Students will be examined in Practical Chemistry

Students are expected to perform the following experiments in the laboratory. An account of each experiment must be written by the student in a special notebook, which will be liable to examination by the examiners. This notebook should be kept in the charge of the laboratory instructor and the account of each experiment should be signed by him. The Principal of a College will be responsible for the production of this notebook when demanded by the proper authorities.

The *practical* course is as follows :

1. Such practical work as is required for the High School Examination of 1944.

2. (a) Analysis of simple salts soluble in water or hydrochloric acid composed of acids and bases mentioned in the following list :

Ag, Pb, Hg, Cu, Cd, Bi, As, Sb, Sn, Fe, Al, Cr, Ni, Co, Zn, Mn, Mg, Ca, Sr, Ba, Na, K, NH_4 , Cl, Br, I, ClO_3 , SO_4 , SO_3 , NO_3 , NO_2 , PO_4 , S, CO_3 , acetate (*dry and wet methods*).

(b) Analysis of a mixture, soluble in water or hydrochloric acid, containing two basic radicals not belonging to the same group and two acid radicals.

3. Preparation and purification of simple salts involving no special difficulty.

4. (a) Simple gravimetric experiments, such as change in mass on oxidation of magnesium and on heating barium chloride, sodium bicarbonate, or ferrous ammonium sulphate.

(b) Simple volumetric exercises such as preparation of standard solutions by weighing (Na_2CO_3 , Oxalic acid, etc.) and estimation of alkalis and acids by titration.

(c) Estimation of equivalent weights of carbonates by volumetric method.

(d) Preparation of standard potassium permanganate by means of oxalic acid.

Determination of melting and boiling points.

6. Qualitative detection of nitrogen, sulphur, and one of the halogens, alone or together, in an organic compound.

7. Some experiments of the following type may be performed:

- (i) Preparation of sodium carbonate from reh.
- (ii) Preparation of potassium carbonate from wood ashes.
- (iii) Preparation of essential oils from lemon rinds and orange rinds.
- (iv) Preparation of rose water from roses.
- (v) Preparation of soap from mahua oil and caustic soda.
- (vi) Preparation of ink from myrobolams, ferrous sulphate and soluble blue.
- (vii) Preparation of shoe polishes.
- (viii) Preparation of mirrors.

Books suggested :

- (1) A Class Book of Organic Chemistry, by J. B. Cohen. Rs.5-3.
- (2) Organic Chemistry, Parts I and II, by Perkin and Kipling (W. R. Chambers). Rs.3-2.
- (3) Holmyard's Inorganic Chemistry (Arnold). 6s.-6d.
- (4) Newth : Chemical Lecture Experiments for teachers' use (latest edition) (Messrs. Longmans, Green & Co.). 8s. 6d.
- (5) Holmyard : Introduction to Organic Chemistry (Arnold). Rs.3-2.
- (6) Bruce and Harper : Practical Chemistry (Macmillan), Rs.2-12.
- (7) Rane and Varma : Organic Chemistry (Nand Kishore & Bros., Benares). Rs.2-8.
- (8) Bailey and Snellgrove : Intermediate Inorganic Chemistry Volume I—non-metals and Volume II—mainly metals (University Tutorial Press, Oxford). Rs.9.
- (9) Rane and Varma : Inorganic Chemistry (Nand Kishore & Bros., Benares). Rs.4.
- (10) Systematic Inorganic Chemistry, by N. Singh and J. Singh (Atma Ram & Sons, Lahore) (for the Intermediate classes) Rs.5.
- (11) Outlines of Inorganic Chemistry, by J. Morris, Parts I and II (Mechuen). Rs.6.

PHYSICS

(N.B.—Candidates will be required to pass in the theoretical as well as the practical part of each Science subject.)

There will be two papers of three hours each as follows :

1st Paper—Properties of Matter, Heat and Light.

2nd Paper—Sound, Electricity and Magnetism.

Marks are allotted as follows :

	Maximum
Theory paper	70
Practice	30

The minimum pass marks for the theory papers shall be 21 out of 70 and for the practical examination 9 out of 30, the aggregate being, 33 per cent.

Syllabus :

Mechanics and general properties of matter—Fundamental units and their measurement, balance, verniers, calipers, screw-gauge, spherometer, specific gravity, fluid pressure, Principle of Archimedes hydrometers, barometers, Boyle's law, pumps, siphon, Young's Modulus, volume elasticity, Isothermal and Adiabatic elasticities of gases, gravitation, laws of motion, force, acceleration, work, energy, simple harmonic motion, simple pendulum, laws of parallelogram and triangle of forces, parallel forces, couple, moment, laws of simple machines such as pulleys and levers. Simple ideas on surface tension and viscosity.

Heat—Temperature. Thermometers. Calorimetry. Specific heat. Latent heat. Expansion of solids, liquids and gases. Vapour pressure. Hygrometry. Change of state. Laws of unsaturated and saturated vapours. Conduction. Convection. Radiation. Reflection and absorption of heat. Isothermal and adiabatic changes. Specific heat at constant volume and constant pressure. Relation of heat to work. Determination of J. Simple ideas of steam and petrol engines. Refrigeration.

Light—Laws of propagation. Reflection and refraction from plane and spherical surfaces. Dispersion. Rainbow. Spectra. Fraunhofer's lines. Telescope. Microscope. Spectrometer. Photometry. Phosphorescence. Fluorescence. Velocity of light. Projection lantern. The eye as an optical instrument. Long and short-sight and their correction by spectacles.

Sound—Transverse and longitudinal waves. Nature of sound waves. Intensity. Pitch. Quality. Mode of propagation. Reflection. Refraction. Stationary waves. Beats. Resonance. Vibrations of strings and air columns. Monochord and organ pipes. Determination of velocity in solids, liquids and gases. Musical scale. The gramophone. The loudspeaker.

Magnetism and Electricity—Magnetisation. Permanent magnets. Magnetic induction. Pole strength. Magnetic field. Lines of force. Tangent A and B positions of Gauss. Deflection and vibration magnetometers. Magnetic moments. Earth as a Magnet. H. Declination and Dip and their determinations. Electrostatic unit of quantity. Inverse square law of force. Electric field. Gold leaf electroscope. Surface density. Potential Capacity. Leyden jar. Capacity of a parallel plate condenser. Electrophorus. Wimshurst's machine.

Voltaic cells. Electric current and its magnetic effects. E. M. unit of current. Galvanometers. Ammeters. Voltmeters. Ohm's law and its verification. Resistance and Potential difference. Specific resistance. Practical and absolute units. Determination of resistance. Wheatstone's bridge. P. O. Box. Potentiometer. Heating effect of current. Joule's law. Determination of J. Electric lamp. Electric arc. Chemical effects of current. Faraday's laws of Electrolysis Electrochemical equivalent. Voltmeters. Storage cells. Electro-magnetic induction. Induction coil. Simple dynamo and Motor. Elementary ideas of A. C. Electric Telegraph. Telephone. Microphone Thermopile. X-rays. Elementary ideas about Wireless.

Books suggested :

1. A Text-book of Physics, by R. S. Willows (Messrs Arnold & Co.).
2. Intermediate Physics, by G. L. Datta (Atma Ram & Sons, Lahore). Rs.8.
3. Intermediate Physics, by C. J. Smith (Arnold & Co.).
4. Everyday Physics, by H. E. Hadley. (Macmillan & Co.). Rs.4.
5. New Practical Physics, by N. H. Black and H. N. Davis (Macmillan).

6. A Text-book of Practical Physics for Intermediate Classes, by S. R. Suri (Uttar Chand Kapur & Sons, Lahore). Rs.4.
7. An Intermediate Course and Practical Physics, by B. N. Ghose (Ram Narain Lal, Allahabad). Rs.2.
8. Experimental Hydrostatics and Mechanics } by Nightingale
 9. Heat, Light and Sound } (G. Bell &
 10. Magnetism and Electricity } Sons).

The following list of experiments indicates the minimum amount of practical work to be done by each student. It should be possible to perform other experiments in addition. An account of each experiment must be written by the student in a special notebook which will be examined. The account of each experiment should be signed by the Demonstrator, and the books should be kept in his charge.

LIST OF EXPERIMENTS

Mechanics—

- Applications of the Triangle of Forces.
- Determination of “ g ” by the pendulum.
- Nicholson’s hydrometer.
- Determination of Young’s Modulus of a wire

General properties of Matter—

- Use of the Spherometer.
- „ Screw Gauge.
- „ Calipers.
- Reading the Barometer.

Heat—

- Testing fixed points of Thermometers.
- Determination of Specific Heats.
- „ Latent Heats.
- Construction of a graph illustrating the rate of cooling of a liquid.
- Verification of Boyle’s law.
- Determination of the co-efficient of linear expansion.
- Determination of the relation between the pressure and temperature of a gas when its volume is kept constant.
- Determination of humidity by dry and wet bulb thermometer.

Light—

- Reflection and refraction of light at plane and spherical surfaces.
- Determination of refractive indices.
- Focal lengths of mirrors and lenses.
- Use of a simple photometer.

Sound—

- Determination of the velocity of sound by resonance.
- „ „ frequency of a fork by sonometer.

Magnetism—

- Mapping outlines of force by a small magnet.
- Location of neutral points and their use in magnetic measurements.
- Comparison of magnetic moments by the magnetometer.
- „ „ fields by a vibrating magnet.

Electricity—

- Variation of magnetic force at centre of a coil with radius, number of turns and strength of current.
- Determination of resistance by the use of Wheatstone's wire bridge and P. O. Box.
- Determination of resistance by the use of Ammeter and Voltmeter.
- Comparison of electromotive forces by the Potentiometer.

NOTE—The use of stencils in answering questions in Physics is not allowed but logarithms and the slide rule may be permitted in the practical examination in Intermediate Physics.

There will be also an examination in practical work.

Recommended for teachers' reference library :

- (1) Text-book of Heat, by Stewart and Satterly (University Tutorial Press).
- (2) Text-book of Light, by Stewart and Satterly University Tutorial Press).
- (3) Text-book of Sound, by Catchpool (University Tutorial Press).
- (4) Practical Physics (Shah & Co., Agra).
- (5) The Science of Everyday Life, by E. V. Buskirk, by E. L. Smith and W. L. Nourse (Con-table & Co.).

BIOLOGY

There will be two papers of three hours each and a practical examination : the first paper on Zoology and the second paper on Botany.

Marks are allotted as follows :

			Maximum
Theory paper	..	..	70
Practice..	..	..	30

The minimum pass marks for the theory paper shall be 21 out of 70 and for the practical examination 9 out of 30, the aggregate being 33 per cent.

The following syllabus is prescribed. Instructions for the teaching of Biology are appended :

(N. B.—Candidates will be required to pass in the theoretical as well as the practical part of each Science subject.)

I.—Zoology

A—Living and non-living matter. The distinctive properties of living matter (protoplasm) and its chemical composition. The structure and life-history of Amoeba and the malaria-parasite as examples of the Protozoa. A general conception of the structure and phenomena of the animal cell ; direct and indirect cell division. The union of cells to form tissues and the combination of tissues to form organs.

B—The structure of Hydra as an example of the Metazoa. The principle of the physiological division of labour and the correlated differentiation of structure.

C—The structure and bionomics of an Indian earthworm as an example of a segmented animal.

D—The structure of the cockroach as a type of Arthropoda. A general survey of the life-history of the mosquito and house-fly, and their economic importance.

E—The general characters of the Chordata.

F—The general anatomy, histology and physiology of the various systems or organs in the frog.

G—An elementary knowledge of the anatomy and osteology of the rabbit or other common mammal. The brain and eye of the sheep and the skull of the dog may be substituted for those of the rabbit.

H—A general classification of the animal kingdom with characteristics of the principal phyla.

I—Reproduction, sexual and asexual; ova and spermatozoa; oogenesis and spermatogenesis. The elementary facts of the fertilization and segmentation of the ovum, the outlines of the development and larval history of the frog, the three primary germ-layers and the organ derived from them.

II.—Botany

A—The structure and germination of seeds, the morphology of the root, stem and leaf. The chief types of floral structures. The chief types of inflorescence and the common types of fruits.

B—The parts of typical vegetable cell; the cell contents and their microchemical reactions; the division of a cell; the chief types of plant tissues. A comparative study of the internal structure of the root, stem, and leaf of the Angiosperms. The structure of the reproductive organs of the Angiosperms.

C—The structure of *Bacillus subtilis* and the modes of nutrition among the Bacteria.

D—The structure, physiology and life-histories of *Ulothrix*, *Spirogyra*, *Mucor* and yeast.

E—The structure and life-histories of a moss and a fern, and the phenomenon of alteration of generations.

F—The life-history of Angiosperms. General structure of flowers and fruits. Recognition and economic importance of the following families :

Cruciferae, Malvaceae, Leguminosae, Compositae and Liliaceae.

G—An outline of the classification of the vegetable kingdom to illustrate grades of structure and methods of reproduction.

H—Elementary plant physiology; stability of the plant body, the usual constituents of plant food; assimilation; transpiration; respiration; the main facts about growth; the chief types of movements.

Practical work

Students are expected to keep a record of all practical work in a special laboratory sketch-book, which will be liable to examination by the examiners. The laboratory instructors should sign the result of each day's practical work. A list of experiments is appended.

A—The microscopical study of Amoeba and Hydra : the study of Hydra by means of transverse and longitudinal sections.

The general dissection of the earthworm, cockroach and frog ; life-history of the mosquito ; a microscopical study of the chief animal tissues from fresh or prepared preparations of muscle, nerve, cartilage, bone, blood and connective tissue ; the microscopical study of the earthworm by means of fresh preparations and transverse sections ; a microscopical examination of the kidney, liver, spinal cord, stomach, ovary and testis of the frog. The skeleton of the frog.

The osteology of the rabbit (the skull of the dog may be substituted for that of the rabbit) and the dissection of the alimentary, vascular and reproductive systems of the rabbit or squirrel or rat.

B—The dissection of plants and parts of plants ; the preparation, simple staining and study of microscopical sections of plants. A practical study by microscopical examination and otherwise of Spirogyra, Ulothrix, bacteria, yeast, Mucor, a moss, a fern, and the vegetative and reproductive organs of Angiosperms treated in an elementary manner.

The description of a flowering plant and its parts in semi-technical language.

(Where fresh material cannot be obtained recourse should be had to prepared specimens.)

Books suggested :

1. PARKER AND BHATIA : Elementary Course of Practical Zoology. (Macmillan.)
2. HOLMES : Biology of the Frog (4th edition).
3. MARSHALL AND HURST : Practical Zoology. (Murray.)
4. RANGACHARI : Handbook of Botany for India. (Varadachary & Co., Madras, 1925.)
5. HUXLEY : Elementary Physiology. (Macmillan.)
6. SHIPLEY : Life. (Ditto.)
7. BHAL, K. N. : Indian Zoological Memoirs. I, Pheretima (Methodist Publishing House, Lucknow, 1926.) Re.1-8.
8. SMITH, OVERTON and OTHERS : Text-book of General Botany, second edition (Macmillan & Co.).
9. WELLS AND DAVIES : Text-book of Zoology, 7th edition (University Tutorial Press).

10. MARSHALL : The Frog (Macmillan) (latest edition).
11. M. J. LEGG : An Introduction to Tropical Botany (Macmillan Co.).
12. A. C. DUTTA : A Class Book of Botany (Oxford University Press).
13. E. M. THILLAYAMPALAM : An Introduction to Biology (Indian Press, Allahabad).

14. L. J. F. BRIMBLE : Everyday Botany (Macmillan & Co.).
Recommended for use in the library :

1. Dent's Modern Science Series : Biology by Discovery, by E. Green and E. A. Potter (J. M. Dent & Sons—Agents, Macmillan).
2. The Human Body and its Functions, by M. C. Stopes (Putnam & Co., London).

— — —
 APPENDIX

List of experiments in Biology

1. *Digestion.*—(a) *Experiment.*—In a test-tube collect a small amount of saliva from your mouth and dilute it with a little water. In another test-tube make 50 c.c. of 1 per cent. solution of soluble starch. To 10 cc. of the starch solution apply the Iodine test and you will get the characteristic blue colour. Now add 10cc. of the saliva solution to about 4 cc. of the starch solution in two tubes and let them stand for a while. Test one tube with Iodine and the other with Fehling's solution. The Iodine test will be negative but the Fehling test will be positive showing that starch has been converted into sugar.

(b) *Experiment.*—Take a small piece of boiled white of egg and place it in 10 cc. of water in a test-tube. Add a little dry pepsin and a little 1 per cent. hydrochloric acid to make the solution slightly acid. Keep the tube in a warm place. Note that the egg-white gets dissolved. The protein of the egg-white has become converted into peptone. This solution will not be precipitated by heating but will give the Biuret test for proteins. (The Biuret test is made by adding caustic soda solution to the protein solution and then 1 per cent. solution of copper sulphate drop by drop. On shaking lightly after each drop, a violet colour appears).

