EDUCATIONAL INSTITUTE
47 Moray Place,
EDINBURGH.
OF SCOTLAND

LEAVING CERTIFICATE EXAMINATION

(INCLUDING DAY SCHOOL CERTIFICATE (HIGHER) GENERAL PAPER).

EXAMINATION PAPERS 1926.

LONDON :

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SECONDARY   EDUCATION   (SCOTLAND).

LEAVING   CERTIFICATE   EXAMINATION

(INCLUDING DAY SCHOOL CERTIFICATE (HIGHER)
GENERAL PAPER).

EXAMINATION   PAPERS,   1926.

CONTENTS.

LEAVING CERTIFICATE EXAMINATION

(including Day School Certificate (Higher) General Paper).

The Leaving Certificate Examination (including the General Paper set in connection with the award of the Day School Certificate (Higher)) is held annually by the Scottish Education Department. In 1926 it commenced on Monday 22nd March.

Candidates must be (*a*) pupils of a School at which, or in connection with which, the Examination is held, who have been in regular attendance at the School from January to the date of the Examination; or (*b*) in the case of the Leaving Certificate Examination, Junior Students.

EXAMINATION PAPERS.

DAY SCHOOL CERTIFICATE (HIGHER), 1926

GENERAL PAPER

Monday, 22nd March—10 A.M. to 12 NOON

The value attached to each question is shown in brackets after the question.

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

1. Here are two stanzas of rhymed verse printed as prose without stops or capitals. Re-write them as verse, inserting capitals and stops but not changing the order of the words. (Observe that the first line of

the first stanza rhymes with the first line of the second stanza.)

> fair pledges of a fruitful tree why do ye fall
> so fast your date is not so past but you may
> stay yet here awhile to blush and gently smile
> and go at last

> what were ye born to be an hour or halfs
> delight and so to bid goodnight twas pity nature
> brought ye forth merely to show your worth
> and lose you quite   **(10)**

2. Write a short account or description, to fill about *one* page of your book, of any *one* of the following :—

    (*a*) How to make a Fahrenheit Thermometer.

    (*b*) Flodden Field.

    (*c*) A Heroine of Shakespeare or of Scott.

    (*d*) Autumn in Town and Country.   **(30)**

3. Read the following passage carefully, and then answer the questions that follow it :—

> " Such hedgerows were often as tall as the labourers' cottages dotted along the lanes or clustered into a small hamlet, their dingy little windows telling, like thick-filmed eyes, of nothing but darkness within. The passenger on the coach-box saw chiefly the roofs of it : probably it turned its back on the road and seemed to lie away from everything but its own patch of earth and sky, away from the parish church by long fields and green lanes, away from all intercourse except that of tramps.

> " But there were some trim cheerful villages too, with a neat or handsome parsonage and grey church set in the midst; there was the pleasant tinkle of the blacksmith's anvil, the patient cart-horses waiting at his door; the basket-maker peeling his willow wands in the sunshine; the wheelwright putting the last touch to a blue cart with red wheels; here and there a cottage with bright transparent windows showing pots full of blooming balsams or geraniums, and little gardens in front all double daisies or dark wallflowers; at the well, clean and comely women

carrying yoked buckets; and towards the free school small Britons dawdled on, and handled their marbles in the pockets of unpatched corduroys adorned with brass buttons. The land around was rich, and the homesteads were those of rich farmers. The coach would be sure to overtake some of them on their way to their outlying fields or to the market town, sitting heavily on their well-groomed horses, or weighing down one side of an olive-green gig. They probably thought of the coach with some contempt, as an accommodation for people who had not their own gigs, or who, wanting to travel to London and such distant parts, belonged to the trading and less solid part of the nation."

GEORGE ELIOT.

(a) In the two paragraphs quoted above you have two contrasted pictures. Bring out clearly the main points of contrast.

(b) Imagine that you are one of the rich farmers overtaken by the coach. Express, quite simply and directly, the thought which probably passes through your mind.

(c) Explain the meaning of the following words and phrases as used in the context :—parsonage, transparent, unpatched corduroys, accommodation, the less solid part of the nation.

(d) Point out a simile in the above passage, and show how appropriate it is.

Point out two instances of alliteration, and one word which appeals to the sense of hearing.

(e) Distinguish root and affix in—hamlet, passenger, intercourse, cottage—and show the force of the affix in each case. Give a shorter form of " balsam." **(35)**

4. (a) Distinguish the following pairs of terms as accurately as you can, and mention one example of each :—transitive verbs *and* intransitive verbs ; verse *and* stanza ; simile *and* metaphor ; rhyme *and* metre ; fable *and* parable.

(b) Explain the following words as used in Geography or in History :—latitude, estuary, gradient, Jacobites, Covenanters. **(15)**

5. (*a*) Point out the subordinate clauses in the following sentences, and say what kind of clause each is :—

    (1) They arrived as day was breaking.

    (2) I met a boy who was carrying a parcel.

    (3) Can you tell us where Burns was born ?

    (4) I cannot imagine why she is jealous.

    (5) Though he was lame, he was never late.

(*b*) Replace each of these subordinate clauses by a phrase which conveys the same meaning.   (**10**)

LEAVING CERTIFICATE EXAMINATION

ENGLISH

(INCLUDING LITERATURE AND HISTORY)

(FIRST PAPER)

Monday, 22nd March—10 A.M. to 12.30 P.M.

The value attached to each question is shown in brackets after the question.

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

1. Write a Composition, of about two pages, on *any one* of the following subjects :—

    (*a*) One of Nelson's captains writes home to his wife after the Battle of the Nile.

    (*b*) " Nothing is important that interests the young."

        " Nothing is important that does not interest the young."

        Discuss these contrasted statements.

    (*c*) " The United States of Europe." What advantages would flow from a union of the nations of Europe, and what obstacles at present stand in the way ?

    (*d*) School Life in Fiction and in Fact.   (**30**)

2. Examine the following argument carefully, and then answer the questions that follow it :—

> "At such times society, distracted by the conflict of individual wills, and unable to attain by their free concurrence to a general will, which might unite and hold them in subjection, feels an ardent desire for a sovereign power, to which all individuals must submit; and as soon as any institution presents itself which bears any of the characteristics of legitimate sovereignty, society rallies round it with eagerness, *as people under proscription take refuge in the sanctuary of a church.* This is what has taken place in the wild and disorderly youth of nations, such as those we have just described. Monarchy is wonderfully suited to those times of strong and fruitful anarchy, if I may so speak, in which society is striving to form and regulate itself, but is unable to do so by the free concurrence of individual wills."

(*a*) Bring out the leading idea of this passage as briefly and plainly as possible. Illustrate it, if you can, from your historical reading. Suggest a title for the passage.

(*b*) What exactly is meant by "a general will," "legitimate sovereignty," "society rallies round it," "strong and fruitful anarchy"?

Give the precise meaning of the clause printed in italics.