(c) *Experiment.*— Make a 1 per cent. solution of Benger's pancreatic extract or take fresh sheep's pancreas and cut it to bits and crush it and then soak it in dilute glycerine and finally filter. Take 10cc. of the pancreatic extract and add 2 cc. of 5 per cent. sodium carbonate solution to make it slightly alkaline. Add to it a small piece of boiled white of an egg and keep it in a warm place. The egg-white will be gradually dissolved and digested.

Similarly try the pancreatic extract on starch solution which becomes converted into sugar.

2. *Respiration.*— (d) (1) Set up the apparatus illustrated (Dakin, Fig. 60), which is generally used to demonstrate breathing in plants. Pass a stream of air through, and note the effect when a frog is kept in the bell-jar or a few earthworms are placed in a moist dish within it.

(2) Fix up two Erlenmeyer flasks as in the figure 61 (Dakin) and place a small quantity of lime water in each (equal quantities in each), taking care to cover the bottom end of the long glass tubes. Now breathe gently and slowly through the tube, A, sucking in air this way and also breathing it out. The fluid in the flasks causes the air to enter by (2) and to make its exit by (1). Note that the contents of each flask go milky, but that flask (1) becomes more milky than (2) the CO_2 in the air is responsible for the change in (2); that the breath contains much CO_2 is shown by (1). It is easy to add a U tube to absorb the CO_2 in the air, and the flask (2) then serves to test the CO_2 -free air and flask (1) remains as before the test for the respired air.

3. *Blood.*— (e) Prick your finger or ear lobe and let it bleed into some water till you have a nice clear red fluid. Put this in a small bottle and add a crystal of sodium hydrosulphite (not hyposulphite). This will combine with the oxygen and the liquid will turn purple. Shake it up with air or bubble air through, and it goes red again.

(f) Circulation of blood in the frog's foot-web or tail of tadpole.

4. *Skeleton and Movement.*— (g) Dissection of the elbow-joint of rabbit or squirrel. Action of muscles on the olecranon process. Lever of the 3rd order.

5. *Nervous System.*— (h) Examine cut ends of fresh spinal cords of goat to make out grey and white matter. Make a preparation of

ganglion-cells from grey-matter. Demonstrate the knee-jerk reflex. One person should sit on the edge of a table with one knee over the other. A light blow is struck upon the ligament just below the knee cap. The leg responds with a jerk. This is not due to direct stimulation of the muscles involved. A reflex arc is present involving the spinal cord. Try same experiment after subject has clenched fists. Notice that response is more marked. The degree of response depends upon condition of body, and is utilised by physicians as indicating condition of nervous system.

6. *Eye.*—(i) *Goats' eye—dissection.*—Obtain a fresh eye of a goat and cut out a small window at the back with a pair of scissors. Place a little cigarette paper over the window and hold a burning candle in front of the eye. The image of the flame should appear sharply and inverted on the paper. (Experiment from L. Hill's Human Physiology)

Binocular vision — If a piece of glass with an ink spot on it be held up at arms length about six feet in front of a window divided by a cross bar, we shall notice that the ink spot (*Dakin, P. 318 Fig. 169, I, i.s.) appears double when the cross bar (c. b.) is focussed sharply. If the ink spot be focussed (Fig. 169, II), the cross bar on the window will appear double. The explanation is, that when we focus points at varying distances, accommodation is not likely taking place, but the two eyes are directed at the point focussed in such a way that the image falls on corresponding parts of each retina. (In Fig. I. the image of the cross bar A falls on corresponding parts of each retina. In Fig. II. it is the image of the inkspot A which falls on corresponding places in each retina). This implies that the two eyes converge, and the degree of convergence depends upon the distance of the object. The movements of the eyeballs must be extremely delicate and balanced, and this is the work of the six eye muscles. The reason of the doubling of the cross bar and the ink spot in the experiment is explained by the illustration (Fig. 169). It is due to the images of the object not specially focussed falling on different places on the two retinas, and what each eye sees is recorded separately in the brain.

7. *Reproduction.*—(j) Collect cocoons of earthworms in August and September. Obtain frog's eggs and sperms in July. Fertilize the eggs and rear the tadpoles.

*W. J. Dakin—Elements of General Zoology (Oxford University press) § 12/6.

APPENDIX

Instructions for the teaching of Biology

1. The teacher must consider the purpose for which he teaches Biology—to prepare students for the university, for medical and forest colleges, and for more intelligent and more joyful living. Biology deals with the world of life surrounding the student, and every effort should be made to present Biology as a living subject, rather than as a vast mass of unrelated and (to the students) often meaningless fact to be memorized.

2. Teachers may take more liberty in teaching Biology than has been considered possible in the past. They should feel that they are not too rigidly bound by the syllabus. Much of what is commonly accepted as the interpretation of the syllabus, and as the proper content of Biology, is a tradition from the past. Teachers may, to a much larger extent, determine for themselves what they are to regard as the proper things to include in their teaching, and the proper emphasis to be given to these things; the syllabus will then become a friendly guide.

3. The syllabus is a record of work that ought to be covered, and the teacher may take up the various topics in whatever order he thinks best.

4. The additional items in the new syllabus are not intended to enlarge the syllabus, but to shift the emphasis given to the various parts of it. For instance, it is not intended that the cockroach shall be studied in minute detail, but that it shall be made the basis for acquaintance with the great assemblage of arthropods. The mosquito is to illustrate metamorphosis, and is used because of the great importance of mosquitoes to man, because it can be observed anywhere, and because it can be readily reared in the laboratory. The mosquito is to illustrate also the carrying of disease by insects, and the malaria-parasite is an illustration of a disease-producing organism transmitted by an insect. The economic and bionomic importance of these animals is to be emphasized, rather than complete details of their structure.

Likewise, it is intended to allow considerable freedom to the teacher by permitting the use of mammalian types that are most

readily available. The purpose is to become acquainted with the characteristic features of mammalian anatomy, rather than with minute details of one animal only to the exclusion of all others.

In Botany more emphasis should be put on what plants do, and how they work, than on extensive study of various growth forms which have little meaning for the students unless correlated with the great problems of plant economy. Moss is added to the syllabus as a simple, clear and easily accessible plant illustrating sex organs and alteration of generations ; it should be treated from this point of view, and no effort should be made to consider its anatomy in the detail usually regarded necessary in the fern.

DRAWING

There will be two papers, each of three hours' duration : the first paper on Solid Geometrical Drawing and the second paper on Object and Memory Drawing.

The second Drawing paper shall consist of two parts (a) a Drawing from a group of objects placed and retained before the class during the examination period, and (b) a question based entirely on memory. The number of marks for (a) should be 30 and for (b) 0.

Syllabus—

Object Drawing—In Pastles on Tinted Paper or Water Colours on white Cartridge paper.

Progressive work in groups of the common objects listed for High Schools such as—

Plate of Oranges, Tomatoes and Bananas ; Candle-stick and Matches, Ink-pot and Pen, Gloy Bottle and Brush ; Bundles of Firewood ; Glass of Water of Milk, Chinese Lantern, Liquids in Bottles ; umbrellas, etc.

Nature Study (Advanced)—The more difficult Flowers, Bunches of Flowers, Leaves with Fruit and Flowers, Compound Leaves.

The above, which is but suggestive, will involve instruction in the art of blending colours, colour harmonies, colour schemes and shadows together with technicalities, such as tint-softening, blending, direct colouring, light tint on dark and dark on light, use of opaque colours and backgrounds.

Memory Drawing—(a) Objects such as listed above which may be placed before the students for a limited period, after which the objects shall be taken away and the drawing made.

(b) The drawing of some familiar and common objects entirely from memory.

A number of small objects may be placed once a week on a covered up tray, exposed, say, for ten seconds, and the class be asked to write down as many objects as they remember to have seen.

Books recommended :

Pastel work, Vols. I and II, by H. A Rankin (Messrs. Isaac Pitman & Sons). Price, Rs.4 per volume.

Materials—As for the High School Examination of 1944 (Object Drawing).

Geometrical—Solid Geometry, simple solids, plans, elevations, sections isometric projection, simple parallel and angular perspective, and all forms of Plane and Diagonal Scales.

Books recommended :

1. Geometry, Plane and Solid (Morris) (Longmans Green & Co., Bombay).
2. The Roorkee Treatise on Drawing, Part I only (Thomason College Book Depot, Roorkee).
3. The Principles of Perspective, by Henry Lewis (George Rowney & Co., London). Price, 1s. 6d.

Materials—School Geometry set (Reeves).

Book recommended for reference by teachers :

Perspective for Arts Students (Hatton)

ECONOMICS

There shall be two papers of three hours each. The first paper shall cover Production, Consumption and Taxation, and the second paper Exchange and Distribution.

Introductory

Subject-matter. Relation to other sciences. The development of Economic life.

Production

Relation between wants and production. The factors of production.

Land—Natural resources of India. Soil and Climate. Source of power. Raw materials. Importance of land as an agent of production. The demand for land for different uses, agricultural, industrial and commercial.

Labour—Density and distribution of population in India. Health and vital statistics. Occupations. Supply and efficiency of labour.

Capital (fixed and circulating)—Buildings and machinery. Means of communication and transportation in India. Irrigation.

Organization (management plus enterprise)—Combination of the factors of production in village industries and in factories. Efficiency of the factors of production. Different uses and how efficiency increases. Efficiency of labour increased by education. Division of labour and specialization of machinery. Large-scale production and its limitations. Cottage industries in the United Provinces. Diminishing and increasing returns. Development of industrial organization. Its relation to means of transportation. Accompanying changes in rural industries and in agriculture in India. Extensive and intensive cultivation.

Exchange

Barter—Conditions of barter. How both parties gain in utility by exchange.

Exchange by sale and purchase. Demand and supply schedules and curves. Balancing of demand and supply in a local market. Relation

of price to expenses of production. Changes in the expenses of production. The development of markets. Causes of the extension of markets. India's imports and exports.

The machinery of exchange. Money. Kinds of functions of money. Standard and token coins. Free and limited coinage. Monetary standards (single and double). Gresham's law. Convertibility of paper money in India. Credit and Credit Instruments. Hundies and Cheques. Main types of Indian banks and their functions. The *sahukari* and *sarafi* systems. All the above should be illustrated by Indian examples. (*Foreign exchanges and the history of Indian currency and banking are excluded.*)

Distribution

The problem of distribution.

Rent—The law of rent as applied to India. Land tenure in the United Provinces.

Salaries and wages—Real and money wages. Wages as determined by supply and demand of labour. The standard of living. Mobility of labour in India. Influence of social customs.

Interest—Gross and net interest. Conditions of the growth of capital. Mobility of capital in India. Principles of co-operative credit and its advantages for India.

Profits—As the reward of enterprise. The field for enterprise in India.

Consumption

Utility—Marginal and total utility. Law of diminishing utility. Law of demand. Elasticity of demand.

Satisfaction as the end of all economic activity. Wants and their classification. Division of income among different items of expenditure. Family budgets. Relation of saving to spending. The social side of spending.

Taxation

A description of the taxes and other sources of revenue and items of expenditure of the Imperial Government, of the United Provinces, and

of the District Boards and Municipalities of the United Provinces : simple distinction between direct and indirect taxes. (Nothing of the theory of taxation is to be taught.)

NOTE—Candidates may be required to draw charts, graphs and maps in the written examination, to frame budgets and analyse them, and to solve problems relating to costs of production.

The following books should be consulted :

1. *B. G. Bhatnagar*—Outlines of Economics for Beginners in India (Indian Press, Allahabad).
2. *Moreland*—Introduction to Economics for Indian Students (Macmillan & Co.).
3. India in—(the latest edition of the book available being recommended), published by the Central Publicity Office. (Chapters dealing with economic progress only are to be read.)
4. *P. Banerjee*—A Study of Indian Economics (3rd edition, 1928) (Macmillan & Co.).
5. *J. E. Symes*—A Short Text-book of Political Economics (Longmans Green & Co.).
6. *E. C. Bhatt*—A Handbook of Practical and Written Work in Economics (Indian Press, Allahabad).
7. Elements of Civics, Vol. I, by Brown and Dutta (Oxford University Press).
8. First Principles of Economics, by Shankar Lal Agarwal and Ram Narain Gupta (Indian Book Depot, Lucknow).
9. Dr. B. S. Agarwala : The Elements of Economics (Lakshmi Narain Agrawala, Agra).

Teachers should also consult :

1. *V. G. Kale*—Indian Economics. (Aryabhusan Press, Poona.)
2. *Marshall*—Economics of Industry. (Macmillan & Co.)
3. *Olay*—Economics for the General Reader. (Macmillan & Co.)

4. *Jack*—Economic Life of a Bengal District. (Clarendon Press, Oxford.)
5. *Mann*—Life and Labour in a Deccan Village. (Oxford University Press.)
6. *B. G. Bhatnagar*—Bases of Indian Economy. (Ram Narain Lal, Allahabad.)
7. *Lettice Fisher*—Getting and Spending. (Collins' Clear Type Press, London.) 3s. 6d.
8. *Jathar and Beri*—Indian Economics (2 volumes). (Oxford University Press.)
9. *Crump*—A Jeeze Book of Economics. (Macmillan & Co.)
10. *Fairchild*—Elements of Economics.
11. *F. H. Robinson*—Elements of Economics, Books I and II.
12. *J. P. Singhal*—Elements of Economic Principles. (University Book Depot, Agra.)
13. *Thomas*—Elements of Economics. (The Gregg Publishing Co.)
14. Report on an Inquiry into Working Class Budgets in Bombay, by G. Findlay Shirras. (Government of Bombay, Labour Office.)
15. *R. K. Mukerji*—Rural Economy of India. (Longmans Green & Co.)
16. Intermediate Economics, 4th edition, by Sh. Ataulloh, M.A. (Punjab Printing Works Book Depot, Lahore.)
17. *K. K. Sharma*—The Indian Money Market. (Bangalore Printing and Publishing Co., Mysore Road, Bangalore.)
18. *K. K. Sharma*—Currency and Commerce. (Bangalore Printing and Publishing Co., Bangalore.)

Teachers should give facts and figures from the latest edition of the Indian Year Book ("Times" Press).

Practical work

Teachers should take out students to study small industries, markets and conditions of living in both city and country. The principles should be illustrated from these studies. The following is the minimum amount of practical work that should be done by students :

- (1) Two budgets of consumption : one of an artisan, one of a cultivator, if possible, with the student's own suggestion for improvement.
- (2) Two statements showing the expenses of production, for one month, or a longer period, or for a fixed quantity of product of two small industries, with suggestions for the improvement of the industry.
- (3) Four diagrams illustrating the above four statements.
- (4) Two maps representing economic conditions in India or parts of India.

NOTE—Principals of Colleges should provide all possible facilities for the students of Economics to carry on the prescribed practical work.

Written work

Teachers should insist on as much written work as possible. The following methods are suggested :

Essays—Occasional essays may be assigned.

The following written work is the minimum to be done by each student :

- (1) Two long examinations of at least $2\frac{1}{2}$ hours each or six one-period tests, or one such examination and three such tests.
- (2) Ten questions set in class to be answered in about ten minutes each.
- (3) Two essays of about ten pages, or four essays of about five pages. (One long essay and two short essays are advised.)

In the case of *private candidates* double the number of essays plus a description of a market or fair and of a cottage industry or a Co-operative Society may be submitted in place of items nos. (1) and (2) of the written work.

CIVICS

There will be two papers of three hours each : the first paper on Civic Theory and the second paper on Indian Civics.

Paper I—Civic Theory

Syllabus—

1. The meaning of Civics, its scope and the relation of Civics with other social sciences.
2. The origin of Society and State, and the types of association—
 - (a) Association based on kinship, relation of individual and family, class, etc.
 - (b) Association based on religion, relation of individual and community.
 - (c) Association based on occupation, relation of individual and economic group.
 - (d) Association based on political interest, relation of individual, nation and humanity.
3. The individual and the State, Sovereignty.
4. The meaning of citizenship, the rights and duties of the citizen—civil and political.
5. The end and functions of the State—
 - (a) Principles of State activity.
 - (b) Functions of the State—defence, maintenance of law and order, material welfare, education.
6. The forces of political activity—
 - (a) Public opinion and Press.
 - (b) Party system.
 - (c) Moral and religious influences.
7. The structure of the government—
 - (a) Legislature, executive, judiciary.
 - (b) Central and local administrations.
 - (c) The methods of representation and process of elections.
8. The classification of States—
 - (a) Monarchy, aristocracy and democracy.
 - (b) Unitary and federal constitution.
 - (c) Rigid and flexible constitution.

Books recommended :

1. Drs. V. S. Ram and B. M. Sharma. Elements of Civics. (G. R. Bhargava & Sons, Chandausi.)
2. Sastri, V. S. Kamala Lectures. (Calcutta University Press.)
3. S. V. Puntambekar .. An Introduction to Civics and Politics. (The Indian Press, Ltd., Allahabad.)
4. Maccunn, J. Ethics of Citizenship. (Maclehose Jackson & Co, Glasgow, or Macmillan & Co., London)
5. Whyte, E. M .. The Foundations of Civics. (Syndicate Publishing Co., Ltd., London.)
6. Beni Prasad .. The A B C of Civics. (Indian Press, Ltd., Allahabad.)

*Paper II—Indian Civics**Syllabus—*

1. The structure of the Indian government (as modified by the Act of 1935).
 - (a) The Crown, the British Parliament, the Secretary of State for India and his Advisers.
 - (b) The Central Government in India—
The Executive, the Legislature, their functions, powers and constitution.
 - (c) The Provincial governments—
The Executive, its constitution and powers.
The Legislature, its constitution, powers and functions
 - (d) Local Self-Government—
District Boards and Municipalities, their constitution, powers and functions.
 - (e) The Village Boards and Panchayats, Judicial Administration.
Civil Courts, Original and Appellate.
Criminal Courts, Original and Appellate.
The Privy Council

- (f) **The Indian Services—**
The Army.
The Indian Civil Service and other All-India Services.
The Provincial Services.
- (g) **Indian Finances—Sources of Income and heads of Expenditure—Central and Provincial.**
2. **The Indian People—**
 (a) **Religions and Movements of Religious Reforms.**
 (b) **Social Organizations—Social Movements.**
 (c) **Economic conditions—Agriculture, Industry, Trade, Transport, Poverty.**
 (d) **Education.**
 (e) **Nationalist Movements.**
3. **The Indian States—**
 (a) **The Crown and the States.**
 (b) **The States and their subjects.**
 (c) **The States and British India.**
4. **India and the League of Nations.**

Books recommended :

- | | |
|-------------------------|--|
| 1. Palande .. | .. Indian Administration (Oxford University Press). |
| 2. Drs Ram and Sharma | India and the League of Nations (Upper India Publishing House, Ltd., Lucknow). |
| 3. Marris and Garner .. | .. Civil Government. |
| 4. D. N. Banerji .. | .. The Indian Constitution and its Actual Working (Longmans Green & Co.). |
| 5. S. V. Puntambekar .. | .. Foundations of Indian Civics (Nand Kishore & Bros., Benares). |

HISTORY AND ALLIED GEOGRAPHY

Candidates may choose from the following groups of two papers each, each paper being of three hours :

(*N.B.*—Candidates are expected to draw freehand maps of India and Great Britain and Ireland.)

Group A

Paper I—Indian History from the earliest times to 1935.

Paper II—British History, 1485–1919.

Group B

Paper I—Indian History from the earliest times to 1935.

Paper II—European History, 1453–1919.

Books recommended for Paper I under Groups A and B :

1. SRINIVASACHARI AND RAMASWAMI AIYANGAR : A History of India, Parts I, II and III. (Srinivas Varadachari & Co., 4 Mount Road, Madras.)
2. ROBERTS, P. E. : History of British India under the Company, and the Crown, Vol. VII, Parts I and II. (Clarendon Press, Oxford.)
3. AIYANGAR, R. : Pre-Musalman India (Longmans Green & Co.)
4. GABBETT AND KOHLI : The Muhammadan Period. (Longmans.)
5. RUSHBROOK WILLIAMS : The British Period. (Longmans.)
6. DR. ISWARI PRASAD : History of Muslim Rule in India. (Indian Press, Allahabad.)

The following atlas is recommended :

JOPPEN : Indian Historical Atlas. (Longmans Green & Co.)

Books recommended for Paper II under Group A :

1. CABBINGTON AND JACKSON : History of England. (Macmillan.)
2. TOUT, T. F. : History of Great Britain, III. (Longmans Green & Co.)

3. R. B. MOWAT : A New History of Great Britain. (Oxford University Press.)
4. TENNEN : History of England. (Macmillan.)
5. S. R. GARDINER : A School Atlas of English History. (Longmans Green & Co.)

Books recommended for Paper II under Group B :

1. RAMSAY MUIR : Atlas of European History.
2. A. J. GRANT : History of Europe. (Longmans Green & Co.)
3. THATCHER AND SCHWILL : History of Europe. (John Murray, London.)
4. J. H. ROBINSON : History of Western Europe. (Ginn & Co., Boston, New York, U. S. A.)

HISTORIES OF GREECE AND ROME AND ALLIED GEOGRAPHY

There will be two papers of three hours each.

Paper I—History of Ancient Greece.

Books recommended :

1. EDMONDS, C. D. : Greek History for Schools. (Cambridge University Press.)
2. J. B. BURY : Greek History for Beginners.
3. E. ABBOT : Pericles. (G. Putnam & Sons.)
4. Tutorial Histories of Greece and Rome. (University Tutorial Press.)

Paper II—History of Ancient Rome up to A.D. 476.

Books recommended :

1. BRYANT, E. E. : A Short History of Rome. (Cambridge University Press.)
2. SHUCKBURGH : Augustus.
3. SHUCKBURGH : A Short History of Rome for Beginners.
4. PELHAM, H. F. : Outline History of Rome. (Rivington, London.)
5. ROBINSON, C. E. : The Roman Republic. (Methuen.)

GEOGRAPHY

There will be two papers of three hours each. The first paper will contain questions on part I of the syllabus and the second paper on parts II and III of the syllabus.

Syllabus—

I.—Regional Geography : The World Geography (Major Natural Regions) with more intensive study of—

(a) Japan and China and the chief industrial areas of Europe;

(b) North America with special reference to the chief industrial areas east of the Rocky Mountains.

NOTE—Candidates will be expected to have such an adequate knowledge of the principles of Geography (physical and human) as is necessary for an intelligent study of the regions of the world.

II.—Study of *survey maps with special reference to $\frac{1}{1000000}$ Survey of India and Adjacent Countries Series, sheet no. 43 (Srinagar) or no. 52 (Leh), or no. 53 (Delhi and Simla); also 1 inch Survey of India Map no. 63K/12. † Study of the principles of the chief map-projections, such as Cylindrical (Mercator), Orthographic, Stereographic, Spherical, Conical, Elliptical (Mollweide). Study of the weather maps published by the Meteorological Office, Poona, with special reference to the maps for January and July of the two years of the Intermediate course, and of other distribution maps. Colleges should subscribe for the daily weather maps published by the Meteorological Office, Poona. Annual subscription Rs.36.

† The work should show that outdoor geographical studies, including practical map-work, have formed a feature of the course.

* Survey maps are obtainable V -P. P. from the Officer-in-charge, Survey Office Wood Street, Calcutta. Teachers are advised to send for a copy of the "Catalogue of maps", price Re.1 including postage

† The following explanation is added to fix the standard of practical work required under section II of the syllabus :

To find the latitude and longitude from given data.

To construct "Scale diagrams."

To draw sections and profiles from given contours.

To draw a contour map from a given description of a country.

To describe the country shown on a given map with contours and conventional signs.

To study at least four Survey Maps of India, both in the 1-inch and one-millionth series. (To be obtained from 18 Wood Street, Calcutta.)

To read a given Weather Chart.

To draw isobars for given areas from given data.

To find probable wind direction at given stations.

This study should be supplemented by Weather Charts issued by the Meteorological Office, Poona.

To construct a distribution map from given data.

To draw the following Projections from given data and to know their special features
Mercator, Mollweide, Simple Conic.

To survey a small area by Chain and Tape.

III.—Economic Geography with special reference to India. The world position of India ; its natural resources ; its economic development. The general relation between geographic factors and the production of the major raw materials and food-stuffs. Sources of power. Factors affecting transport, exchange of commodities and the localization of major industries.

The world production, distribution and (where applicable) conditions of growth of the commodities : wheat, rice, tea, coffee, wine, cotton, jute, sugar, and rubber, wool, coal, iron and petroleum.

Books recommended :

I.—As text-books—

Unstead and Taylor : Regional and General Geography for Students. (Philip.) 7s. 6d.

Leonard Brooks : New Regional Geography, Book IV. The World. (London University Press.) 7s. 6d.

Stamp : Intermediate Commercial Geography. Vols. I and II. (Longmans.)

Young and Fairgrieve : A Class-book of Practical Geography. (Philip) 2s. 6d.

Dr. I. R. Khan : Advanced Atlas. (Hindustani Book Depot, Lucknow.)

II.—As reference books for students—

Lake : Physical Geography. (Cambridge University Press.) 12s.

George : Relations of History and Geography. (Oxford Press.) 5s.

McMunn and Coster : A Regional Geography of Europe. (Oxford Press.) 4s. 6d.

Unstead : Europe of Today. (Sadgwick and Jackson.) 4s.

Esson and Philip : Map-reading Made Easy. (Philip.) 3s. 6d.

Dickson : Maps, how they are made, how to read them. (Bacon.) 6d.

Mort : An Elementary Practical Geography. (Blackie.) 2s. 6d.

Davis : Elementary Meteorology. (Ginn.) List price \$2.50.

Curr : Commercial Geography. (Black.) 4s.

- Lyde : Man and his Markets. (Macmillan.) 3s.
 Herbertson : Man and his Work. 1s. 6d.
 Goodchild : Geography and Man. (Ram Narain Lal, Allah-
 abad.) Rs.2.
 Statesman's Year Book. (Macmillan.) 20s.
 Whitaker's Almanac. 4s.
 Indian Year Book : ("The Times of India" office). Rs.5-4.
 Also to be used as a text-book.
 Imperial Gazetteer of India. Vols. III and IV. (Oxford.)
 7s. 6d. each.
 Atlas of Commercial Geography. (Cambridge University
 Press.) 3s.
 The Oxford Economic Atlas. (Oxford Press.) 6s.
 E. C. and L. D. Stamp : Practice' Atlas of Modern Geo-
 graphy. (George Bell & Sons) 1-12.

III.—As reference books for teachers—

- Russell : North America. (Oxford Press.) 10s. 6d.
 Rodwell-Jones and Bryan : North America. (Methuen.)
 12s. 6d.
 Chisholm : Europe. Vols. I and II. (Stanford) 15s each.
 Kean : Africa. Vols. I and II. (Stanford.) 15s. each.
 Mackinder : Britain and the British Seas. (Oxford Press.)
 10s. 6d.
 Griffith Taylor : Australia—Physiographic and Economic.
 (Clarendon Press.) 3s. 6d.
 Shanhan : South America. (Methuen.) 17s.
 Lyde : Europe. (Macmillan.) 10s. 6d.
 Stamp : Asia. (Methuen.) 27s. 6d.
 Simmons and Richardson : An Introduction to Practical
 Geography. (Oxford Press.) 4s.
 Ormsby and Jamison : Mathematical Geography, Vol. I.
 (Pitman.) 5s.
 Chisholm : Commercial Geography. (Longmans.) 25s.
 (New edition.)
 Salisbury : Physiography for Schools. Shorter Course.
 (Murray.) 6s.

- Davis : Elementary Physical Geography. (Ginn.) 5s. 6d.
- Tarr : Elementary Physical Geography. (Macmillan.) 7s. 6d.
- Mill : The Realm of Nature. (Murray.) 5s.
- Philip's sets of maps of the various continents and of India *with explanatory handbooks.*
- Philip's sets of synthetic maps (for student's use). 1s. per packet.
- Philip's Modern School Atlas of Physical, Political, and Commercial Geography. 7s. 6d.

DEDUCTIVE LOGIC AND INDUCTIVE LOGIC

There will be two papers of three hours each : the first paper on Deductive Logic and the second paper on Inductive Logic. Each of the two papers should include at least one question in Indian Logic.

N.B.—Teachers are expected to lay adequate emphasis on written work and application of logical principles to problems.

Deductive Logic

The following syllabus is prescribed :

Definition, scope and value of Logic. Nature of thinking. The laws of thought. The relation of thought and language. Terms and their classification. Denotation and Connotation of terms. The predicables. Formal division and definition. Propositions, their import. Reduction of statements to logical form. Distribution of terms. Nature and forms of inference. The nature and forms of Anumana (Inference) in Indian Logic. The opposition of propositions and various forms of deduction. The syllogism, its figures and moods. Reduction, direct and indirect. Hypothetical, disjunctive and mixed syllogisms. The Dilemma, Enthymeme, Sorites and Epicheirema. Function and value of syllogism. Analysis of deductive arguments. The principal forms of Hetvabhāsa (fallacies).

Inductive Logic

The following syllabus is prescribed :

The nature and presuppositions of inductive inference. Causation, its significance and importance in induction. The concept of causality in Indian Logic. Observation and experiment. Classification, nomenclature, and terminology. Hypothesis. Imperfect induction—simple enumeration and analogy. Methods of scientific induction. The deductive method of investigation. Analysis of inductive arguments and application of inductive methods. Explanation and establishment of laws. The relation of induction to deduction.

NOTE—Fallacies both in Deduction and Induction should be treated under appropriate context, not as a separate topic.

Books recommended (not prescribed) to indicate the standard of treatment of the topics prescribed in the syllabus :

1. The Elements of Logic: Robert Latta and Alexander Macbeath. (Macmillan & Co.)

2. Intermediate Logic : Welton and Monahan. (University Tutorial Press, London.) (Revised edition.)
3. Elementary Logic, Deduction and Induction : Diwan Chand (Narayan & Co., Meston Road, Cawnpore.)
4. A Text-book of Intermediate Logic (Induction) : Jwala Prasad. (Gaya Prasad & Sons, Agra.)
5. Elements of Modern Logic, by Mellone. (University Tutorial Press, Ltd., Oxford.)
6. The Elements of Indian Logic, Chaps. III V and VIII by B.L. Atriya (Indian Bookshop, Benares).

Recommended for teachers' reference :

1. Principles and Problems of Right Thinking, by H. E. Curt. (Harper Bros., New York.)
2. Exercises in Logic and Scientific Method, by A. Wolf. (George Allen & Unwin, Ltd., London.)
3. Elements of Logic, by Mellone.
4. Formal Logic, by Keynes.
5. Introduction to Logic, by Joseph.
6. Tarka—Sangraha of Annamalhatta, edited by Athalye and Bodas (Bombay Sanskrit Series, Poona).

DEDUCTIVE LOGIC AND ELEMENTARY PSYCHOLOGY

There will be two papers of three hours each : the first paper on Deductive Logic and the second paper on Elementary Psychology.

Syllabus—

(The same as in the subjects just preceding and following.)

Elementary Psychology and Educational Psychology

There will be two papers of three hours each : the first paper on Elementary Psychology and the second paper on Educational Psychology.

PAPER I—Elementary Psychology

Syllabus—

(a) (1) A general knowledge of the structure and function of the nervous system,—nerves, spinal cord and brain. (2) A general description of the sense organs.

(b) General definition and scope of Psychology ; data of Psychology ; Psychological methods ; Introspection, Observation and Experiment.

(c) Sensation—its varieties : vision, audition, smell, taste, touch, temperature ; Kinæsthetic and organic sensation ; sense development and general mental development.

(d) Perception—its general nature, its varieties, tactual localization, illusions and hallucinations.

(e) Images—their nature, their types, development of imagination, the role of images in mental life, imagination, dreams.

(f) Attention—its general nature, its varieties, its conditions.

(g) Memory and Association, Laws of association, Retention, recognition, recollection, memory and its disintegration and decay.

(h) Learning—habit and practice, fatigue, simple learning curves.

(i) Action—reflex actions, ideo-motor actions, instinctive and voluntary actions.

(j) Emotion—significance of bodily changes, emotion and instinct abnormalities of emotions.

(k) Personality—Factors in development of personality ; various types, e.g. introvert, extrovert, etc.

Books recommended :

- (1) Morgan and Gilliland—Introduction to Psychology (Macmillan).
- (2) Titchener—A Primer of Psychology (Macmillan).
- (3) Titchener—A Beginners' Text-book of Psychology (Macmillan).

PAPER II—Educational Psychology

NOTE—It is expected that students will be made acquainted with the experimental approach to the various problems of Educational Psychology.

(a) Relation of Psychology and Education.

(b) Mental development—influence of heredity and environments : stages of child development, adolescence.

(c) Individual differences—type theories, determination of individual differences by observation and psychological tests.

(d) Foundations of behaviour ; Instincts and innate tendencies—fear, pugnacity, curiosity, imitation, suggestion, play, etc. : their educational value.

(e) Development of Personality—growth of sentiments and formation of character.

(f) Sensation—perception, the educative value of observation.

(g) Attention—interest, attention-getting devices, the effect of repetition.

(h) Image—association of ideas, memory and its training.

(i) Learning—laws of learning, learning as related to age, lapse of time and effects of disuse.

(j) Mental work and fatigue—effect of continuous work, symptoms of mental fatigue, relation of muscular work and fatigue to mental work and fatigue.

(k) Mental tests—intelligence, its nature and tests of intelligence, tests and their revision.

(l) Abnormalities of behaviour ; The Problem child—the precocious, the subnormal, the delinquent.

Books recommended :

- (1) Jha—Modern Educational Psychology (Indian Press, Allahabad).
- (2) Drever—Introduction to Educational Psychology.
- (3) Kennedy and Fraser—Educational Psychology (Kegan Paul).
- (4) Norsworthy and Whitley—The Psychology of Childhood (Macmillan).
- (5) Leary—Educational Psychology (Thomas Nelson & Sons—New York).