(*c*) Give a general grammatical analysis of the first sentence, from "At such times" to "of a church." (**25**)

3. Read the following passage, and then answer the questions that follow it :—

(*Satan, having secretly entered Eden, is there discovered by the angelic guard, whom he defies.*)

" While thus he spake, the angelic squadron bright
Turned fiery red, sharpening in mooned horns
Their phalanx, and began to hem him round
With ported spears, as thick as when a field
Of Ceres ripe for harvest waving bends
Her bearded grove of ears which way the wind
Sways them; the careful ploughman doubting stands
Lest on the threshing-floor his hopeful sheaves
Prove chaff. On the other side, Satan, alarmed,

Collecting all his might, dilated stood,
Like Teneriff or Atlas, unremoved :
His stature reached the sky, and on his crest
Sat Horror plumed ; nor wanted in his grasp
What seemed both spear and shield.''

(*a*) Describe very briefly, and without figures of speech, the action of the angels and of Satan.

(*b*) Point out the two similes by which Milton elaborates this description, and contrast the extent to which he develops each simile.

Point out an example of personification. What is its effect here ?

(*c*) Give the meaning, and, if you can, the derivation of—squadron, phalanx, dilated, plumed. Explain the phrases " mooned horns," " field of Ceres," " bearded grove." Does Milton here use " careful," " hopeful," " alarmed " in their ordinary modern senses ? If not, in what senses does he use them ?   **(25)**

4. (*a*) Explain and illustrate any *two* of the following—a subordinate clause of result ; a rhetorical question; a mixed metaphor ; an anachronism; *reductio ad absurdum.*

   (*b*) Criticise the English of the following sentences :—

    (1) The lowest of these two classes was comprised of inferior material, and which required skilled teaching.

    (2) I would not willingly impugn the veracity of that statement.   **(10)**

5. " The angles at the base of an isosceles triangle are equal."

" In a straight-edged three-sided shape having two sides of the same bigness the openings between these two sides and the third side will also be of the same bigness."

Compare and contrast these two modes of expression, and state what conclusion you draw as to the function and value of (*a*) the Anglo-Saxon, (*b*) the Romance elements in our English vocabulary. Illustrate further from the vocabulary of Medicine, *or* Music, *or* Grammar.   **(10)**

ENGLISH

(INCLUDING LITERATURE AND HISTORY)

(SECOND PAPER—LITERATURE)

Monday, 22nd March—1.30 P.M. to 2.30 P.M.

Two questions should be attempted. Twenty marks are assigned to each question.

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

1. What is irony? Give examples of Chaucer's irony in the description of *any two* characters in the *Prologue,* quoting where you can.

2. Note the exact aspect of dawn described and the feeling evoked in each of the following passages. Identify the author in each case, if you can, giving reasons for your answer.

    (*a*) Now when the rosy-fingered Morning faire,
        Weary of aged *Tithones* saffron bed,
    Had spred her purple robes through deawy aire,
        And the high hills *Titan* discoverèd . . .

    (*b*) Night's candles are burned out, and jocund day
        Stands tiptoe on the misty mountain tops.

    (*c*) While the still morn went out with sandals grey.

    (*d*) He is not here; but far away
        The noise of life begins again,
        And ghastly through the driving rain
    On the bald street breaks the blank day.

3. Describe the exact part played in the development of the human action *either* by the fairies in *A Midsummer Night's Dream,* or by Ariel in *The Tempest,* or by the Ghost in *Hamlet,* or by the witches in *Macbeth.*

4. What is a ballad? What is meant by legendary, what by historic ballads? Name examples of each. Name and describe shortly one or two of the best imitations of the old ballads by modern poets.

5. Describe the subject and the form of *one* of the following poems of the eighteenth century, naming the author. In what ways is the poem characteristic of the century?—*The Rape of the Lock ; The Deserted Village ; The Progress of Poesy ; The Village ; On the Receipt of my Mother's Picture.*

6. Describe *two* of the following characters as portrayed by an English essayist or novelist, naming the author in each case :—

Sir Roger de Coverley; The Man in Black; The Vicar of Wakefield; Mrs. Battle; Samuel Taylor Coleridge; Miss Bates; A Poor Relation; Mrs. Gamp; Lord Braxfield (" Weir of Hermiston "); Graham of Claverhouse.

7. What poet or poets of the Romantic Revival (1798–1824) would you select as representing (*a*) the new interest in Nature and the Peasantry; (*b*) the interest in the Middle Ages; (*c*) the interest in Greek themes and forms ? Name some characteristic works in each case.

8. " Tennyson describes rather single moods of mind than characters; Browning is more interested in character." Discuss this, taking *two* (one from each group) of the following dramatic monologues :—

(*a*) *Œnone ; Tithonus ; Ulysses ; Lucretius ; Tiresias ; The Northern Farmer—Old Style.*

(*b*) *My Last Duchess ; Pictor Ignotus ; The Bishop orders his Tomb at St. Praxed's Church ; Up at a Villa, down in the City ; A Toccata of Galuppi's ; The Lost Leader.*

9. Write a note on *any one* of the following authors of whose work you have read some examples :—

Matthew Arnold, Edward Fitzgerald, Bernard Shaw, John Masefield, Walter de la Mare, Joseph Conrad.

ENGLISH

(INCLUDING LITERATURE AND HISTORY)

(THIRD PAPER—HISTORY)

Monday, 22nd March— 2.45 P.M. to 3.45 P.M.

Two *questions should be attempted. Twenty marks are assigned to each question.*

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

1. " Saxon and Norman and Dane are we." How far does this line of Tennyson accurately describe the

racial origins of the inhabitants of *either* England *or* Scotland?

2. Illustrate and account for the frequency of rebellions in England between the Norman Conquest and the death of Henry III.

3. *Either :* Write a brief estimate of the character and career of Edward I. from the point of view *both* of (*a*) a contemporary Englishman *and* of (*b*) a contemporary Scotsman.

Or : Contrast the policy of Edward I. with that of Edward III. Which of the two do you regard as having been the more beneficial to England?

4. Explain the importance of *three* of the following :— the First Crusade, the Black Death, Lollardy, the career of Joan of Arc, the quarrel between Edward IV. and Warwick, the fall of the Black Douglases, the Battle of Flodden, the Council of Constance.

5. Show how religious controversy affected questions of foreign policy between the reign of Henry VIII. and the death of James VI. and I.

6. *Either :* " It was the same movement of national feeling that made first Oliver Cromwell and then William III. ruler of this country." How far is this statement true? Compare the circumstances in which each attained power.

Or : Illustrate and account for the growth of British dominions overseas between the death of Queen Elizabeth and the death of Queen Anne.

Or : Estimate the importance of *three* of the following :—The Poor Law of 1601, the Solemn League and Covenant, the Popish Plot, the Siege of Londonderry, the Battle of Blenheim, the Revocation of the Edict of Nantes.

7. Draw a map to illustrate any *one* of the following, and explain the importance of the places you mark in connection with the events to which your map relates :—

(*a*) the Wars of the Roses;

(*b*) the Great Civil War, 1642–48;

(*c*) the Rising of 1745–46;

(*d*) the campaign of Quebec;

(*e*) the growth of towns after the Industrial Revolution.

8. *Either :* It is generally admitted that the policy of Sir Robert Walpole was wise and beneficent. Explain the virulence of the opposition which he had to face.