A MODERN INDIAN LANGUAGE

(a) Hindi

There will be three papers, each of three hours' duration : the first paper will be set on the prescribed Prose, History of Hindi Literature and Unseen, the second paper on the prescribed Poetry with Rhetorics and Prosody, and the third paper on the books prescribed for non-detailed study and composition.

NOTE—(a) Ten per cent. of the marks in the first paper will be allotted to Unseen; the same percentage of marks in the second paper will be allotted to Rhetorics and Prosody and one-third of the total marks in the third paper will be allotted to the portions for non-detailed study.

(b) Candidates are required to select books for non-detailed study under one of the three groups given hereafter. They are not required to study them intensively; they are only expected to show that they have studied them intelligently and with some appreciation.

*Paper I—Prose, History of Hindi Literature and Unseen—**Text-books prescribed :*

- (1) स्कंदगुप्त by Jai Shankar "Prasad." Students' edition, Re.1-4
- (2) आधुनिक हिन्दी कहानियाँ, by "Shilimulih" (Manas-Mukta Kar-yalaya, Kisraul, Moradabad), Students' edition, Re.1.
- (3) गद्य प्रकाश (Revised introduction), by Sad Guru Saran Awasthi (Indian Press, Allahabad) (half cloth, stiff cover— Re.1-4).

The following books indicating the scope and standard of knowledge required in the History of Hindi Literature and Unseen are recommended :

- (1) हिन्दी साहित्य, by Ganesh Prasad Dwivedi. (Hindi Press, Allahabad.)
- (2) हिन्दी साहित्य का संक्षिप्त इतिहास, by Nand Dularey Vajpai. (Indian Press, Allahabad.)
- (3) गद्य प्रकाश, Hindi Unseens, Part II, by Sad Guru Saran Awasthi. (Agarwal Press, Allahabad.)
- (4) हिन्दी साहित्य के इतिहास का उपोद्घात, by Munshi Ram Sharma, second and improved edition, 12 annas. (Gaya Prasad & Sons, Agra.)

*Paper II—Poetry with Rhetorics and Prosody—**Text-books prescribed :*

- (1) काव्य-कुसुमाकर. by Ram Bahori Shukla. (Saraswati Mandir, Benares) (stiff cover, Re.1-4).
- (2) सुदामा चरित्र by Narottam Kavi, edited by Hari Shanker Sharma (University Book Depot, Agra.) Annas 5.
- (3) पंच-वटी, by Maithili Sharan Gupta. (Sahitya Sadan, Chirgaon, Jhansi.)

The following syllabus is prescribed on Rhetorics and Prosody :

(१) शब्दालंकार :—वक्रोक्ति, अनुप्रास, यमक, इलेष ।

अर्थालंकार :— उपमा, रूपक, अनन्वय, अपहृनि, प्रताप, स्मरण, भ्रान्तिमान, संदेह, उत्प्रेक्षा, व्यतिरेक, उल्लेख, हृष्टांत, अतिशयोक्ति, प्रतिवस्तु उपमा ।

स्थायी, भाव, रसों के नाम और परिचय ।

(२) मात्रिक :—चौपाई, रोला, रूपमाला, गीतिका, हरिगीतिका, बरवै, दाहा, सोरठा, कुंडलिया ।

वर्णवृत्त :—इंद्रवज्रा, उपेन्द्रवज्रा, घंशष्, बसंततिलका, सवैया (मदिरा, मत्तगयंट, सुमुखो, सुन्दरी) ।

मुक्तक :—मनहर (कवित्त), घनाक्षरी ।

Books recommended :

- (1) काव्यांग-कौमुदी, Part II, by Vishwanath Prasad Misra and Mohan Vallabh Pant. (Nand Kishore Bros., Benares.)
- (2) पिंगल-प्रबोध, by Jyoti Prasad "Nirmal." (Hindi Press, Allahabad.)
- (3) काव्य-जिज्ञासा, by Ram Krishna Shukla. (Manas-Mukta Karya laya, Kisraul, Moradabad.) Price Re.1.

Paper III—Non-detailed study and composition—

Candidates are required to study one of the following three groups :

(A) Medieval Poetry :

- (1) तुलसी—पार्वती मंगल, जानकी मंगल (Gautam Bros., Cawnpore).
- (2) वर्मा-चित्रावली (Ram Narain Lal, Allahabad).
- (3) नन्ददास—भंवर गीत (Ram Narain Lal, Allahabad).

(B) Literary criticism :

- (1) वर्मा साहित्य समाजेचना (Sahitya Mandir, Allahabad).
- (2) संक्षिप्त हिन्दो नवरत्न (Ganga Granthagar, Lucknow).
- (3) कयूर-स.हित्य-समीक्षा (Indian Press, Allahabad).

(C) Modern Literature :

- (1) मैथिलीशरण गुप्त—पनघ (Sahitya Sadan, Chirgaon, Jhansi).
- (2) गुरुभक्त सिंह—नूजहाँ (Guru bh .kt Singh, Executive Officer, Municipal Board, Azamgarh).
- (3) प्रेमचन्द—प्रेमतीर्थे (Saraswati Press, Benares).

(b) Urdu

There will be three papers in this language, each of three hours duration : the first paper will be set on the prescribed Prose, the second on the prescribed Poetry, and the third on Unseen and Composition. Candidates are expected to have a knowledge of the outlines of the History of Urdu Literature. Critical questions will be set in the first and second papers.

Paper I--Prose--

- ۱ -- مہد امن (باغ و بہار - قصہ ملک فیروز کے شاہزادے کا) از برس دن کے بعد تا نہ کھانے کی سادھ نہ بھلے برے کی بدھ، -
- ۲ -- سرور (فسانہ عجائب - جازالم کا طوطا خریدنا) از بلبل نواسہج ہزار داستان تا ہردم دم سون بھرنے لگا -
- ۳ -- سر سید (تہذیب الاخلاق) حسب ذیل مضامین :-
- (۱) امید کی خوشی (۲) نومی ہمدردی (۳) بھٹ و تکرار -
- ۴ -- آزان (دربار اکبری) تذکرہ راجہ مان سنگھ -
- ۵ -- غالب (عود ہندی) حسب ذیل رقعے --
- (۱) مرزا علاء الدین خاں کے نام بعنوان سدا عالم دہ: ہیں ایک عالم ادراج اور ایک عالم آب و گل -
- (۲) میسر مہندی کے نام بعنوان اے جناب میسر صاحب السلام علیکم حضرت آداب -
- (۳) میسر مہندی کے نام بعنوان مہاں کس حال میں ہو کس خیال میں ہو گل شام کو میسر صاحب روانہ ہوئے -
- (۴) میسر مہندی کے نام بعنوان میسر مہندی جیتے رہو آفریں صد آفریں -
- (۵) میسر مہندی کے نام بعنوان سید صاحب اچھا ڈھکوسلا نکالا ہے -
- (۶) میسر مہندی کے نام بعنوان جان غالب تمہارا خط پہنچا -
- (۷) نواب انوار الدواہ کے نام بعنوان پیر و مرشد ۱۲ بچے تھے میں نکلا لینا ہوا حقہ پی رہا تھا -
- (۸) میسر مہندی کے بھائی سرفراز حسین کے نام بعنوان نور چشم راحت جان میسر سرفراز حسین جیتے رہو -
- (۹) منشی مرگوجاں تفسہ تخلص کے نام بعنوان رکھو غالب مجھے اس تلخ نوائی میں معاف -
- (۱۰) چودھری عبدالغفور کے نام (خط کے آخر کی عربی عبارت مکذرف) بعنوان میرے مشفق چودھری عبدالغفور صاحب اپنے خط اور قصیدہ *

as edited by Daya Narain Nigam and — بادگار غالب —
published by Rai Sahib Ram Dayal Agarwala, Allahabad

۷ — شہابی (مرالعمجم حصہ چہارم باب اول) از ابتدا تا آغاز بحث
تشبیہہ و استعارہ —

Books recommended on the History of Urdu Literature

آراء (آبھیات) زبان اردو کی تاریخ تا بزرگوں کی میراث کو بھی
ساتھ سے کہوئے بیٹھے ہوں —

عبدالحنی (گل رعنا) مقدمہ از صفحہ ۵ تا صفحہ ۲۰ (مع) بحث
نوٹ —

Paper II—Poetry and Rhetorics—

(a) Poetry—

قصائد —

۱ — اکم عدم سے نہ ہو ساتھ نکر روزی کا
۲ — عیب پوشی ہو لباس چرک سے کیا ننگ ہے

۱ — خسروا سنکے تھا مزدہ جشن نوردر
۲ — رہے نشاط اکم کیجئے اسے تحریر

مراثی: —

۱ — جانی ہے کس شکوہ سے دن میں خدا کی فوج
۲ — جب خانمہ بخیر ہوا فوج شاہ کا

۱ — پیدا شاع مہر کی مراض جب ہوئی

مثنوی: —

میر حسن — از — دیا شہ نے تہویب اک خانہ باغ — تا — رہا ساتھ
سب کے طرب ناک وہ —

نسیم — (یادگار نسیم از اصغر — صفحہ ۱۹ — ۳۲) از گل کاجو
ام چمن چمن ہے — تا — کچھ دور نہیں مثال ہے یہہ —

فزیلیات :-

- میو - (۱) دل عشق کا ہمیشہ حریف نہیں تھا
 (۲) سب ہوئے نادم ہوئے تدبیر سمیت
 (۳) گل کی دوا ہوئی جانی دیکھی دہائے ہلال
 (۴) جو جو ظالم کہتے ہیں تم نے سو سو ہم لے اٹھائے ہیں
 (۵) جینے جی کوچہ دلدار سے آیا نہ نیا
 (۶) گل میں اس کی سی جڑ ہو آئی تو آیا نہ کھا
 (۷) کرو توکل کہ عاشقی میں نہ ہوں کر دگے تو کیا کر دگے
 (۸) دل پر خون کی اک لہری سے

- آنکھ - (۱) دہن پر ہیں ان کے گمان کھسے کھسے
 (۲) حوشا وہ دل کہ ہو حس دل میں آرزو تیری
 (۳) کیا کیا نہ رنگ تیری طہکار لچکے
 (۴) یہ آرزو تری تجھے دل کے دوہرد کرتے
 (۵) وحشت آنکھ ہے سنانہ مری رسوائی کا

- عالم - (۱) عرض نیاز عشق کے قابل نہیں دما
 (۲) حسن غمزے کی کشادہ سے چہتا میوے بعد
 (۳) کیوں جل گیا نہ تاب رح ار دیکھ، کو
 (۴) چہراں ہوں دل کو روؤں نہ پیوں جگر کو میں
 (۵) دیوانگی سے دوش زناں ہی نہیں
 (۶) کسی کو دے کے دل کوئی نوا سنج فغان کیوں ہو
 (۷) ہر ایک بات پہ کہتے ہو تم کہ تو کیا ہے

- داغ - (۱) اس بزم میں شریک تو جاہا نہ جائیگا
 (۲) دگر مہرا اگر آجاتا ہے
 (۳) جلوہ دیکھا تری رعنائی کا
 (۴) تم کو کیا ہر کسی سے ملنا تھا
 (۵) اے فلک موزن عتاب ہوں میں

- حسرت - (۱) سرگرم ناز آپ کی شان چننا ہی کیا
 (۲) دعل کی ہمتی ہے ان باتوں سے تدبیریں کہوں
 (۳) نگاہ یار جسے آشناے راز کرے
 (۴) جان کہ پتے دست رداں ہو گئی
 (۵) برکتیں سب ہیں عیاں دولت روحانی کی

نظم جدید :-

اقبال — (۱) گل رنگین — (۲) گورستان شاہی — (۳) داغ — (۴)
کنار راوی •

چکبست — (۱) سیر دھڑلون — (۲) بشن نوائن در — (۳) گوکھلے
درگا سہاے سرور — (۱) حسرت دیدار — (۲) بیڑ بیڑی

(b) *Rhetorics*—

۱ — تشبیہ — استعارہ — کنایہ — مجاز مرسل —

۲ — صنایع — لعظی ، معنوی (کل)

Paper III—Non-detailed study and Composition—

۱ — مشرقی تمدن کا آخری نمونہ — (شرر)

۲ — پریم پنچیسے حصہ اول — (پریم چند)

۳ — مصاہین چکبست — (چکبست)

۴ — ابن الوقت — (نذیر احمد) دہلوی

(c) Bengali

There will be *three papers*, each of three hours' duration. The *first* paper will be set on the prescribed Prose and History of Bengali Literature, the *second* paper on prescribed Poetry, Drama and *Rhetorics* and the *third* on Unseen (which may be set from the recommended supplementary books) and Grammar and Composition.

NOTES—(i) 20 per cent. of the marks of the *first paper* shall be allotted to "History of Bengali Literature."

(ii) 10 per cent. of the marks of the *second paper* shall be allotted to "*Rhetorics*."

(iii) 20 per cent. of the marks of the *third paper* may be allotted to questions from books recommended for *supplementary reading*.

(Prose)

1. *Debi Choudhurani*—Bankim Chandra Chatterji.
2. *Arundhati*, by Nayan Chandra Mukhopadhyay (Indian Press, Allahabad).
3. *Charit Katha*—Ramendra Sundar Trivedi.

History of Bengali Literature

1. *Bangla Sahityer Kronubikas*—Kulidas Roy (N. U. Dhar & Co., Price 4 annas).
2. *Bangla Sahityer Nabhyug*—Shashi Bhushan Das Gupta (Rasachakra Sahitya Sansad, Calcutta, Price Rs.2).

(Poetry)

1. *Sanchayita*, by Dr. Rabindra Nath Tagore, of which the following pieces are prescribed :

- (1) Ahlayar Prati.
- (2) Samudrer Prati.
- (3) Sadhana.
- (4) Bharat Tirtha.
- (5) Shahjahan.
- (6) Barsha-shesh.
- (7) Karna-Kunti Sambad.
- (8) Barsha Mangal.
- (9) All the pieces from *Kanika*.
- (10) *Badhu*.

- (11) Basundhara.
- (12) Brahman.
- (13) Bangamata.
- (14) Brikshabandana.
- (15) Shivaji-Utsab.

2. Meghnadbadh—Kabya—Cantos I—III—Maichael Madhusudan Datta (Edited by Dinanath Sanyal).

Drama

Balidan—Girish Chandra Ghosh.

Grammar, Composition and Rhetorics

Adhunik Bangla Vyakaran—Jagadish Ghose, B.A. (New Presidency Book Depot, 64 College Street, Calcutta), Price Re.1-8.

The following figures of speech at least to be read :

Upama, Rupaka, Utpreksha, Atishayukti, Swabhavukti, Dirs-tanta.

Bhrantiman, Byatirek, Byaj-stuti, Nidarhsana, Arthantar-nyasa.

Recommended for Supplementary Reading :

- (1) Galpa—Suptak—Dr. Rabindra Nath Tagore.
- (2) Prachin Sahitya—Dr. Rabindra Nath Tagore.
- (3) Samasamayaik Kabir Chokhe Rabindra Nath —(Mitra and Ghosh).
- (4) Jaiban-O-Sahitya—Mahendra Chandra Roy.
- (5) Bangabhasha-O-Sahitya—Dr. Dinesh Chandra Sen.
- (6) Bankim Prativa—Ranjan Publishing House.
- (7) Gitigunja—Atul Prasad Sen.
- (8) Prithiviraj (Mahakabya)—Jogindra Nath Bose.

There will be three papers in each of the following languages. Each paper will be of three hours : the first paper will be set on the prescribed Poetry and Drama, the second on the prescribed Prose, and the third on Unseen and Composition. Critical questions will be set in the first and second papers.

(d) Marathi

Text-books prescribed :

Paper I—Poetry—

- (1) *Kavya Tarang*, by B. K. Nerurkar. (Maharashtra Publishing House, Bombay Branch.)
- (2) "Selections from Tukaram," as published in the latest edition of "Navnit" (to be had of Messrs. Parchure Purnik and Co., Madhavbag, Bombay).

Paper II—Prose—

- (1) "Ragini (novel)." Volumes I and II, by Vaman Malhar Joshi (Manoranjak Grantha Prasarak Mandali, Bombay.)
- (2) *Jiwan-Smriti* (being reminiscences of Dr. Rabindra Nath Tagore), published by the Manoranjak Granth Prasarak Mandali, Bombay.

Paper III—Unseen and Composition—

Books recommended for non-detailed general study and composition :

- (1) मराठी वाक्यचार व ह्याणी, by Vidyadhar Vaman Bhide. (Chitra Shala Press, Poona City)
- (2) मराठी ची वजावट in two volumes, by G. G. Majumdar, Teacher, Sangli High School, Sangli.
- (3) वाङ्मयमाला पुष्प १—२ by श्री राम जोगी and ना. भ. पटवर्धन (Raghunath Rajguru, Poona)

(e) Gujarati

Text-books prescribed :

Paper I—Poetry and Drama—

- (1) “ Kavyamadhurya,” selected by H. G. Anjaria.
- (2) “ Jaya-ane-Jayant,” by N. D. Kavi.
- (3) Purvalapa, by Mani Shanker Ratnaji Bhatt.

Paper II—Prose—

- (1) “ Sarasvatichandra,” Part II, by Govardhamam M. Tripathi. (N. M. Tripathi, Bombay.)
- (2) Gadya-Pravesha, Part II, by H. G. Anjaria.

Paper III—Unseen and Composition—

Books recommended for non-detailed general study and composition :

- (1) Kokil, by Ramanlal Vasantlal Desai.
- (2) Saraswati Chandra, Part I, by Govardhanram Madhavram Tripathi.
- (3) Akhand Jyot, by Sopan.

A MODERN EUROPEAN LANGUAGE

There will be three papers of three hours each. The first paper will consist of extracts from the prescribed text-books, together with grammatical questions. The second paper will contain unseen passages for translation from French into English : these passages are not to be taken from the prescribed text-books. The third paper will consist of a passage or passages of English prose to be translated into French.

French

Prescribed Text-books :

1. *La Buche* (Le Crime de Sylvestre Bonnard) Anatole France (Oxford University Press).
2. Balzac, Eugenic Grandet (Oxford University Press).
3. Moliere, *Le Bourgeois Gentilhomme*.
4. French poetry for advanced students, by A. Watson Bain (Macmillan & Co.), of which poems numbered 2, 15, 23, 24, 30, 34, 35, 38, 43, 57, 61, 75, 102, 108, and 116 are prescribed.

Grammar recommended :

French Grammar (Sonnenschein's Parallel Grammar Series) or Heath's Modern French Grammar. (Harrap.)

Books recommended for rapid reading :

La Bastide Rouge (Elie Berthet), *La Rose Blanche* (Louis Enault) and *La Vie de Polichinelle* (Octave Feuillet), all of Siepman's French series (Macmillan & Co.).

Book recommended for French Composition :

Easy steps in French Composition, by Horsley and Bonne (Rivington).

A CLASSICAL LANGUAGE

There will be three papers of three hours each in each of these languages : the first paper will be on Poetry and Drama (Poetry, Drama, and Verse Unseen in the case of Latin only), the second paper on Prose and Unseen, and the third paper on Grammar, Composition and Translation into the classical language. Questions in Grammar relating to the text may be included in each of the first two papers, the number of marks assigned to such questions in each paper being not more than 10 per cent. of the total in the case of Sanskrit only.

(a) Sanskrit

Paper I—Poetry and Drama—

Text-books prescribed :

(a) Kumarasambhava, Canto V.

(b) Uttara-Ramacharitra, Act III as adapted and edited by Pandit Ram Naresh Mishra (Nand Kishore & Bros., Benares). Annas 12.

NOTES—1. Students are expected to explain selected passages in their own Sanskrit.

2. No Prakrit passages shall be set for the examination.

Paper II—Prose and Unseen—

(a) Prose—Harsacharita Sara, by Pt. V. Anantacharya (Ram Narain Lal, Allahabad).

(b) Unseen—

1. Bhagavatgita, Chapters I to III.

2. Rama Banagamanam, selected by Pandit Kailash Nath as in Manohara Kavyamala, pages 1—56 and published separately by Messrs. Moti Lal Banarsi Das, Lahore.

NOTE—Easy passages from the abovementioned books and similar passages from other similar books should be set for translation.

*Paper III— Grammar, Composition and Translation.***Grammar**

Revision of the Grammar course prescribed for the High School Examination of 1944 and

I.—*Sandhis* covered by the following sutras. (It is not necessary to learn the sutras) :—

(a) स्वरसन्धिः—

- (1) षडि पररूपम् ।
- (2) ईदृदेदृद्विवचनं प्रगृह्यम् ।

(b) हलसन्धिः—

- (1) यरोऽनुनामिकेऽनुनासिका वा ।
- (2) तोर्लि ।
- (3) शश्छोऽर्ति

अनुस्वारस्य ययि परस्वरेः ।

- (5) नश्छव्यप्रशान् ।

(c) विसर्ग सन्धिः—

- (1) वा शरि ।
- (2) रो रि ।
- (3) ह्रलेपे पूर्वस्य दोर्घोऽणः ।

II.—*Declension*—

- (a) पुंलिङ्ग—पात, सखि, भूपति, विद्वस्, चन्द्रमस्, श्वन, श्वन ।
- (b) स्त्रीलिङ्ग—लक्ष्मी, स्त्री, श्री, वधु, अप् ।
- (c) नपुंसक—धनुष्, ब्रह्मन् ।
- (d) सर्वनाम—उभ, एतद्, भवत्, यावत् ।

III.—*General definition, with illustration of अव्ययीभाव and द्विगु compounds.*

IV.—*Karakas* covered by the following *section* of Apte's Guide to Sanskrit Composition 11, 23, 24, 25, 30, 31, 33, 36, 39, 42, 43, 44, 51, 60, 63, 67, 72, 87, 89 and 94.

V.—Conjugation, in all लकारः except लेट् of the roots prescribed for the High School Examination and the following :

(1) भ्वादि—थ्रु, पा, घ्रा ।

(2) जुहोत्यादि—घा ।

VI.—Causal conjugation.

VII.—Primary verbal suffixes—

क्त, क्तवतु, शतृ, शतृत्, तुङ्गि, क्त्वा, तया, प्रसारत्, यत्, घा, यत्, तुच्, ल्युट्, क, एबुल् ।

VIII.—Numbers : कति and from एकादश to शत together with the ordinals.

Books recommended :

1. Apte's Guide to Sanskrit Composition.
2. Bhandarkar's Second Book of Sanskrit.
3. Sanskrit, Second Book, by Professor Ram Behari Lal, D. A.-V. College, Cawnpore.
4. Prabandha Prakash, by Dr. Mangal Deva Sastri (Indian Press, Allahabad).
5. A Guide to the study of Sanskrit translation and composition, by Surendranath Sharma (Gurukul, Kangri).

NOTE—Sanskrit must be written in Devanagari character.

(b) Arabic

Paper I—Poetry and Unseen—

Text :

(a) ثابت حسن بن ثابت the following as contained in Dr. Tritton's selections :

- ١ — عفت ذات الا صابع فالجواه
- ٢ — هل رسم دارسة المقام يباب
- ٣ — عفت ديار زيدب الكثيب
- ٤ — صلى الله على الذين تقامعوا
- ٥ — الا والله ماتدري هذيل
- ٦ — وشق له من اسمه كي يجعله
- ٧ — ما نال عيني لا تظام كانما

(b) مجموعة النظم و النثر المحفظ و التسميع للامين السنة الرابعة approved by the Ministry of Education, Egypt (to be had of the "Kitabistan," Allahabad), pages 47 to 77.

Paper II—Prose and Unseen—

Text :

مجموعة من النظم و النثر المحفظ و التسميع للامين السنة الرابعة

Approved by the Ministry of Education, Egypt (to be had of the "Kitabistan." Allahabad), pages 78 to 136.

Unseen :

The following books are recommended for supplementary reading and they indicate the standard of passages to be set as "Unseen" in Papers I and II :

(1) نوادر الحكايات by قاييومي (Qaiyyumi Press, Cawnpore), pages 2 to 146.

(2) Part II (Boirut), 1929, pages 127 to 202, and pages 288 up to the end.

(3) نوات المثنوي, Volume I, first half, omitting the verses

**Paper III—Grammar, Composition and Translation into Arabic--*

Grammar :

Asas-i-'Arabi (اساس عربي), by M. Naim-ur-Rahman (published by the "Kitabistan," Allahabad), omitting pages 1—82, 139—170 and 248—252.

Notes—(1) The exercises contained in the Asas-i-'Arabi are recommended, but not prescribed.

(2) Arabic words must be written in Arabic character.

*NOTE—Alternative questions to the extent of 25 per cent. shall be set in this paper.

(c) Persian.

Paper I—Poetry and Drama—

Text :

(1) Ghazals beginning with the following lines :

- (۱) الا یا ایها الساتی ادرکاسا و ناولها
 (۲) بیا که قصر امل سختت سست بنیادست
 (۳) چو بشنوی سخن اهل دل مگو که خطاست
 (۴) بغال بلبل اگر با منبت سر یاریست
 (۵) صوفی از پرتو می راز نهانی دانست
 (۶) حاصل کار که کون و مکان این همه نیست
 (۷) جان بے جمال جانان میل جهان ندارد
 (۸) سالها دل طلب جام جم از ما می کون

(2) غزلیات خسرو :

- (۱) دلم در عاشقی آذاره شد آذاره تر باد
 (۲) رسید باد صبا تازه کرد جان مراد
 (۳) باز ابر آمد و بر سبزه گل انشانی کرد
 (۴) بت نو رسیده من هوس شکار دارم
 (۵) تنها غم خرد گفتن با یار چه خوب آید
 (۶) خیرم رسید امشب بو یار خواهم . آمد
 (۷) دل که نرگس مستش بنواز بستاند
 (۸) چه بلاست از دو چشمت نظر نیاز کردن

(3) غزلیات سعدی :

- ۱ — چنان بموے تو آشفته ام بموے تو مست
 ۲ — هر که دلارام دید از دلش آرام رفت
 ۳ — آن شکر خند که بر لبش جهانے داد
 ۴ — اے ساربان آهسته ران کارام جانم میروم
 ۵ — شب عاشقان بیدل چه شب دراز باشد
 ۶ — نظر خدایت بینان ز سر هوا نباشد
 ۷ — سر و سیمینا بصحرا میروی

(4) قصائد ظہیر ناریاہی :

- (a) سپیدہ دم چو شدم محترم سراے سرور
 (b) چون بر زمین طلوعه شب گشت آشکار

(5) تصانڈ سعدی :

- ۱ — بامدادان کہ تغارت نکند لیل و نہار
- ۲ — قواںگری نہ بمال است پیش اہل کمال
- ۳ — اے نفس اگر ہدیۂ تصنیف ہنکری

(6) تصانڈ قانوی :—

۱ — بتوبوں قیرۂ ابرے بامدادان ہر شد از دریا

up to

نو توئی اہل یک کشور برسدہ پا برسدہ سو

۲ — نسیم حلد می دزد مگر ز حوئیبارہا

up to

۳ — دوشہ رستہ از زمین بطرف حوئیبارہا

۳ — دوشہ رستہ از زمین بطرف حوئیبارہا

(7) a Persian drama, by Agha Sa'id Nairi, (to be had of the "Kitabistan," Allahabad, at annas 12 per cop.).

(3) تصانڈ غالب

(۱) عید است و نشاط و طرب و زمزمہ عامست

(۲) در حیب فرود روز کہ ابن حق مشامست (up to)

(۳) باز بہ اطراف باغ آتش گل در گرفت

(۴) قا بتراشد قام ہم ز ہما پر گرفت (up to)

(9) اقبال

۱ — تو ما بیچارگان را سازد برگ beginning with در حضور رسالت مآب
omitting from ابن غلام ابن غلام upto کشند افرنگیان
۲ — ہے حرب و ضرب

Paper II—Prose and Unseen—

Text—

1. جدک نامہ نعمت خان عالی

2. بطبع مومدم from the beginning up to سوانح شیخ علی حزین
دیگانہ زیادہ ملایمت نکند

3. کہ نازیبان سلیمان دانند up to حالات ہوشنگ from نامہ خسروان

4. جہانگیرنامہ (Newal Kishore Press, Lucknow), pages 124 to

5. اکبرنامه (Newal Kishore Press, Lucknow), Vol. I, pages 163—204
(The portion of this book, prescribed for the examination, begins with the words حضرت گیتہ ستانی فردوس مکانی ظاہر الدین محمد باہر بادشاہ and ends with the words (إخلاق پسندیدہ داشت)

Unseen :

The following books are recommended for supplementary reading and they indicate the standard of the passages to be set as “unseen” :

1. Waqa’i Alamgir عالمگیر وقائع, compiled by Chaudhri Nabi Ahmad and published by Shihab-ud-din Ahmad, Benares, pages 1 to 123.
2. Adbiyyat-i-Ajam, Part II, ادبیات عدم حصہ دوم by Abid Hasan Faridi (Messrs. Ram Prasad and Bros., Agra).
3. انتخاب تاریخہ فرشتہ (Shanti Press, Allahabad).

*Paper III—Grammar, Composition and Translation into Persian—

Grammar—Candidates are expected to have a thorough knowledge of syntax (نحو) and rhetorics (بیان و بدیع).

The following book is recommended :

محدثون القواعد, Maulvi M. H. Nasiri Chapters I—VII (Mission Press, Allahabad), or مصباح القواعد by Muhiuddin (Anwar Ahmadi Press, Allahabad).

Students who offer Persian are required to have such a knowledge of the etymology of the Arabic language as will enable them to explain all Arabic words and phrases which may occur in the text-books and in the books recommended for rapid reading in Persian.

NOTES—Persian words must be written in Persian character.

*Alternative questions to the extent of 25 per cent. shall be set in this paper.

(d) Latin

Prescribed course :

I.—Text—

- (1) CICERO : Pro Milone (Oxford University Press).
- (2) LIVY : Book XXI (Oxford University Press).
- (3) VIRGIL : Georgics I (Macmillan).
- (4) HORACE : Odes, Book IV (Macmillan).
- (5) SALLUST : Jugurthine War (Macmillan).

II.—Grammar—Gildersleeve's Latin Grammar or Allen's Latin Grammar is recommended.

III.—Latin Prose Composition.

Book recommended :

North and Hillard's Latin Prose Composition (Rivington).

(e) Greek

Prescribed course :

Text—

- (1) Thuoydides, Book IV (Chaps. 1—41) (Macmillan).
- (2) Euripides Alcestis (Oxford University Press).
- (3) Homer Iliad I (Macmillan).

(f) Hebrew

Prescribed course :

I.—Text—SAMUEL : Book I.

PSALMS, I—LX.

II.—Genesis is recommended for rapid reading in connexion with Unseen.

III.—Grammar—Duff's Hebrew Grammar is recommended.

PHYSIOLOGY, HYGIENE AND ELEMENTARY PSYCHOLOGY

There will be two papers of three hours' duration each : the first paper on Physiology and Hygiene, Public Health or Child Welfare and the second paper on Elementary Psychology.

PAPER I, PART 1—PHYSIOLOGY AND HYGIENE

A—The cellular structure of living tissues.

B—An outline study of the skeletal and muscular systems and the conditions for their normal development.

C—Digestion and Nutrition—

- (1) The classes of foodstuffs.
- (2) The organs and processes of digestion.
- (3) The food requirements of the body under various conditions, e.g. occupation, age, climate.
- (4) The special position of milk in nutrition.
- (5) The preparation of food for eating.
- (6) The influence of condiments on appetite and digestion.
- (7) Movements of the alimentary tract.

D—The excretory systems—skin, kidneys and bowels—and their normal functioning.

E—Circulatory system—

- (1) The composition and functions of blood.
- (2) The mechanisms of blood circulation, and the supply of blood to organs according to their requirements.

F—Respiration—

- (1) Larynx, trachea, lungs.
- (2) The purpose of respiration, and its adjustment to the needs of the body.
- (3) Proper breathing habits, and the influence of posture, etc. thereon.
- (4) Vital capacity and its significance.

G—The influence of exercise on development and functional capacity.

H—The nervous system and sense organs—

- (1) The neurons, nerves, spinal cord, and brain.
- (2) The structure of the ear, nose and eye.
- (3) The common defects of vision, and their elementary detection.
- (4) Co-ordination and its disturbance by drugs of addiction.

I—The elementary physiology of the reproductive systems.

J—Hygiene—

- (1) Hygiene of the person, e.g. skin, teeth, eyes, etc.
- (2) Hygiene of the house, e.g. ventilation and cleanliness.
- (3) Disposal of refuse and waste water. Drainage. Latrines.
- (4) Water-supply. Food supply.
- (5) Prevention and arrest of infectious diseases.

PAPER I, PART 2 [ALTERNATIVE (a)]

A—Responsibility of the individual.

B—The disposal of excrement and refuse.

C—The origins, carriage and storage of water and food supplies.

D—The origins and modes of transmission of malaria, tuberculosis, smallpox, cholera, plague, measles and typhoid and the methods for combating each.

E—Slums and their dangers.

F—Garden. Playgrounds. Open spaces.

G—Modern movements for the education of society in the laws of health.

or

[ALTERNATIVE (b) CHILD WELFARE]

- (1) The care of the expectant mother.
- (2) Preparation for the birth event.
- (3) Care of the new-born child.
- (4) Care of the infant—
 - (a) regular weighing as a guide to progress,
 - (b) weaning,
 - (c) teething,

- (d) clothing,
- (e) formation of regular excretory habits,
- (f) treatments of minor digestive ailments.

(5) Problems of infant mortality.

(6) Modern movements for child welfare.

(7) The study of children's development from the point of view of physique, intelligence and character, based as far as possible on the observation of individuals and classes.