Or : Discuss *one* of the following topics:—

(*a*) British India up to the time of Warren Hastings;

(*b*) the causes of the outbreak of war with France in 1793;

(*c*) the importance of sea power between 1793 and 1815.

9. Tell what you know of any *one* of the following :—

(*a*) the struggle for Parliamentary Reform up to 1832;

(*b*) the transformation of " colonies " into " Dominions ";

(*c*) the causes of British commercial prosperity in the nineteenth century.

10. Give some account of any *one* of the following and of the part which Great Britain played in it:—

(*a*) the struggle for Greek Independence;

(*b*) the union of Italy;

(*c*) the American Civil War, 1861–65;

(*d*) Egypt and the Soudan, 1875–98.

GEOGRAPHY

Lower Grade

Monday, 29th March—10 A.M. to 12.30 P.M.

Six *questions should be attempted, viz., the whole of Section* A, two *questions from Section* B, *and* two *questions from Section* C.

The value attached to each question is shown in brackets after the question.

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

SECTION A.

The whole of this Section should be attempted.

1. On the accompanying map of part of the British Isles—

 (a) Mark with the letters *WW* two districts engaged in woollen manufacture; with *LL* two engaged in linen manufacture; and with *SS* two engaged in iron smelting. One of the districts must in each case be Scottish, but not both. Then print in its place in each district the name of a town engaged in the industry indicated.

 (b) Mark with a cross—Yorkshire Wolds, Mourne Mountains, Loch Foyle, the Merse of Berwickshire, Pass of Killiecrankie, Sound of Sleat. Print the names close to the crosses.

 (c) Shade those areas of the Southern uplands of Scotland which are over 1,000 feet above sealevel; name the main hill-groups so defined; and draw the Waverley Route—from Edinburgh to Carlisle *viâ* Galashiels and Hawick, with careful regard to the contour-lines. **(20)**

2. On the accompanying map of the Indian Ocean—

 (a) Name Malacca Strait, Strait of Bab-el-Mandeb, Torres Strait, Sumatra; mark with a cross, and name, Batavia, Manila, Colombo, Zanzibar, Karachi, Rangoon.

 (b) Indicate by arrows the directions of the winds that bring (1) summer rain to Southern China, (2) winter rain to South-western Australia, (3) summer rain to Delagoa Bay. Over each of these areas print the name of its characteristic climate. Name the three winds shown by your arrows.

 (c) Print the following names of products over *islands* which produce these products *for export*—tea, cloves, copra, sugar, pearl-shell, tin. (A separate island for each product.) **(20)**

SECTION B.

Two questions should be attempted from this Section.

3. With the help of the map used in Question 1 give a geographical description *either* of Ayrshire *or* of the English Lake District, with special reference to physical features, natural resources, and the occupations of the people.   **(15)**

4. Select any river-system represented on the map used in Question 1, and give as complete an account as you can of the course of the main stream and its tributaries in relation to the character of the area drained. **(15)**

5. Define the boundaries of the Central Lowlands of Scotland, and explain why the population has concentrated there.   Why is there no similar concentration in Ireland ?   **(15)**

6. Bristol, Durham, Norwich, Winchester, York. State the exact position of *any three* of these towns, and compare their importance to-day with their importance in earlier times.   **(15)**

SECTION C.

Two questions should be attempted from this Section.

7. What broad conditions of climate and relief determine the world distribution of forest, grass-land, and desert ?   Give examples in some detail.   **(15)**

8. Give a brief geographical account of Holland and Belgium, so as to bring out resemblances and differences.   **(15)**

9. Give a general account of the railway system *either* of South Africa *or* of Australia, bringing out the relation of the system to the relief and resources of the country selected.   Illustrate by a sketch-map.   **(15)**

10. What are the chief commodities exported by (*a*) Canada and (*b*) the Argentine ?   What geographical conditions have enabled these countries to export these commodities in large quantities ?   **(15)**

GEOGRAPHY

Higher Grade

Monday, 29th March—10 A.M. to 12.30 P.M.

FIVE *questions should be attempted, viz., the whole of Section* A, TWO *questions from Section* B, *and* TWO *questions from Section* C.

The value attached to each question is shown in brackets after the question.

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

SECTION A.

The whole of this Section should be attempted.

1. The accompanying map shows a part of the Forth valley, from above Stirling to below Alloa, with the Ochil Hills to the north :—

(*a*) Write a careful description of the relief and drainage of the area shown, emphasising any peculiarities of the rivers.

(*b*) Describe in detail, illustrating by simple sketch-maps, the position of the three towns of Stirling, Alva and Alloa, and explain why and in what ways the three sites are suitable for settlements. Why has Stirling always been the most important of the three historically ?

(*c*) In the part of the Ochils immediately behind Alva, compare the average slope between Bengengie Hill (1,853 ft.) and Craig Leith (1,682 ft.) with that from the latter hill to the valley floor. Draw very carefully to scale diagrams bringing out the contrast. **(36)**

SECTION B.

Two questions should be attempted from this Section.

2. Describe some simple experiments and observations illustrating or bringing out the chief properties of water, and explain their bearing upon the facts of physical geography. **(16)**

3. What main factors influence the localisation of industries ? Illustrate by a careful account of *two* examples, taking one from Scotland and one from England, *or* Ireland, *or* Wales.   (16)

4. Compare and contrast the North Sea, the Baltic and the Mediterranean, both as regards their general characters and as highways of commerce, and give some account of the trade of *one* important port on the shores of *each* sea.   (16)

5. Write an account of *one* small area with which you are personally familiar, laying emphasis *either* on structure and relief *or* on the natural vegetation and cultivated crops. Explain as far as possible the conditions which you describe.   (16)

6. Describe, illustrating by a sketch-map, the course of the Danube and its chief tributaries, in relation to the relief of Central Europe. Estimate the importance of the Danube as a waterway compared with the Rhine.   (16)

Section C.

Two questions should be attempted from this Section.

7. How far is it true to say that the climatic belts of Africa are repeated on either side of the equator ? Describe the chief types of climate represented in the continent and add notes on the characteristic vegetation in each belt.   (16)

8. What causes may lead to the rise of a great town in the interior of a continent ? Illustrate by accounts of any *four* of the following :—Pittsburg, Khartum, Delhi, Hankow, Damascus, Winnipeg.   (16)

9. Write notes on any *four* of the following :—Great Circle routes, Coral Islands, Time Zones in North America, Mercator's Projection, Monsoon winds.   (16)

10. What geographical reasons help to explain the fact that the development of Canada has been much more rapid than that of Siberia ?   (16)

11. Discuss, with special reference to rubber, palm-oil and cinchona (quinine), the respective advantages of the plantation system and the collection of wild produce. (16)

LATIN

LOWER GRADE

Thursday, 25th March—10 A.M. to 12.30 P.M.

The value attached to each question is shown in brackets.