PAPER II—ELEMENTARY PSYCHOLOGY

(The same course as is prescribed for Paper I, Elementary Psychology, on page 169.)

Books recommended :

Paper I

(1) Elementary Hygiene for India, by Sir Charles H. Bedford (S. K. Lahiri & Co., Calcutta).

(2) Physiology, Public Health and Psychology, by Charles Banks (Macmillan & Co.).

(3) Physiology and Hygiene, by Sir Ronald Ross (K. and J. Cooper, Bombay).

(4) The Psychology of Childhood, by Norsworthy and Whitely (Macmillan & Co.). [Specially for Part 2, Alternative (b), Child Welfare].

Paper II

(The same books as are recommended under Paper I, Elementary Psychology, on page 169).

**INDIAN MUSIC (FOR GIRLS ONLY AND AS AN ADDITIONAL
OPTIONAL NON-EXAMINATION SUBJECT FOR BOYS)**

Vocal Music

There will be one paper in Theory of three hours' duration and a practical examination.

Marks are allotted as follows :

	Marks
Theory paper	40
Practical Examination	60

Pass marks in the total of Theory and Practical shall be 33 per cent. Every candidate must obtain pass marks in Theory separately. The Pass marks for the Theory paper shall be 25 per cent., i.e. 10.

The following syllabus is recommended in Vocal and Instrumental Music. *A candidate is required to take either vocal or Instrumental Music.*

Vocal Music

Theory : Saugita, Nada, Svāra, Suddha and Vikrit, Saptaka, Thāta, Rāga, Asrāya-rāga, Vakra-svāra, Alankāra, Pakāra, Matrā, Lāya, Vilāmbitā, Madhya and Drutā, Tālā, Purva-rāga, Uttara-rāga, Sandhiprakāsa-Rāga, Guna-dosa, of the musician, Grāha, Amsā, Nyāsa, Vādī, Samvādī, Anuvādī, Vivādī, Alapā, Tānā, Boltānā, Dhruvapādā, Khyālā, Tappā, Thumrī, Dhamārā, Hori, Tarrānā, Chaturāngā, Gātā, Jhālā and Ghasitā, Jorā, Parānā, Zamāzāmā.

A short history of Hindustani music : Reading and writing of music in simple notation.

Practice : (a) In addition to the Ragas prescribed for the High School and Diploma Examinations of 1942 candidates must learn at least one Sargam, one Lakshan-gita, or a few Alapas and two Dhruvapadas or two Khyalas (Barā and Chhota) of each of the following Ragas :

Hamira, Kedara, Vihaga, Tilaka-Kamoda, Purvi, Marwa, Todi, Malakosa, Durga, Kanara, Jaya jayvanti, Bahara, Multani and Vasanta.

(b) In addition to the Talas prescribed for the High School and Diploma Examinations of 1944 candidates must possess a knowledge of the following Talas :

Ara-chautala, Sulphaka, Dhamara, Rupaka, Tilavada, and Jhumara

Instrumental Music

Theory—Same as for Vocal Music.

Practical—One of the following instruments is prescribed for the practical test :

1. Vina.
2. Sarangi.
3. Esaraja.
4. Violin.
5. Sitara.
6. Sarode.
7. Pakhawaja.
8. Tabla.

Candidates must possess a general knowledge of the Ragas prescribed for vocal music, but special attention must be paid to the Ragas mentioned below. Candidates must know the system of tuning of the instrument they offer and how to effect simple repairs, the names of the types of musical instruments in India, and easy sargams, songs, alapa and gat and at least five toras in the following Ragas :

1. Bhimpalasri.
2. Bhupali.
3. Bhairava.
4. Bhairavi.
5. Kafi.
6. Behaga.
7. Desa.
8. Tilaka Kamoda.
9. Vagisvari.
10. Asavari.
11. Pilu.
12. Kanara.
13. Todi.
14. Yamana.

In Tabla or Pakhawaja candidates must possess a knowledge of the Thekas, easy Paranās and Relas of the following Talas :

1. Tin-tal or Tritala.
2. Keharava.

3. Ekatala.
4. Jhaptala.
5. Chautala.
6. Dadara.
7. Dhamara.
8. Dipachandi.
9. Tivra.
10. Ara-Chautala.
11. Sulphaka.
12. Rupaka.

PHYSICAL TRAINING (FOR GIRLS)

Physical Training should be included as a non-examination subject for girls in recognized Intermediate Colleges.

N.B.—Organized games and dancing should be introduced and encouraged wherever possible, in recognized Intermediate Colleges for girls.

EXAMINATION FOR CERTIFICATE IN MILITARY SCIENCE.

The examination shall consist of two parts—(a) written and (b) practical and oral. The written examination shall consist of one paper of three hours. The practical and oral test shall be based on the work indicated in the syllabus. The examination should carry 200 marks, 100 for theory and 100 for the practical. The minimum pass marks shall be 33 per cent. Candidates will be required to pass separately in the theory and the practical part of the examination.

*Courses of study :***Theory**

- (1) Organization of Land Forces.
- (2) Characteristic of weapons and fighting troops.
- (3) Elementary map reading.
- (4) Military History as illustrated by Mesopotamian Campaign (1914–18).
- (5) Elementary Military tactics. ●

[NOTE—(1), (2) and (3) are designed to give the student sufficient knowledge and adequate background to understand.]

Practice

- (1) Section and Platoon Drill without arms.
- (2) Field sketching and map reading. Use of Compass.

This course can easily be covered in 60 hours each year.

Reference Books :

(1) My Campaign in Mesopotamia, by Major-General Sir Charles V. F. Townsend, K.C.B., D.S.O., Thornton Butterworth, Ltd., 62 St. Martin's Lane, London, W. C. (2), Part III Ctesiphon, Chapters VIII—XI.

(2) Tactics, by Captain J. W. Pendlebury, M.C. (Indian Press, Allahabad).

(3) Manual of Map Reading, Photo reading and Field Sketching, 1929 (War Office), Chapters I, II and IV—VIII.

(4) Infantry Training, Volume I (1932)—

Chapter I.

Chapter IV, Sections 20—25.

Chapter VI.

(5) Section Leading 1928 (War Office)

INTERMEDIATE EXAMINATION IN COMMERCE

The following are the subjects of examination :

Compulsory subjects—

1. English.
2. Book-keeping and Accountancy.
3. Business Methods and Correspondence.
4. Elementary Economics and Commercial Geography.
5. One of the following :
 - (1) Steno-typing (shorthand and typewriting).
 - (2) Elements of Banking.
 - (3) Elements of Industrial Organization.
 - (4) Mathematics.

The following papers will be set :

1. *English*—Two papers of three hours each.
2. *Book-keeping and Accountancy*—Two papers of three hours each.
3. *Business Methods and Correspondence*—Two papers of three hours each : one paper on Business Methods and one paper on Correspondence, Précis-writing, etc.
4. *Elementary Economics and Commercial Geography*—Two papers of three hours each : one paper on Elementary Economics and one paper on Commercial Geography.
5. *Steno-typing* . . . { *Shorthand*—One paper of three hours.
 { *Typewriting*—One paper of one hour.
6. *Elements of Banking*—Two papers of three hours each.
7. *Elements of Industrial Organization*—Two papers of three hours each.
8. *Mathematics*—Two papers of three hours each.

No.	Subject	Paper	Time (hours)	Marks for each paper	Total marks for each subject	Minimum pass marks
COMPULSORY						
1	English ..	First paper (Prose)	3	50	} 100	33
		Second paper (Composition and translation).	3	50		
2	Book-keeping and Accountancy.	First paper ..	3	50	} 100	33
		Second paper ..	3	50		
3	Elementary Economics and Commercial Geography.	First paper (Economics).	3	50	} 100	33
		Second paper (Geography).	3	50		
4	Business Methods and Correspondence.	First paper (Business Methods).	3	50	} 100	33
		Second paper (Correspondence, Précis-writing, etc.).	3	50		
OPTIONAL						
1	Steno-typing ..	First paper (Shorthand).	*3	50	} 100	33
		Second paper (Typewriting).	1	50		
2	Elements of Banking.	First paper ..	3	50	} 100	33
		Second paper ..	3	50		
3	Elements of Industrial Organization.	First paper ..	3	50	} 100	33
		Second paper ..	3	50		
4	Mathematics ..	First paper ..	3	50	} 100	33
		Second paper ..	3	50		

* Excluding five minutes' interval between the dictation of the two sections in Shorthand.

The syllabus in each subject is as follows :

English

(The same course as is prescribed for the Intermediate Examination of 1944, excluding Poetry portion.)

Book-keeping and Accountancy

Paper I.—Principles of Double Entry Book-keeping and their application. Books of original entry and the ledger, including tabular forms. Trading and profit and loss accounts and balance-sheet with apportionments and adjustments. Classification of assets and liabilities. Treatment of cheque, bills of exchange, hundies and pro-note.

Consignment and joint venture accounts.

Self-balancing ledgers.

Partnership accounts.

Account Current and average due date.

Paper II.—Company accounts (excluding re-construction and amalgamation).

Depreciation. Reserve and Sinking Funds.

Capital and Revenue, Receipts and payments account and income and expenditure account. Investment Accounts.

Loose leaf and card system of book-keeping.

Single entry accounts.

Elementary knowledge of the Indian system of accounts. (This does not imply a knowledge of *Muria*, *Mahajani*, or any other script.)

Books recommended :

1. Advanced Accounts, by J. R. Batliboi (S. Govind & Co., Bombay).
2. Advanced Accounts, by R. N. Carter (Pitman & Sons).
3. Book-keeping and Accountancy, by L. C. Cropper.
4. Book-keeping and Accountancy, Parts I and II, by M. L. Agarwala (Ram Charan Lal Agarwala & Sons, Lucknow).

Business Methods.

Paper I.—(*Business Methods.*)

Establishment of a business. General routine of a business house. Filing systems. Duplicating and other labour-saving appliances. Methods of communication. Postal information.

Home Trade.

Bank and cheque. Bills of exchange and Promissory notes. Hundies. Types of business houses : sole trader, partnership and joint stock company. Import and export of goods. Elements of life, fire and marine insurance.

Principal commercial terms and abbreviations. Preparation of chief commercial documents.

Books recommended :

1. Modern Business Training, by John K. Grebby (MacDonald & Evans, London).
2. Commercial Practice, by Roop Ram Gupta and K. L. Govil, Parts I and II (Messrs. Gautama Bros. & Co., Cawnpore).

3. Modern Business Practice, by Balwan Singh (Shew Prasad and Sons, Cawnpore). Rs. 2-8

Correspondence.

Paper II.—(Correspondence.)

Commercial and official correspondence.

Re-writing in plain language of passages from market reports (financial and commodity markets) with explanation of selected terms and phrases occurring in the passages.

Précis-writing.

Books recommended (not prescribed) :

(1) Modern Commercial Correspondence, by John K. Grebby (MacDonald & Evans, London).

(2) Précis-writing, by K. L. Govil (Gautama Bros. & Co., Cawnpore).

(3) Market Reports, by Govil and Gupta (Ram Prasad & Bros., Agra).

Elementary Economics.

(The treatment of the subject should be very elementary and, as far as possible, it should be illustrated by reference to Indian conditions.)

The subject-matter and scope of Economics, fundamental notions and simple definitions. Relation between wants, efforts and satisfaction.

Production.—Factors of production : Land, Labour, Capital and Organization.

Nature and Limitations of land ; Division of labour and other factors of efficiency of labour ; Organization of capital.

Laws of increasing, diminishing and constant returns.

Wants.—Diminishing utility. Value—its determination. Balancing of supply and demand.

The Machinery of exchange. Money and banking ; both to be illustrated from Indian examples (including the *sahukari* system in the villages and the *sarafi* system in cities). Convertibility of paper money in India Cheques and Hundies (Foreign exchanges are excluded).

Distribution.—Rent—interest—wages—profits (with particular reference to Indian conditions).

Books recommended (but not prescribed as text-books) :

1. Introduction to Economics for Indian Students, by W. H. Moreland (Macmillan & Co., St. Martin's Street, London).
2. The Economics of Everyday Life, by Sir T. H. Penson (Cambridge University Press).
3. First Principles of Economics, by S. L. Agrawal and R. N. Gupta (Gautam Bros., Cawnpore).

Commercial Geography.*(a) Elementary study of the principles of Commercial Geography :*

- (i) Physical features ; Climate ; Natural Vegetation ; soils.
- (ii) Primary Industries ; Fisheries ; Forestry ; Agriculture ; Mining.
- (iii) Secondary Industries : Iron and Steel ; and Textiles
- (iv) Trade Routes and Trade Centres ; Ports.

(b) A detailed study of the Commercial Geography of India on the following lines :

- (i) Agricultural Resources (soil, climate, irrigation, crop production and commerce).
- (ii) Forest Resources and their exploitation.
- (iii) Mining Resources and their exploitation.
- (iv) Water Power Resources and their exploitation.
- (v) Important Manufacturing Industries and their localization.
- (vi) Cottage Industries.
- (vii) Means of communication ; Ports.
- (viii) Nature and Direction of India's Foreign Trade.

Books recommended :

- (1) Rudmose Brown's "Principles of Economic Geography."
- (2) Howarth's "A Short Commercial Geography."
- (3) Economic and Commercial Geography, by R. N. Dubey.

Typewriting.

The syllabus will be the same as in Commerce for the High School Examination of 1944, but of a more advanced character—the speed to be 30 words per minute.

There shall be no paper on the theory of typewriting.

The maximum marks and the time allotted to the papers in this subject are as follows :

	<i>Marks.</i>	<i>Time allowed</i>
Type-copying ... { (a) Passage and letter..	35	} One hour.
{ (b) Tabular statement..	15	
Total ..	50	

Books recommended :

1. Pitman's or Remington's Typewriting Manual.
2. A Typewriting Manual for Indian Students, by E. M. Moffatt and V. A. Kshirsagar (Methodist Publishing House, Lucknow).
3. The New Manual of Typewriting, by Y. D. Keshkar and Jagdish Saran (G. R. Bhargava & Sons, Chandausi).
4. Modern Theory and Practice of Typewriting, Parts I and II, by S. R. Gupta and K. L. Agarwala (Gupta Bros. & Co., Khurja).

Shorthand.

1. Writing in shorthand from a passage dictated at the rate of 80 words a minute, for a period of ten minutes.
2. Writing in shorthand from a business letter of general commercial phraseology dictated at the rate of 80 words a minute, for a period of five minutes.
3. Transcription of both the above.

Book recommended :

Pitman's Instructor, by Pitman & Sons, London.

Elements of Banking.

Paper I.—(Money, Currency and Exchange.)

Fundamental terms of an elementary character.

Money—its nature and functions—qualities of a money material, meaning of monetary standards : Gold standard ; Bimetallism, Gold Exchange Standard, and Gold Bullion Standard.

Gresham's Law, Determination of value of money.

Paper Money—its kinds, advantages and disadvantages.

Foreign Exchange—Meaning of elementary terms, factors influencing rate of exchange.

Indian Currency and Exchange.

Paper II.—(Banking.)

The meaning of simple banking terms.

Banks—their functions—investment of banking funds—Balance Sheet of a Bank—interpretation of the terms—development of deposit Banking, Banking crisis.

Indian Banking : an elementary knowledge of Joint Stock Banks, Imperial Bank, Exchange Banks, Co-operative Credit Banks—Indigenous Banking—Postal Savings Banks—the functions of a Central Bank—the Reserve Bank of India.

Indian Money Market—its constituents—lack of discounting facilities—causes of wide fluctuations of rate for money—its remedies.

Principal defects of Banking in India.

Books recommended :

1. Elements of Banking, by Ramchandra Rao (Calcutta University Press).
2. Banking and Currency, by Sykes.
3. Banking and Currency, by Weston.
4. The Indian Money Market, by K. K. Sharma (The Bangalor Printing and Publishing Co., Bangalore).
5. Currency and Commerce, by K. K. Sharma (The Bangalor Printing and Publishing Co., Bangalore).

Elements of Industrial Organization

Paper I.—General :

1. Meaning and evolution of organization ; Handicraft system ; the Domestic system ; the Factory system ; Industrial Revolution. (The treatment should be very elementary and mainly descriptive.)
2. The introduction of machinery in business ; its influence upon labour and production.
3. Marketing ; Wholesaler, his services to the manufacturer and retailer ; Departmental stores and Multiple shops.
4. Organization of Credit Co-operation ; Co-operation in the United Provinces.
5. Methods of wage-payment ; Efficiency of Labour, as influenced by wages ; hours and conditions of employment.

4. Organization and functions of Trade Unions ; Employers' organizations in relation to labour ; Relation of employers and employees.

Books recommended :

1. Social and Industrial History, by Edward Cressy.
2. Campbell—Wholesale and Retail Trade (Relevant Portions).

Paper II.—India :

1. Indian village organization ; Self-sufficiency of the village ; Changes in the village organization.

2. Famines ; Modern changes in their character ; measures adopted by Government to cope with them ; the Famine Relief Fund

3. Difficulties of Indian agriculture and remedies.

4. Agrarian indebtedness, its causes and remedies.

5. Co-operation : history up to the present day, various forms, main difficulties and remedies, co-operation in United Provinces Land Mortgage Banks.