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

1. Translate into English :—

(a) *The Rival Centurions.*

Erant in ea legione fortissimi viri, centuriones, Titus Pullo et Lucius Vorenus. Hi perpetuas inter se controversias habebant uter anteferretur, omnibusque annis de loco summo contendebant. Ex his Pullo, cum acerrime ad munitiones pugnaretur, "Quid dubitas," inquit, "Vorene? aut quem locum virtutis tuae probandae exspectas? hic dies de nostris controversiis iudicabit." Haec cum dixisset, procedit extra munitiones, et in eam hostium partem quae confertissima est visa, irrumpit. Ne Vorenus quidem sese vallo continet, sed omnium veritus existimationem subsequitur. Mediocri spatio relicto Pullo pilum in hostes immittit atque unum ex multitudine procurrentem percussit et exanimavit : hostes socium scutis protegunt, in Pullonem tela universi coniciunt neque dant regrediendi facultatem. Transfigitur scutum Pulloni et verutum[1] in balteo[2] defigitur. Succurrit inimicus illi Vorenus et laboranti subvenit. Ad hunc se confestim a Pullone omnis multitudo convertit; illum veruto arbitrantur occisum. Gladio comminus rem gerit Vorenus atque uno interfecto reliquos paulum propellit; dum cupidius instat, in locum deiectus inferiorem concidit. Huic rursus circumvento fert subsidium Pullo, atque ambo incolumes compluribus interfectis summa cum laude sese intra munitiones recipiunt. Sic accidit ut alter alteri inimicus auxilio salutique esset, neque diiudicari posset uter utri virtute anteferendus videretur. **(30)**

[1] = spear.　　　　[2] = belt.

(b) *Ovid asserts that, while he was pondering on the origin of the name of the month of June, the goddess Juno appeared to him.*

Est nemus arboribus densum, secretus ab omni
  Voce locus, si non obstreperetur aquis.
Hic ego quaerebam, coepti quae mensis origo
  Esset, et in cura nominis huius eram.
Ecce deas vidi; non quas praeceptor arandi
  Viderat, Ascraeas[1] cum sequeretur oves ;
Nec quas Priamides[2] in aquosae vallibus Idae
  Contulit : ex illis sed tamen una fuit.
Ex illis fuit una, sui germana[3] mariti :
  Haec erat, agnovi, quae stat in arce Iovis.
Horrueram, tacitoque animum pallore fatebar.
  Tum dea, quos fecit, sustulit ipsa metus.   (20)

[1] *Ascraeus*, adjective from *Ascra*, in Bœotia, birthplace of the Greek poet of husbandry, Hesiod.
[2] Son of Priam, namely Paris.
[3] Sister.

2. Translate into Latin :—

(1) If I had captured the city, I should now be enjoying honour.

(2) Never accuse a man until you know that he is guilty.

(3) Whenever I sail to Syracuse, he meets me at the harbour.

(4) The centurion urged his soldiers not to give way to the enemy.

(5) He often warned me that the way was dangerous.

(6) Do you not think it is better to live than to die ?

(7) I hope that the enemy will be defeated and our men will soon return home.   (21)

3.—(a) Give an English synonym, derived from Latin, for each of the following words of English origin :— lonely, scorn (*noun*), hide (*verb*), earthly, light (*verb*), fit (*adjective*), greenery, empty (*adjective*), eastern, slavery.   (5)

(b) Distinguish between :—

> ne and ut non followed by the subjunctive,
> interdum and interim, quotidie and in dies,
> vetus and antiquus. (4)

LATIN

HIGHER GRADE—(FIRST PAPER)

Thursday, 25th March—10 A.M. to 12 NOON

The value attached to each question is shown in brackets.

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

Translate the following passages into English :—

1. *When it was proposed to repeal the Lex Oppia, which had introduced restrictions on luxury among women, the Roman matrons supported the proposal with enthusiasm.*

Inter bellorum magnorum aut vixdum finitorum aut imminentium curas intercessit res parva dictu, sed quae studiis in magnum certamen excesserit. M. Fundanius et L. Valerius tribuni plebis ad plebem tulerunt de Oppia lege abroganda. Tulerat eam C. Oppius Q. Fabio Ti. Sempronio consulibus, in medio ardore Punici belli, ne qua mulier plus semuncia[1] auri haberet, neu vestimento versicolori uteretur, neu iuncto vehiculo in urbe oppidove aut propius inde mille passibus, nisi sacrorum publicorum causa, veheretur. M. et P. Iunii Bruti, tribuni plebis, legem tuebantur nec eam se abrogari passuros aiebant; ad suadendum dissuadendumque multi nobiles prodibant; Capitolium turba hominum faventium adversantiumque legi complebatur. Matronae nulla nec auctoritate nec verecundia nec imperio virorum contineri limine poterant, omnes vias urbis aditusque in forum obsidebant, viros descendentes ad forum orantes, ut, florente re publica, crescente in dies privata omnium fortuna, matronis quoque pristinum ornatum reddi paterentur. (25)

([1]) a half-ounce

2. *On his return from exile, Cicero expresses his gratitude to those who had helped to bring it about.*

Vobis vero, patres conscripti, singulis et egi et agam gratias; universis egi initio, quantum potui, satis ornate agere nullo modo possum. Et quamquam sunt erga me praecipua merita multorum, quae silere nullo modo possum, tamen huius temporis ac timoris mei non est conari commemorare beneficia erga me singulorum; nam difficile est non aliquem, nefas quemquam praeterire. Ego vos universos, patres conscripti, deorum numero colere debeo. Sed, ut in ipsis dis immortalibus non semper eosdem atque alias alios solemus et venerari et precari, sic in hominibus de me divinitus meritis omnis erit aetas mihi ad eorum erga me merita praedicanda atque recolenda.[1] Hodierno autem die nominatim a me magistratibus statui gratias esse agendas, et de privatis uni, qui pro salute mea municipia coloniasque adisset, populum Romanum supplex obsecrasset, sententiam dixisset eam, quam vos secuti mihi dignitatem meam reddidistis.   (**30**)

[1] *recolere,* recall to mind, reflect upon.

3. *The aged King Evander had sent his young son Pallas to assist Aeneas in the war against the Latins. Pallas is killed by Turnus, and as Aeneas looks on his dead body he bewails his untimely death.*

" Tene," inquit, " miserande puer, cum laeta veniret,
invidit Fortuna mihi, ne regna videres
nostra neque ad sedes victor veherere paternas ?
Non haec Evandro de te promissa parenti
discedens dederam, cum me complexus euntem
mitteret in magnum imperium metuensque moneret
acres esse viros, cum dura proelia gente.
Et nunc ille quidem spe multum captus inani
fors[1] et vota facit cumulatque altaria donis :
nos iuvenem exanimum et nil iam caelestibus ullis
debentem vano maesti comitamur honore.
Infelix, nati funus crudele videbis !
Hi nostri reditus exspectatique triumphi,
haec mea magna fides ? . At non, Evandre, pudendis
vulneribus pulsum aspicies nec sospite[2] dirum
optabis nato funus pater. Hei mihi, quantum
praesidium Ausonia et quantum tu perdis, Iule ! " (**25**)

[1] translate ' perchance.'
[2] *sospes* = ' safe ' (i.e. by cowardly flight).

LATIN

HIGHER GRADE—(SECOND PAPER)

Thursday, 25th March—1.30 P.M. to 3.30 P.M.

The value attached to each question is shown in brackets.