6. A study of the following industries :

Cotton, sugar, paper and match—their localization and causes of localization

7. Main cottage industries in the United Provinces ; their present position ; State aid ; difficulties and lines of improvement.

Books recommended :

(1) Reports of the Central Banking Committee and the United Provinces Banking Enquiry Committee (for Cottage Industries, Co-operation and Land Mortgage Banks)

(2) Jathar and Beri : Indian Economics, Vols. I and II (only relevant portions) (Oxford University Press).

(3) Report of the United Provinces Industries Re-organization Committee, 1934.

Mathematics.

Paper I (a).—Commercial Arithmetic, Proportion, Percentages, Stocks and Shares, Present Worth and Discount, Exchange Rates, Partnership, Profit and Loss, Commission Brokerage, Premium, Simple and Compound Interest (the use of Logarithms will be permitted when necessary).

(b) *Algebra.*—The Theory, Quadratic Equations, Arithmetical, Geometrical and Harmonic Progression, Permutations and Combinations, Theory of Indices and Logarithms, Use of binomial and exponential theorems.

(c) *Trigonometry.*—Measurements of angles, trigonometrical ratios, identities and trigonometrical equations, practical applications of Logarithms; Solution of Triangles, properties of triangles.

Paper II (a) (1).—Pure Geometry as given in Parts V and VI of Hall and Stevens' Geometry.

(2) *Analytical Geometry.*—Straight Lines Circles, Elementary Properties of conics.

(b) Elements of differential Calculus

Book recommended :

Commercial Mathematics (Sir Isaac Pitman & Sons).

INTERMEDIATE EXAMINATION IN AGRICULTURE.

Note—Alternative questions will be set in all question papers for the Intermediate Examination in Agriculture.

[*N.B.*—Preference for admission to this course will be given to candidates who have studied Chemistry and Physics in the examination qualifying for admission.]

The following are the subjects of examination :

Group 1.

		<i>Maximum marks.</i>	<i>Time allowed.</i>
PAPER I.—Chemistry	25	Three hours.	
PAPER II.—Physics	25	Ditto.	
Practical Chemistry	25	Ditto.	
Practical Physics	25	Ditto.	
Total	100		

Group 2.

PAPER I.—Botany	25	Three hours.
PAPER II.—Zoology	25	Ditto.
Practical Botany	25	Ditto.
Practical Zoology	25	Ditto.
Total	100	

Group 3.

I. ELEMENTS OF SOIL SCIENCE.

PAPER I.—Soil Geology, physical properties of soil, soil classes and climatology	30	Three hours.
PAPER II.—Tillage, plant food and general principles of manuring, principles of Irrigation and Drainage	30	Ditto.

II. PRACTICAL FARMING.

Practical 1. Crop culture, and vegetable gardening.	30	Three hours.
Practical 2. Farm Machinery, ploughing and other tillage operations	30	Ditto.
Practical 3. Animal Husbandry and Veterinary Science	30	Ditto.
Total	150	

[*N.B.*—In groups 1, 2 and 3 candidates shall be required to secure at least 25 per cent. of the marks in each paper and practical separately as well as to pass in the aggregate of the papers and practicals of each group. Six marks have been fixed as the minimum pass marks in a paper or practical of 25 marks and eight marks in a paper or practical of 30 marks.]

Group 4.

ENGLISH.

	<i>Maximum marks.</i>	<i>Time allowed.</i>
PAPER I.—Prose text-books, books recommended for general study, Unseens and Grammar.	25	Three hours.
PAPER II.—Translation and Composition	25	Ditto.
Total	50	

Group 5.

ECONOMICS.

PAPER I.—(i) Introduction, (ii) Production, (iii) Exchange and (iv) Consumption	25	Three hours.
PAPER II.—(i) Difference in the cost of production and distribution, (ii) Organization and Management, and (iii) Taxation	25	Ditto.
Total	50	

or

MATHEMATICS.

PAPER I.—(i) Algebra, (ii) Geometry and Mensuration, and (iii) Trigonometry	25	Three hours.
PAPER II.—Graphs and Integration	25	Ditto.
Total	50	

(N.B.—Candidates are required to pass in the aggregate of the two papers in groups 4 and 5 each.)

The syllabus in each subject is as follows :

GROUP I.

I.—CHEMISTRY.

A.—Inorganic.

Common properties of matter.

Physical and chemical changes ; elements ; mixtures and compounds. Atoms ; molecules, symbols ; formulae ; equation and simple chemical calculations.

The fundamental principles of Chemistry :—Law of chemical combination by weight and by volume. Atomic theory ; atomic, molecular and equivalent weights. Valency. Avogadro's hypothesis and relation of gas density to molecular weights. Charles' and Boyle's Laws. Elementary ideas as to the nature of dissociation and of the Ionic theory.

The outline of the periodic law.

The following elements and their compounds :

Hydrogen and Oxygen—their preparation and properties. Oxidation and reduction. Oxides, acids, bases and salts.

Water :—Electrolysis ; synthesis ; solution ; crystallization ; efflorescence and deliquescence ; pure and natural waters ; temporary and permanent hardness ; methods of softening water.

Nitrogen ; ammonia ; oxides of nitrogen ; nitric acid, nitrite and the nitrates of sodium and potassium.

Chlorine, bromine, iodine, hydrochloric acid, chlorides, bromides and iodides.

Carbon ; forms of carbon ; carbon dioxide and the carbonates.

Sulphur ; sulphur dioxide ; sulphuric acid and the sulphates ; sulphuretted hydrogen and the sulphides.

Phosphorous ; phosphorous pentoxide ; phosphoric acid and the phosphates.

Arsenic and arsenious oxide. Lead and calcium arsenates

Silicon, silica and the silicates.

Mercury and Silver—their oxides, chlorides and nitrates

Copper—its sulphate, nitrate and oxides.

Lead—its oxides, chloride and sulphate.

Iron—its oxides, sulphate, chloride and phosphate ; steel, cast iron and wrought iron.

Aluminium—its oxides, sulphate and chloride.

Zinc—its oxide, chloride and nitrate.

Manganese—its oxides, chloride, sulphate and potassium permanganate.

Calcium—its oxide, hydroxide, chloride nitrate, sulphate, carbonate and phosphate.

Barium—its oxides, carbonate, chloride, and sulphate

Magnesium—its oxide, chloride, sulphate, carbonate

Sodium, Potassium and Ammonium—their hydroxides, chlorides, nitrates, sulphates, carbonates and phosphates.

B.—Organic.

General composition ; physical properties and general classification of carbon compounds.

Hydrocarbons, saturated and unsaturated—methane, ethane, ethylene and acetylene.

Alcohols ; methyl and ethyl alcohols ; glycerine.

Aldehydes and ketones ; formaldehyde, acetaldehyde, acetone.

Ethers :—Ethyl ethers.

Acids ; formic, acetic, butyric, oxalic, lactic, citric, and tartaric.

Fats, oils and soaps.

Carbohydrates : grape sugar, fruit sugar, cane sugar, starch and cellulose.

Proteins : Albumin.

Practical Work in Chemistry.

Differentiation between chemical compounds and mechanical mixtures.

Solution ; suspension ; sedimentation ; decantation ; filtration ; precipitation ; crystallisation and distillation.

Preparation of hydrogen, oxygen, nitrogen, nitrous oxide, nitric oxide, nitric acid, ammonia, chlorine, hydrochloric acid, sulphur dioxide, hydrogen sulphide and carbon dioxide.

Examination of hard water and methods of softening.

Preparation of the following in their pure form :

Sodium chloride, potassium or ammonium sulphate, calcium carbonate and ferric oxide.

Volumetric estimation of sulphuric acid, hydrochloric acid, nitric acid, oxalic acid, sodium carbonate, sodium bicarbonate, sodium hydroxide, potassium carbonate, potassium bicarbonate, potassium hydroxide.

Volumetric estimation of carbonates and hydroxides in mixtures of the two.

Preparation and standardization of standard acid or alkaline solutions, using appropriate given standard solutions as reference.

Qualitative reactions of the following :

Chlorides, Bromides, iodides, nitrates, sulphates and sulphides, carbonates, phosphates : arsenic, silver, mercury, copper, lead, iron, aluminium, zinc, manganese, calcium, barium, magnesium, sodium potassium and ammonium.

Qualitative analysis of single salts containing one acid and one base.

Preparation of methane.

Examination of the following organic compounds :

Ethyl alcohol, glycerine, oxalic acid, citric acid, grape sugar, fruit sugar, cane sugar and starch.

Study of the physical and chemical properties of vegetable and mineral oils. Saponification.

Qualitative reactions of proteins.

The following books are suggested for reference :

1. Everyday Chemistry, by Alfred Vivian (American Book Co., New York). Price about Rs.5.

2. A Foundation Course in Chemistry for Students of Agriculture and Technology, by J. W. Dodgson and J. A. Murray (Longmans, Green & Co., Calcutta). Price about Rs.3.

3. Introduction to the Study of Inorganic Chemistry, by W. A. Miller (Longmans, Green & Co., Calcutta). Price about Rs.4.

4. Organic Chemistry, by Perkin and Kipping (W. R. Chambers, Ltd., London). Price about Rs.7

5. Elementary Agricultural Chemistry, by H. Ingle (Charles Griffin & Co., Ltd., London). Price about Rs.4.

6. Inorganic Chemistry, by F. J. Holmyard (Edward Arnold & Co., Ltd., London).

II.—PHYSICS.

Units and measurements ; Metric system ; Length ; Area ; Volume ; Mass ; Time. The Vernier and the micrometer scales. The Balance.

Velocity, acceleration and momentum. Rectilinear motion. Composition and resolution of velocities, the parallelogram law.

Force and motion ; inertia. Newton's laws of motion. Measure of a force. Composition and resolution of forces. Gravity and laws of falling bodies ; mass and weight ; centre of gravity. Centripetal and centrifugal forces defined.

Equilibrium of forces ; triangle of forces ; Simple illustrations of friction and its laws. Stable and unstable equilibrium and conditions of equilibrium as in levers, pulleys, inclined plane, ploughs.

Pressure of liquids at rest, variation with depth. Transmission of liquid pressure ; Hydraulic press ; Principle of Archimedes ; Laws of hydrometers. Specific gravity.

The atmospheric pressure. Boyle's Law. Force and suction pumps. Syphon.

Work ; energy ; power : efficiency of machines : definitions and simple illustrations.

Matter and energy. Properties of matter. Density, surface tension ; capillarity ; viscosity ; rigidity and elasticity. Molecular structure of matter. Different forms of energy.

Heat energy :—Source ; modes of transference ; effects of heat on matter ; thermometry ; specific heats ; evaporation, radiation and boiling ; vapour pressure ; condensation and frost ; latent heats ; hygrometry and dew-point ; mechanical equivalent of heat, elementary notion of heat engines.

Radiant energy :—Source of light ; mode of propagation ; light waves ; shadows ; illumination ; reflection ; refraction ; absorption and dispersion of light ; magnification of images by lenses ; telescope ; microscope.

Magnetic energy :—Magnets ; magnetisation ; compass, magnetic fields.

Electric energy :—Electrification by friction ; insulators ; conductors ; electroscope ; electrophorus. Electricity generated by chemical action. Magnetic effect of current, principles of the dynamo. Electro magnets ; Resistance ; Ohm's law, units of measurement, transformation of electric energy into heat, light and power ; practical acquaintance with galvanometers, voltmeters, ammeters.

Practical Work in Physics.

Accurate determination of length, area, mass, volume and density .
Use of callipers, screw-gauge, balance, and squared paper.

Determination of acceleration due to gravity with a simple pendulum.

Verification of the law of parallelogram of forces.

Verification of the principle of the lever.

Determination of centre of gravity of plane laminas.

Determination of co-efficient of friction.

Determination of efficiency of a system of pulleys.

Determination of specific gravities of liquids.

Verification of Boyle's Law and practice in barometer reading.

Use of the density bottle : determination of true and apparent densities and pore space of soils.

Practice in reading various thermometers.

Determination of humidity and dew-point.

Determination of boiling point.

Determination of specific heat by method of mixture.

Determination of specific heat of soil (method of cooling).

Determination of latent heats of fusion.

Reflection of light : use of plane and concave mirrors.

Refraction of light : determination of refractive index.

Determination of focal length of a converging lens.

Practice in use of a telescope.

Magnetisation of needles and determination of their poles.

Charting of lines of force due to a magnet in different positions.

Use of simple electroscopes (Gold leaf and Pith ball).

Construction of a simple cell and use of the simple galvanometer.

To connect lamps in series and in parallel to a source of current.

Determination of Electric resistance by substitution method.

The following books are suggested for reference :

1. A High School Course in Physics, by F. R. Gorton (D. Appleton & Co., New York). Price about Rs. 5.

2. Everyday Physics, by H. E. Hadley (Macmillan & Co., Ltd., London).

3. A Manual of Physics for High Schools, by R. K. De (Book Co., Ltd., College Square, Calcutta). Rs.4-8.

4. A Laboratory Course in Practical Physics, by R. K. Sharma (Ewing Christian College, Allahabad). Rs.2-8.

GROUP II.

I. — Botany.

Study of plants in general.

External morphology of the vegetative plant organs : stem, root and leaf, their modifications and significance.

Internal morphology—

- (a) Plant cell, cell contents, cell division (mitotic).
- (b) Stem, root and leaf.

Reproduction—

(1) Vegetative reproduction—

- (a) Layering : earth and air ; cuttings.
- (b) Grafting and budding.

(2) Sexual reproduction—

- (a) The flower : structure and functions.
- (b) Pollination.
- (c) The seed : development, structure, dissemination.
- (d) The fruit : development, types, functions.
- (e) Germination.

Physiology : elementary study of the following :

- (a) Chemical composition of plants.
- (b) Water in plants ; intake of water and inorganic salts.
- (c) Carbon-assimilation.
- (d) Transportation ; food storage.
- (e) Transpiration.
- (f) Respiration.
- (g) Growth.

An outline of the classification of the vegetable kingdom to illustrate grades of structure, methods of reproduction, and alternation of generation as in Bacteria, Spirogyra, mucor, moss, fern, cycas, and angioperm.

Elementary study of evolution. "Mendelism."

Study of botanical characters of (Field and garden crop plants should be used as far as possible)—Cruciferae, Leguminosae, Umbelliferae, Rosaceae, Cucurbitaceae, Solanaceae, Compositae, Liliaceae

Books recommended :

1. Lawson and Sahni .. Text-book of Botany (Indian edition)
(London University Tutorial Press ;
Agent : Oxford University Press).
2. Percival .. Agricultural Botany (Duckworth).
3. Rangachari .. Elementary Botany for Indian Schools
(Government Press, Madras).
4. Gager .. Fundamentals of Botany (Blakiston).
5. Transeau .. General Botany (World Book Com-
pany).
6. Farmer and Chowdhry Practical Introduction to the Study
of Botany (Longmans, Green &
Co., Ltd.)

II.—Zoology.

1. *Introduction :*

(1) The differences between living and non-living matter. The general properties of protoplasm : structure of the animal cell. Cell-division.

(2) Fundamental functions of living organisms as illustrated by *Amoeba* and *Paramecium* as examples of Protozoa.

(3) Combination of cells to form tissues. Cell-differentiation and division of labour in the animal body as exemplified by *Hydra*. Structure, habits and reproduction of *Hydra*.

2. The study of external characters, habits and life history of the following types :

(a) Invertebrata :

Tapeworm. Earthworm. Cockroach. Silk-worm moth or butterfly. Fresh water mussel or pond-snail.

(b) Vertebrata :

Fish. Frog. Pigeon (any bird may be substituted). Squirrel.

3. The study of internal organization of the following types :
Earthworm. Cockroach. Frog. Pigeon. Squirrel.

4. Osteology :

(a) Comparison of the main parts of axial and appendicular skeleton in Frog, Pigeon (any bird may be substituted) and Rabbit (details excluded).

(b) Structure, arrangement and types of dentition in Dog and Horse.

5. An elementary knowledge of—

(a) Histology of Epithelial tissues, stomach ; intestine ; lungs ; liver ; kidney (Frog and mammal) ; artery and vein ; blood ; ovary and testis ; eye (mammal) ; and tooth (mammal).

(b) Physiology of Digestive, Circulatory, Respiratory, Excretory and reproductive systems of Frog and Mammal.

(c) Phenomena of sexual and asexual reproduction.

6. An elementary knowledge of animal classification with special reference to the broad diagnostic characters of the groups of animals in part a. 3 of this course.

Text-books suggested :

1. Parker and Bhatia : Text-book of Zoology for Indian Students.
2. Parker and Bhatia : Elementary Course of Practical Zoology (Macmillan).
3. Marshall : Frog (Macmillan).
4. Holmes : Biology of the Frog (Macmillan)
5. Bahl : Pheretima (Methodist Publishing House, Lucknow)
6. Huxley : Elementary Physiology.
7. Marshall and Hurst : Practical Zoology (Murray).
8. Marshall and Halnan : Physiology of Farm animals (Cambridge University Press), 1932.

Practical Work in Botany.

A general study of the plant as a whole.

Growing of plants from seeds, different types of germination of seeds.

Examination of seedlings to study external morphology of primary organs.

Simple and compound microscopes—Study of their parts and their uses.

Examination and description of various types of roots, stems and leaves, their constituent parts and their modification.

Examination under microscope of cotton fibres, hairs, starch and air bubbles.

Study of unicellular organisms such as Yeast, Spirogyra, and staminal hairs of Tradescantia to demonstrate protoplasmic movements.

Freehand section with staining practice of root, stem and leaf and their description.

Study of cell-wall, protoplasm, vacuoles, nucleus, plastids and starch grains.

Iodine test of starch grains.

Examination, dissection and descriptive study of flowers and their parts and the study of their functions.

Examination and identification of fruits and seeds.

Identification of Spirogyra, Mucor, Moss and parts of fern and cycas.

Study of external botanical characters, including identification of plants of common field and garden crops belonging to families in the syllabus.

Practical Work in Zoology.

1. Examination of *Amoeba*, *Paramoecium* and *Hydra* and a study of their structure.

2. (a) The study of external characters, life stages of the animals included in para. 2 of the theory course.

(b) Collection and preservation of the animals and their life-stages which will be presented in the examination.

(c) Rearing of a butterfly or silk moth—

(i) Stages of the animals used as types for life history.

(ii) Insects—Grasshoppers, butterflies or moths.

3. The dissection of the internal structure of the types in para. 3 of the theory course (Heart, lung and liver of goat may be substituted for squirrel).

4 Preparation of microscopic slides in water or glycerine—

(a) Ciliated epithelium.

(b) Striated muscles.

(c) Setae of earthworm.

(d) Nephridium of earthworm.

(e) Mouthparts and Gizzard of cockroach.

Comparison of the main parts of axial and appendicular skeleton in Frog, Pigeon and Rabbit (Details excluded) and the dentition in Dog and Horse.

5. Microscopic examination of the structures as given in para. 5(a) theory.

6. Candidates will be required to bring to the practical examination their note-books for inspection by the examiner, certified by the teacher as being the actual work done by the candidates.

GROUP III.

I.—ELEMENTS OF SOIL SCIENCE.

Paper I

Soil Geology—The origin of soils ; classification, nature and the mineral constituents of the more important soil-forming rocks ; chief characteristics of the following rocks:

(1) Igneous: granite, basal.

(2) Sedimentary : limestone, sandstone.

(3) Metamorphic : schists ; marble ; slate ; quartzite.

The importance of felspars in the formation of clay.

The physical properties of soils.—Pore space ; size of soil particles and relation of size to surface area ; resistance to cultivation operations plasticity, absorption, cohesion ; limits of moisture for successful tillage ; effect of presence of organic matter on soil structure : effect of lime ; effect of cultivation. Factors affecting soil temperature and their control.

Soil classes—Classification of soils into gravel, sand, loam, silt, clay, calcareous, peaty and concretionary soils and the nature of each class ; division of the United Provinces into its natural soil classes and the characteristics of each class.

Climatology—The distribution of rainfall, its effect upon the composition of soils ; determination of humidity ; factors affecting dew ; changes in atmospheric temperature and their effect upon humidity ;

winds and their importance in farming ; snow, ice and frost and their relation to the soil and plant ; methods of obtaining data for climatic reports ; simple instruments used in meteorological observations ; climate in relation to soils and plant growth.

Paper II

Tillage, plant food and general principles of manuring.—Objects, kinds and timeliness of tillage ; chemical and physical effects of tillage. Elements necessary for plant growth and their sources ; abundant and deficient elements in the soil : conversion of organic matter into plant food ; conditions necessary for bacterial activity in the soil ; the nitrogen cycle briefly explained ; the relation of air, water and heat to plant food in the soil, the presence of lime and its importance to the production of plant food. The effect of organic manures on the structure of soils ; the correct time of application of manures in relation to irrigation and rain water ; losses of plant food by incorrect manuring ; losses by incorrect storage and their prevention ; acidity and defoliation due to excessive and unsuitable manuring ; remedies for this condition ; condition of soil necessary before application of fertilizers can be profitable ; the essential difference between organic manures and inorganic manures as regards effect on soils ; methods of manuring with both organic manures and chemical fertilizers.

The following books are suggested for reference .

1. Soils, their Properties and Management, by Lyon and Buckman (Macmillan & Co., New York), price about Rs.10.
2. Soils and their Managements, by M. F. Miller (Ginn & Co., New York), price about Rs.5-8.
3. An Introduction to Tropical Soils, by Dr. P. Vageler (Baillier, Tindall & Cox), price about Rs.11.
4. The Evolution and Classification of Soils, by Dr. E. Raman (W. Heffer & Sons, Ltd., Cambridge), price about Rs.5-8.
5. Agricultural Meteorology, by Warren Smith (Macmillan & Co., New York).
6. Climate, by W. G. Kendrew (Clarendon Press, Oxford), price about Rs.10.

7. Meteorology, by A. E. M. Geddes (Blackie & Sons, Ltd., London), price about Rs.14

Principles of Irrigation and Drainage

I.—Irrigation Terminology.—Cusec ; acre inch ; flow irrigation ; lift irrigation ; hydraulic gradients.

II.—The necessity of irrigation.—Water requirements of crops and duty of water. Evaporation and its relation to plant growth. Seepage and its relation to soil texture. Prevention of waste of irrigation water.

III.—Irrigation Structures.—The construction of irrigation channels. Measurement of irrigation water : (a) in flowing channels, (b) at outlet discharge.

IV.—Systems and Methods of irrigating crops.—Flooding or basin border, furrow, sub-irrigation, sprinkling, advantages and limitations of each method.

V.—Irrigation Equipment.—Indigenous water lifts. Simple discussion of pumps, hand and power. Capacity, power required and efficiency.

VI.—The necessity for drainage.—Harm caused by excessive moisture in the soil. Alkali soil, formation, prevention and reclamation. Acid soils and their relation to drainage. Drainage of irrigated land.

VII.—Drainage methods.—Surface and sub-soil drainage. Kinds of drains. Typical arrangement of under-drainage and surface-drainage. Drainage by pumping.

VIII.—The control of erosion.—Natural drainage and its control. Soil saving dams. Broad base terraces. The reclamation of eroded land.

The following books are suggested for reference :

1. Agriculture and Irrigation in Continental and Tropical Climates, by K. D. Doyle (Thacker, Spink & Co.). Price Rs.16-8.

2. Irrigation and Drainage, by King (Mount Pleasant Press, Harrisburg, Pa).

3. Studies in Agricultural Improvement by C. Maya Dass (Government Central Press, Allahabad). Re.1-4.

NOTE—It is suggested that the lecture work in soil science be co-ordinated as far as possible with related work in the field.

II.—PRACTICAL FARMING

I.—Crop Culture—

A. The growing of farm crops and their care by students : practice in the following operations :

(a) Preparation of seed-bed with plough, harrow, roller and planker.

(b) Sowing of seed by hand and with seed drills.

(c) Irrigation.

(d) Interculture with hand and bullock implements.

(e) Weeding.

(f) Earthing with hand and bullock implements.

(g) Harvesting, including reaping with machinery.

(h) Threshing, grinding, cane-crushing and fodder-cutting.

B. Crops.—Special attention to be given to the following :

(1) Cereals .. Wheat, barley, rice, bajra, juar and maize.

(2) Fibres .. Cotton, sunn-hemp, patsunn.

(3) Oil-seeds .. Castor, linseed, mustard.

(4) Legumes .. Peas, groundnuts, arhar, gram.

(5) Fodders .. Juar, lucerne, guar oats, fodder grasses.

(6) Miscellaneous .. Sugarcane, potatoes, tobacco, turmeric, ginger, chillies, banda.

C. Familiarity with the principles of rotation of crops.

D. The following experiments to be performed and results attested in the student's note-book by the teacher :

(1) Time taken to plough, harrow, cultivate and plank one acre under the following conditions :

Hard soil,	|	Sod, and
Soft soil,	|	Stubble.

(2) The variation in time taken in area ploughed with differences in depth and width of ploughing under similar conditions.

(3) The area sown with simple seed drills per day calculated from the work done in two hours ; probabilities of error.

(4) Quantity of work done in hand-weeding, harrowing, etc., per hour by a given number of labourers.

(5) Increase in outturn of crops by top dressing with chemical fertilizers and oil cakes.

(6) Measurement of speed of draft cattle.

The following books are suggested for reference :

1. The Complete Farmer, by Primrose McCommell (Cassel & Co., London).
2. Roberts and Fawlknor : A Text-book of Punjab Agriculture.
3. Crop Production, by A. and G. Howard, Institute of Plant Industry, Indore, C. I.
4. Chemistry of Crop Production, by T. B. Wood (University Tutorial Press).

Vegetable Gardening—

A. The growing of vegetable crops in individual plots or by small groups of students. Attention should be given to the following crops :

- | | | |
|---------------------------|----|--|
| (a) Cole-crops | .. | Cabbage, knol-kohl, cauliflower. |
| (b) Root crops | .. | Carrot, beetroot, turnip, sweet potato. |
| (c) Bulb crops | .. | Onion, garlic. |
| (d) Legumes | .. | Peas and beans. |
| (e) Cucurbitaceous crops. | | Cucumber, torai, melons, pumpkins, gourds. |
| (f) Miscellaneous | .. | Tomato, brinjal, okra, chillies, maize. |

B. A brief study of (1) place of vegetables on the farm, both as main and supplementary crops ; (2) the value of vegetables in the diet ; (3) management of a home garden ; (4) market gardening.

C. A note-book should be kept

II.—Farm Machinery—

Workshop practice in wood and iron.

Practical study of the plough, harrow, cultivator, roller, and planker ; hitches ; adjustment of implements ; comparison of quantity

of fodder chopped by machines worked by hand and by power with hand chopping. Calculation of speed of machines in r.p.m. and of pulley sizes.

The following books are suggested for reference :

1. Farm Mechanics, by Crawshaw and Lehman (Manual Arts Press, Peoria, Illinois, U. S. A.).
2. Farm Machinery, by A. A. Stone (John Willey & Sons, New York).
3. Farm Mechanics, by M. A. Sharp and W. M. Sharp (John Willey & Sons, New York), price about Rs.7-8.

III.—Introduction to—

(a) *Animal Husbandry*—The course to deal with the important breeds of draft and dairy cattle, buffaloes, sheep and goats ; naming of the different external parts ; ability to judge the age of cattle ; score card method of judging dairy cows and work bullocks ; grooming of cattle and cleaning of cattle byres ; the principle of balancing rations for the dairy cow, work bullock, sheep and goat ; practice in exercising bulls ; principles and methods of milking and the sanitary production of milk ; market value of dairy and draft cattle, buffaloes, sheep and goats ; milk recording, history sheets and pedigree records of dairy cattle.

(b) *Veterinary Science*—Handling and throwing of animals and securing them for operations, shoeing and castration, familiarity with common medicines used in veterinary practice and their administration ; determination of temperature, pulse and respiration of domesticated animals.

The following books are suggested for reference :

1. Dairy Cattle and Milk Production, by C. H. Eckles, (Macmillan & Co.). Price about Rs.9.
2. Dairy Farming, by B. K. Ghare (Macmillan). Rs.3.
3. Feeding of Crops and Stock, by A. D. Hall.
4. The Complete Farmer, by Primrose McCommell.
5. Judging Live stock, by John A. Craig (Kenyon Printing Company, Des Moines, Iowa). Price Rs.7.
6. Feeds and Feeding (abridged edition), by Henry and Morrison (Henry and Morrison, Ithaca, N. Y.). Price about Rs. 18.
7. Goat-keeping, by Stewart, published by the Punjab Economic Board, Lahore.

GROUP IV.

ENGLISH.

There will be two papers of three hours each. The first paper will be on (a) Prose text-books, (b) books recommended for general study, (c) Unseens and (d) Grammar. The second paper will include Translation and Composition.

Text-books prescribed :

(a) For detailed study and (b) For general study—

(The same texts as are prescribed in prose for the Intermediate Examination of 1944.)

GROUP V.

ECONOMICS.

Paper I

Introduction.—What is Economics ? Why is one nation richer than another ? Why is one man richer than another ? What is wealth ? How does it differ from income ?

Production.—What does it cost to produce wheat on a village farm in the United Provinces ? Cost of labour, ploughing, sowing, weeding, reaping, threshing, etc. Purchase and depreciation. Interest on all expenses till the crop is sold. Rent of the land and transportation to the bazar. Cost of supervision.

Examine similarly the cost of producing and marketing milk and other common necessities.

Exchange.—Has it paid to produce wheat and milk at the above cost ? What are the present prices of wheat, milk, etc. in the United Provinces for different qualities, at different seasons and for the last five years ? What causes these differences and changes ? Laws of supply and demand and causes for variation. Relation of prices to cost of production over a period of years.

Consumption.—Why do we demand wheat, cotton, milk, pottery, tools ? Wants and their varying importance. Necessities, comforts luxuries. Division of income between various wants. Budgets of

students and villagers. Do we get equal satisfaction from equal expenditure? How do we change our purchase when prices fall and when our incomes increase?

Paper II

Difference in the cost of production and distribution.—Why do rents differ? Kinds of lands. Advantages of fertility and situation.

Why do rates of interest differ? Short and long loans: risks and management of loans. Co-operative credit. Relation of the rate of interest to the supply of capital. Causes of saving.

Why do wages differ? Grades of labour. Efficiency of labour. Real and nominal wages. Cost of living and the standard of living. Relation of wages to the supply of labour. Relation of birth-rates and death-rates to income.

Organization and management—In what different ways might wheat be produced? Does the method depend upon situation? Wages? The rate of interest? Education? Quality of the product? How is the method actually determined? By whom?

Carry out this reasoning for milk and other common necessities.

In what cases is it most profitable to use a railway, a bicycle and one's feet? Compare the uses of handwriting, typewriting and printing press. Hand-sewing and the sewing machine. Why do primitive methods continue in use along with more advanced ones?

Money, banking and foreign exchange, barter, uses of money, reasons for minting and for free coinage, paper money and cheques. The work of banks and their economic importance. India's foreign trade and its advantages.

Taxation—The necessity for taxation. The income-tax, custom duties, land revenue and excise. Who bears these taxes? Reasons for progressive taxation. Imperial and local taxation.

The following books are suggested for reference:

1. Elements of Economics, Vol. I, by Alfred Marshall (Macmillan & Co., London). (This should be regarded as of special importance for reference.)

2. An Introduction to Economics for Indian Students, by Moreland

3. A First Book of Economics, by Norman Crump (Macmillan and Co.). Rs. 2-1.
4. Economics for the General Reader, by Henry Clay (Macmillan and Co.). Rs. 3-1.
5. Introduction to Economics, by Jathar and Beri (Oxford University Press). Rs.4-8.

or

MATHEMATICS.

Paper I

ALGEBRA—Quadratic equations involving one or two unknown quantities.

Arithmetical and Geometrical Progressions.

Permutations and Combinations.

The Binomial Theorem for positive integral index.

Proportions and Variations.

Use of indices and logarithms.

Practical use of the Slide Rule.

GEOMETRY AND MENSURATION—Simple Plane and Solid Figures, excluding any detail about the sections of a cone.

Similar figures and proportionals.

Field book.

Collinear points and concurrent straight lines.

TRIGONOMETRY—Trigonometrical Ratios.

Easy trigonometrical identities and equations.

Solution of triangles.

Practical measurement of angles of elevation, heights and distances, including the necessary calculations.

Paper II

GRAPHS—Variables and co-ordinates.

Statistical graphs and those governed by a natural law.

Continuity and discontinuity of graphs. Problems.

Graphs and Algebraical expression of functions.

The linear graph.

Use of Cartesian co-ordinates—Distance between two points.

Distance between a straight line and a point.

Angle between two straight lines.

The quadratic graphs.

Practical Graphical Interpolation.

INTEGRATION—Small errors ; infinitesimal quantities.

Differentials ; differential coefficient.

Easy standard forms of differentiation explained (without elaborate proofs). Sum and product of functions.

Summation of series.

Integration considered as summation of a series of differentials.

A few very easy standard forms of integrals (without elaborate proofs). Integration by parts.

Easy determinations of length, area and volume.

Practical use of the planimeter and the opisometer.

Books suggested :

(1) Elementary Treatise on Graphs, by J. A. Gibson (Macmillan & Co.).

(2) Calculus for Beginners, by J. W. Mercer (Cambridge University Press).

(3) Elementary Trigonometry, Parts I & II only, by A. W. Siddons and R. T. Hughes (Cambridge University Press).

(4) Lessons in Geometry, by S. N. Chatterji (Macmillan & Co.).

(5) Intermediate Mathematics, by T. S. Usherwood and C. J. A. Triemb (Macmillan & Co.).