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

1. Translate into Latin prose :—

It was then Alexander, discouraged at so vigorous a defence, debated seriously, whether it would not be proper for him to raise the siege and go against Egypt; for, after having overrun Asia with prodigious rapidity, he found his progress unhappily retarded; and lost, before a single city, the opportunity of executing a great many projects of infinitely greater importance. On the other side, he considered that it would be a great blemish to his reputation, which had done him greater service than his arms, should he leave Tyre behind him, and thereby prove to the world that he was not invincible. He therefore resolved to make a last effort with a great number of ships, which he manned with the flower of his army. Accordingly, a second naval engagement was fought, in which the Tyrians, after fighting with intrepidity, were obliged to draw off their whole fleet towards the city. The king pursued their rear very close, but was not able to enter the harbour, being repulsed by arrows shot from the walls.   (**40**)

2. Translate into Latin :—

(1) He never undertook a task without performing it in as short a time as possible.

(2) You ought to have prevented the enemy from gaining possession of the bridge.

(3) Alike at home and in the field Caesar showed himself a man of great talent.

(4) Do not forget that you may reach the city by forced marches in a day or two.

(5) What was I to do ? I had no money and no friend in whose house to take refuge. (**20**)

3. Write very brief notes on *four* of the following :—
pomoerium, Colosseum, lacus Curtius, consul designatus, comitia curiata, a.d. iiii Non. Febr., paludamentum, satura.   (4)

4. Discuss *one* of the following :—Pyrrhus in Italy ; the third Punic War ; the career of Gaius Gracchus ; Sulla's military exploits ; Caesar's conquest of Gaul ; the lyric poetry of Horace.
                                                (6)

GREEK

LOWER GRADE

Tuesday, 30th March—10 A.M. to 12.30 P.M.

The values attached to the questions are shown in brackets.

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

1. Translate into English :—

   (a) *Cyrus sympathises with Pantheia, the widow of Abradates, who has been killed fighting against the Egyptians.*

Ἐπεὶ δὲ εἶδε τὴν γυναῖκα χαμαὶ καθημένην καὶ τὸν νεκρὸν κείμενον, ἐδάκρυσέ τε ἐπὶ τῷ πάθει καὶ εἶπε· Φεῦ, ὦ ἀγαθὴ καὶ πιστὴ ψυχή, οἴχῃ δὴ ἀπολιπὼν ἡμᾶς ; καὶ ἅμα ἐδεξιοῦτο[1] αὐτὸν καὶ ἡ χεὶρ τοῦ νεκροῦ ἐπηκολούθησεν· ἀπεκέκοπτο γὰρ κοπίδι[2] ὑπὸ τῶν Αἰγυπτίων· ὁ δὲ ἰδὼν πολὺ ἔτι μᾶλλον ἤλγησε· καὶ ἡ γυνὴ ἀνωδύρατο, καὶ δεξαμένη δὴ παρὰ τοῦ Κύρου ἐφίλησέ τε τὴν χεῖρα καὶ πάλιν ὡς οἷόν τ᾽ ἦν προσήρμοσε,[3] καὶ εἶπεν· οἶδ᾽ ὅτι δι᾽ ἐμὲ οὐχ ἥκιστα ἔπαθεν, ἴσως δὲ καὶ διὰ σέ, ὦ Κῦρε, οὐδὲν ἧττον. ἐγώ τε γὰρ ἡ μώρα[4] πολλὰ διεκελευόμην αὐτῷ οὕτω ποιεῖν, ὅπως σοι φίλος ἄξιος γενήσοιτο· αὐτός τε οἶδ᾽ ὅτι οὗτος οὐ τοῦτο ἐνενόει ὅ τι πείσοιτο, ἀλλὰ τί ἄν σοι ποιήσας χαρίσαιτο. καὶ γὰρ οὖν, ἔφη, αὐτὸς μὲν ἀμέμπτως τετελεύτηκεν, ἐγὼ δ᾽ ἡ παρακελευομένη ζῶσα παρακάθημαι. καὶ ὁ Κῦρος ἐφθέγξατο· Ἴσθι ὅτι οὐδὲ τὰ ἄλλα ἄτιμος ἔσται, ἀλλὰ καὶ τὸ μνῆμα πολλοὶ χώσουσιν[5] ἀξίως ἡμῶν καὶ ἐπισφαγήσεται[6] αὐτῷ ὅσα εἰκὸς ἀνδρὶ ἀγαθῷ.   (25)

[1] = took by the hand.
[2] = bill-hook, kind of scimitar.
[3] προσαρμόττειν = fit on.
[4] = foolish.
[5] τὸ μνῆμα χώσουσιν = will build his tomb.
[6] ἐπισφάττειν = sacrifice, immolate on.

(b) *Silenus states his views on Geography.   There is only one continent and it lies beyond the ocean.*

Περιηγεῖταί[1] τινα Θεόπομπος συνουσίαν Μίδου καὶ Σειληνοῦ· πολλὰ μὲν οὖν καὶ ἄλλα ἀλλήλοις διελέχθησαν, καὶ πρὸς τούτοις ὁ Σειληνὸς ἔλεγε· τὴν μὲν Εὐρώπην, καὶ τὴν Ἀσίαν, καὶ τὴν Λιβύην νήσους εἶναι, ἃς περιρρεῖν κύκλῳ τὸν Ὠκεανόν. ἤπειρον δὲ μόνην εἶναι ἐκείνην τὴν ἔξω τούτου τοῦ κόσμου. καὶ τὸ μὲν μέγεθος αὐτῆς ἄπειρον εἶναι· τρέφειν δὲ τά τ᾽ ἄλλα ζῷα μεγάλα, καὶ τοὺς ἀνθρώπους τῶν ἐνταῦθα διπλασίονας τὸ μέγεθος. καὶ χρόνον ζῆν αὐτούς, οὐχ ὅσον ἡμεῖς, ἀλλὰ καὶ ἐκεῖνον διπλοῦν· καὶ πολλὰς μὲν εἶναι καὶ μεγάλας πόλεις, καὶ βίων ἰδιότητας, καὶ νόμους αὐτοῖς τετάχθαι ἐναντίως κειμένους τοῖς παρ᾽ ἡμῖν νομιζομένοις. δύο δὲ εἶναι πόλεις μεγέθει μεγίστας, οὐδὲν δὲ ἀλλήλαις ἐοικέναι· καὶ τὴν μὲν ὀνομάζεσθαι Μάχιμον, τὴν δὲ Εὐσεβῆ. τοὺς μὲν οὖν Εὐσεβεῖς ἐν εἰρήνῃ τε διάγειν καὶ πλούτῳ καὶ λαμβάνειν τοὺς καρποὺς ἐκ τῆς γῆς ἄνευ ἀρότρων καὶ βοῶν· γεωργεῖν δὲ καὶ σπείρειν οὐδὲν αὐτοὺς δεῖν.   **(25)**

[1] = recounts.

2. Translate into Greek :—

   (1) Did the generals praise all the soldiers or
       blame them ?

   (2) We know that those who talk most are not
       always the wisest.

   (3) He promised to give the soldier gold if he told
       him the truth.

   (4) The enemy were all killed, although they might
       have escaped.

   (5) It was determined to make peace on these
       conditions.

   (6) Though I am sixty years old, I never yet
       entered a theatre.

   (7) He bade the citizens build a new wall so that
       they might not be surrounded.[1]   **(21)**

[1] κυκλόω.

3. (a) Give the derivation of the following words :—
hydrophobia, metallurgy, polypus, telephone, meteoric, monogamy, panorama, astrology, tragedy, system.   **(5)**

   (b) Distinguish between εὖ ποιεῖν and εὖ πάσχειν, and between ἐπὶ τοῦ Κύρου and ἐπὶ τῷ Κύρῳ, and give the meaning, from their derivations, of μεγαλοψυχία and καλοκάγαθός.   **(4)**

GREEK

HIGHER GRADE—(FIRST PAPER)

Tuesday, 30th March—10 A.M. to 12 NOON

The value attached to each question is shown in brackets.

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

Translate into English :—

1.   *The Advantages and the Disadvantages of War.*

Κατηγοροῦσι δέ τινες τοῦ πολέμου καὶ διεξέρχονται τὴν ἀπιστίαν αὐτοῦ καὶ θαυμάζουσιν, εἴ τινες οὕτω χαλεπῷ καὶ παραβόλῳ[1] πράγματι πιστεύειν ἀξιοῦσιν. Ἐγὼ δὲ πολλοὺς μὲν οἶδα διὰ τὸν πόλεμον μεγάλην εὐδαιμονίαν κτησαμένους, πολλοὺς δὲ τῆς ὑπαρχούσης ἀποστερηθέντας· οὐδὲν γὰρ τῶν τοιούτων ἐστὶν ἀποτόμως[2] οὔτε κακὸν οὔτ' ἀγαθόν, ἀλλ' ὡς ἂν χρήσηταί τις καὶ τοῖς πράγμασι καὶ τοῖς καιροῖς, οὕτως ἀνάγκη καὶ τὸ τέλος ἐκβαίνειν ἐξ αὐτῶν. χρὴ δὲ τοὺς μὲν εὖ πράττοντας τῆς εἰρήνης ἐπιθυμεῖν· ἐν ταύτῃ γὰρ τῇ καταστάσει[3] πλεῖστον ἄν τις χρόνον τὰ παρόντα διαφυλάξειεν· τοὺς δὲ δυστυχοῦντας τῷ πολέμῳ προσέχειν τὸν νοῦν· ἐκ γὰρ τῆς ταραχῆς θᾶττον ἂν μεταβολῆς τύχοιεν. ὧν ἡμεῖς δέδοικα μὴ τἀναντία πράττοντες φανῶμεν· ὅτε μὲν γὰρ ἐξῆν ἡμῖν τρυφᾶν,[4] πλείους τοὺς πολέμους ἐποιούμεθα τοῦ δέοντος, ἐπειδὴ δ' εἰς ἀνάγκην καθέσταμεν ὥστε κινδυνεύειν, ἡσυχίας ἐπιθυμοῦμεν καὶ περὶ ἀσφαλείας βουλευόμεθα.   **(30)**

[1] = hazardous.   [2] = absolutely.   [3] = state, condition.   [4] = live in luxury.

2. *Conversation between Cyrus and Croesus : ' Enough*
is better than too much '.

Τῇδέ γε μέντοι διαφέρειν μοι δοκῶ τῶν πλείστων ὅτι
οἱ μὲν ἐπειδὰν τῶν ἀρκούντων περιττὰ[1] κτήσωνται, τὰ μὲν
αὐτῶν κατορύττουσι, τὰ δὲ κατασήπουσι,[2] τὰ δὲ ἀριθ-
μοῦντες καὶ μετροῦντες καὶ ἱστάντες[3] καὶ φυλάττοντες
πράγματα ἔχουσι, καὶ ὅμως ἔνδον ἔχοντες τοσαῦτα οὔτε
ἐσθίουσι πλείω ἢ δύνανται φέρειν, διαρραγεῖεν γὰρ ἄν,
οὔτ' ἀμφιέννυνται πλείω ἢ δύνανται φέρειν, ἀποπνιγεῖεν
γὰρ ἄν, ἀλλὰ τὰ περιττὰ χρήματα πράγματα ἔχουσιν·
ἐγὼ δ' ὑπηρετῶ μὲν τοῖς θεοῖς καὶ ὀρέγομαι ἀεὶ πλειόνων·
ἐπειδὰν δὲ κτήσωμαι, ἃ ἂν ἴδω περιττὰ ὄντα τῶν ἐμοὶ
ἀρκούντων, τούτοις τάς τ' ἐνδείας τῶν φίλων ἐξακοῦμαι,[4]
καὶ πλουτίζων καὶ εὐεργετῶν ἀνθρώπους εὔνοιαν ἐξ αὐτῶν
κτῶμαι καὶ φιλίαν, καὶ ἐκ τούτων καρποῦμαι ἀσφάλειαν
καὶ εὔκλειαν· ἃ οὔτε κατασήπεται οὔτε λυμαίνεται, ἀλλὰ
ἡ εὔκλεια, ὅσῳ ἂν πλείων ᾖ, τοσούτῳ καὶ μείζων καὶ
καλλίων καὶ κουφοτέρα φέρειν γίγνεται, πολλάκις δὲ καὶ
τοὺς φέροντας αὐτὴν κουφοτέρους παρέχεται. **(30)**

[1] = in excess.   [2] = allow to rot.   [3] = weighing.
[4] = cure, make up for.

3. Either (a) or (b)

(a) *Telemachus gives his mother an account of his journey.*

Τὴν δ' αὖ Τηλέμαχος πεπνυμένος ἀντίον ηὔδα·
"τοιγὰρ ἐγώ τοι, μῆτερ, ἀληθείην καταλέξω.
ᾠχόμεθ' ἔς τε Πύλον καὶ Νέστορα, ποιμένα λαῶν,
δεξάμενος δέ με κεῖνος ἐν ὑψηλοῖσι δόμοισιν
ἐνδυκέως[1] ἐφίλει, ὡς εἴ τε πατὴρ ἑὸν υἱὸν
ἐλθόντα χρόνιον νέον ἄλλοθεν· ὣς ἐμὲ κεῖνος
ἐνδυκέως ἐκόμιζε σὺν υἱάσι κυδαλίμοισιν.
αὐτὰρ Ὀδυσσῆος ταλασίφρονος οὔ ποτ' ἔφασκε,
ζωοῦ οὐδὲ θανόντος, ἐπιχθονίων τευ ἀκοῦσαι,
ἀλλά μ' ἐς Ἀτρείδην, δουρικλειτὸν Μενέλαον,
ἵπποισι προὔπεμψε καὶ ἅρμασι κολλητοῖσιν.
ἔνθ' ἴδον Ἀργείην Ἑλένην, ἧς εἵνεκα πολλὰ
Ἀργεῖοι Τρῶές τε θεῶν ἰότητι μόγησαν.

[1] = heartily.

εἴρετο δ᾽ αὐτίκ᾽ ἔπειτα βοὴν ἀγαθὸς Μενέλαος
ὅττευ χρηίζων ἱκόμην Λακεδαίμονα δῖαν·
αὐτὰρ ἐγὼ τῷ πᾶσαν ἀληθείην κατέλεξα·
καὶ τότε δή μ᾽ ἐπέεσιν ἀμειβόμενος προσέειπεν·
'ὢ πόποι, ἦ μάλα δὴ κρατερόφρονος ἀνδρὸς ἐν εὐνῇ
ἤθελον εὐνηθῆναι, ἀνάλκιδες αὐτοὶ ἐόντες᾽."   (25)

(b)   Menelaos addresses the house of his brother
                              Agamemnon.

ὦ δῶμα, τῇ μέν σ᾽ ἡδέως προσδέρκομαι
Τροίαθεν ἐλθών, τῇ δ᾽ ἰδὼν καταστένω·
κύκλῳ γὰρ εἱλιχθεῖσαν ἀθλίοις κακοῖς
οὐπώποτ᾽ ἄλλην μᾶλλον εἶδον ἑστίαν.
Ἀγαμέμνονος μὲν γὰρ τύχας ἠπιστάμην
Μαλέᾳ προσίσχων πρῷραν· ἐκ δὲ κυμάτων
ὁ ναυτίλοισι μάντις ἐξήγγειλέ μοι
Νηρέως προφήτης Γλαῦκος ἀψευδὴς θεός,
ὅς μοι τόδ᾽ εἶπεν ἐμφανῶς κατασταθείς·[1]
Μενέλαε, κεῖται σὸς κασίγνητος θανών·
δακρύων δ᾽ ἔπλησεν ἐμέ τε καὶ ναύτας ἐμοὺς
πολλῶν. ἐπεὶ δὲ Ναυπλίας ψαύω χθονός,
δοκῶν Ὀρέστην παῖδα τὸν Ἀγαμέμνονος
φίλαισι χερσὶ περιβαλεῖν καὶ μητέρα,
ὡς εὐτυχοῦντας, ἔκλυον ἀλιτύπων[2] τινὸς
τῆς Τυνδαρείας θυγατρὸς ἀνόσιον φόνον.
καὶ νῦν ὅπου ᾽στὶν εἴπατ᾽, ὦ νεάνιδες,
Ἀγαμέμνονος παῖς, ὃς τὰ δείν᾽ ἔτλη κακά.
βρέφος γὰρ ἦν τότ᾽ ἐν Κλυταιμνήστρας χεροῖν,
ὅτ᾽ ἐξέλειπον μέλαθρον εἰς Τροίαν ἰών,
ὥστ᾽ οὐκ ἂν αὐτὸν γνωρίσαιμ᾽ ἂν εἰσιδών.   (25)

[1] κατασταθείς = standing.   [2] ἀλίτυπος = seaman.

GREEK

HIGHER GRADE—(SECOND PAPER)

Tuesday, 30th March—2 P.M. to 4 P.M.

The value attached to each question is shown in brackets.

**N.B.—Write legibly and neatly. Marks
will be deducted for bad writing.**

Translate into Greek :—

1. Themistocles had fled to Admetus, king of the Molossi, and had met with a gracious reception from him; but the Athenians and Lacedaemonians would not suffer him to live in peace, and required that prince to deliver him up, threatening, in case of refusal, to carry their arms into his country. Admetus, who was unwilling to draw such formidable enemies upon himself, and much more to deliver up the man who had fled to him for refuge, informed him of the great danger to which he was exposed, and advised him to flee. Themistocles went by land to Pydna, a city of Macedonia, and there embarked on board a merchant ship, which was sailing to Ionia. None of the passengers knew him. A storm carried this vessel near the island of Naxos, then besieged by the Athenians.   (40)

2.—(1) The Athenians prepared for the fight as if they were certain to conquer the enemy easily.

(2) If he had been wealthy he would have given more to the poor.

(3) Nothing can prevent the enemy invading our country.

(4) Do not shut the door before your brother comes in.

(5) He went out of the city by night and reached home at dawn.   (15)

3. Give some account of *one* of the following :—

The reign of Pisistratus; the career of Cimon; the causes of the Peloponnesian War; the structure of the Greek theatre; the chorus in Tragedy.   (6)

4. Write brief notes on *four* of the following :—

ἔφοροι, ἀγορά, δικαστήριον, πρόεδρος, συμμορία, γλαῦκ' Ἀθήναζε, ἔεδνα, θέμιστες.   (4)

FRENCH

LOWER GRADE

Wednesday, 24th March—10 A.M. to 12.30 P.M.

The value attached to each question is shown in brackets after the question.

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

1. Translate into English :—

(*a*) La Virginie reçut la première colonie anglaise. Les émigrants y arrivèrent en 1607. L'Europe à cette époque était encore singulièrement préoccupée de l'idée que les mines d'or et d'argent font la richesse des peuples : idée funeste qui a plus appauvri les nations européennes qui s'y sont livrées, et détruit plus d'hommes en Amérique que la guerre et toutes les mauvaises lois ensemble. Ce fut donc des chercheurs d'or que l'on envoya en Virginie, gens sans ressources et sans conduite, dont l'esprit inquiet et turbulent troubla l'enfance de la colonie et en rendit les progrès incertains. Ensuite arrivèrent les industriels et les cultivateurs, race plus morale et plus tranquille, mais qui ne s'élevait presque en aucun point au-dessus du niveau des classes inférieures d'Angleterre. Aucune noble pensée ne présida à la fondation des nouveaux établissements. A peine la colonie était-elle créée qu'on y introduisait l'esclavage ; ce fut là le fait capital qui devait exercer une immense influence sur le caractère, les lois et l'avenir tout entier du Sud.

L'esclavage déshonore le travail ; il introduit l'oisiveté dans la société, et avec elle l'ignorance et l'orgueil, la pauvreté et le luxe. Il énerve les forces de l'intelligence et endort l'activité humaine. L'influence de l'esclavage, combinée avec le caractère anglais, explique les mœurs et l'état social du Sud. **(25)**

(*b*) *Admiral Collingwood's Advice to a French Midshipman who is a prisoner on board his Flagship.*

Après quelques minutes, l'amiral revint à moi. "J'ai à vous dire," reprit-il d'un ton plus ferme, "que nous ne tarderons pas à nous rapprocher de la France. Je suis une éternelle sentinelle placée devant vos ports. Je n'ai qu'un mot à ajouter, et j'ai voulu que ce fût seul à seul : souvenez-vous que vous êtes ici sur votre parole, et que je ne vous surveillerai point ; mais, mon enfant, plus le temps passera, plus l'épreuve sera forte. Vous êtes bien jeune encore ; si la tentation devient trop grande pour que votre courage y résiste, venez me trouver quand vous craindrez de succomber, et ne vous cachez pas de moi ; je vous sauverai d'une action déshonorante que, par malheur pour leurs noms, quelques officiers ont commise. Souvenez-vous qu'il est permis de rompre une chaîne de forçat[1], si l'on peut, mais non une parole d'honneur." Et il me quitta sur ces derniers mots en me serrant la main. **(25)**

[1] convict.

2. Translate into French :—

There are some people who work too hard. Naturally there are others who are lazy and don't do enough. I fear you are among the first. You work all the time. Why don't you rest occasionally? Go to the country, walk, sleep, eat. Or go abroad and enjoy yourself. Go to bed early, get up late. If you think of going to France, let me know as soon as possible and I will try to go with you. I should like very well to pass a week or two there this spring. Our holidays begin on the 15th.

(15)

3. Translate into French :—

(1) The Frenchman tried to tell me what he had seen but I could not understand him.

(2) You must not drink cold water when you are very hot.

(3) I should like to know why he has not arrived. He promised to come before noon.

(4) When I wakened, at six in the morning, I had a headache.

(5) Where were you born, how old are you, what is your name? **(15)**

FRENCH

HIGHER GRADE—(FIRST PAPER)

Wednesday, 24th March—10 A.M. to 12 NOON

The value attached to each question is shown in brackets after the question.

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

Translate carefully, with due attention to English form and expression :—

1.   *Follow Nature as your Guide.*

Je resterais toujours aussi près de la nature qu'il serait possible, pour flatter les sens que j'ai reçus d'elle,

bien sûr que plus elle mettrait du sien dans mes jouis-
sances, plus j'y trouverais de réalité. Si je voulais
goûter un mets du bout du monde, j'irais plutôt l'y
chercher, que de l'en faire venir ; car les mets les plus
exquis manquent toujours d'un assaisonnement qu'on
n'apporte pas avec eux, et qu'aucun cuisinier ne leur
donne, l'air du climat qui les a produits. Par la même
raison je n'imiterais pas ceux qui, ne se trouvant bien
qu'où ils ne sont point, mettent toujours les saisons en
contradiction avec elles-mêmes ; qui vont en Italie
en hiver pour y chercher l'été, sans songer qu'en croyant
fuir la rigueur des saisons ils la trouvent dans les lieux
où l'on n'a point appris à s'en garantir.   **(25)**

2.   *The Poet's Adieu to his Sister.*

Il n'est point ici-bas d'heure si fortunée
Qui ne doive finir et n'ait son lendemain ;
C'est la loi de ce monde, et notre destinée
Ne veut rien d'éternel dans le bonheur humain ;

Notre plus longue joie est vite terminée ;
Ce n'est qu'un chant d'oiseau dans l'arbre du chemin ;
L'adieu, le triste adieu vient clore la journée,
Sans qu'on ait eu le temps de se prendre la main.

Mais l'absence n'est rien quand l'amitié demeure,
Et sur les murs détruits de la frêle demeure
Où nous avons rêvé notre songe d'un jour,

La fleur du souvenir s'entr'ouvre épanouie,
Et son parfum divin embaume notre vie
De l'instant du départ à celui du retour.

                                        (15)

3. *The Emperor Titus is in love with Berenice, an Eastern*
   queen, and wishes to marry her. His confidant
   Paulin has been pointing out to him that the marriage
   would offend Roman sentiment and that Berenice
   could not tax him with ingratitude—her dominions
   had been most generously extended by Titus.

Titus.

Faibles amusements d'une douleur si grande !
Je connais Bérénice, et ne sais que trop bien
Que son cœur n'a jamais demandé que le mien.

Je l'aimai; je lui plus.   Depuis cette journée,
(Dois-je dire funeste, hélas ! ou fortunée ?)
Sans avoir, en aimant, d'objet que son amour,
Étrangère dans Rome, inconnue à la eour,
Elle passe ses jours, Paulin, sans rien prétendre
Que quelque heure à me voir, et le reste à m'attendre.
Encor, si quelquefois un peu moins assidu
Je passe le moment où je suis attendu,
Je la revois bientôt de pleurs toute trempée :
Ma main à les sécher est longtemps occupée...
N'y songeons plus. Allons, cher Paulin : plus j'y pense,
Plus ie sens chanceler ma cruelle constance

ERRATUM.

Page 31, thirteenth line, " Quel le " should read "Quelle."

(25)

FRENCH

Higher Grade—(Second Paper)

Wednesday, 24th March—2.15 p.m. to 4.15 p.m.

*The value attached to each question is shown in brackets
after the question.*

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

1. Translate into French :—

A giant once offered St. Laurence to build a church
for him if he would give him the sun and the moon
or his two eyes or find out his name. St. Laurence
accepted the offer and by good luck managed to discover
that the giant's name was Finn. He at once returned
to Lund, where he found that the church was completely
finished. Faithful to his promise, he went to the cliffs
where they had first met. The giant was sitting on the
sand and at the sight of the priest he rose and asked
him if he was pleased with his work. " So pleased,"
Laurence answered, " that I cannot thank you enough

for it." " You remember our bargain," said the giant.
" Yes. But I can't give you the sun and moon."
" Then give me your two eyes," said the giant. " You
can't surely be so cruel as to take my eyes," said Laurence,
" you are joking." " I am very far from joking,"
replied the giant. " Be quick and don't keep me waiting."
" Now," said Laurence, " there is no need to be angry;
you shall have just what I promised and nothing more.
Good bye, Finn." When he heard these words the
giant staggered backwards and fell into the sea.

(**40**)

2. Translate into French :—

(1) As there was no ink in the ink-bottle, I had
to use a pencil.

(2) When we were at school we were told never to
translate anything before thinking.

(3) It's too late to go to the concert. It must have
begun long ago.

(4) You might have asked me to buy the book yester-
day, when I was in Paris.

(5) But for you, I should have been killed. I had a
narrow escape. (**10**)

3. Write in French a continuous story (about one and
a half times as long as the answer to Question 1)
based on the following summary, and complete
it in your own way :—

Stranger came to live in a village—some of village
people ready to cheat him. Stranger ordered wood.
Merchant made him pay three times value. Merchant
went to inn to dine. Boasted how he had cheated
stranger. Honest landlord blamed him. Merchant re-
plied that wood was his own and that he could charge
as much as he liked. Merchant called for bill. Landlord
charged him price he had got for wood. Merchant
accused him of cheating.

(*Complete the story in your own way.*)

(**25**)

FRENCH

HIGHER GRADE—(SECOND PAPER)

Wednesday, 24th March—1.30 P.M. to 2 P.M.

This paper must not be seen by any Candidate.

To be read out by the Teacher at 1.30 P.M. in the presence of the Supervising Officer.

To be written by the Candidates on the separate sheets provided, which must be collected before the Second French Paper is distributed.

DIRECTIONS FOR TEACHER.

1. *Read the passage aloud distinctly and deliberately, but not slowly, the object being to bring out the meaning of the whole as clearly as possible. Observe the* liaisons *as marked.*

2. *Inform the candidates that they may not ask for the repetition of any word or phrase.*

3. *Dictate the passage slowly, repeating each group of words (as indicated by vertical lines) twice over, and pronouncing every word very distinctly. The punctuation should be indicated thus :—(.) ' un point,' (,) ' virgule.'*

4. *After an interval of five minutes read the text over again in the same manner as on the first occasion, but do not on any account repeat separate words at the request of individual candidates.*

DICTÉE.

Celui qui veut faire | un‿emploi sérieux de la vie | doit toujours‿agir | comme s'il avait‿à vivre longuement, | et se régler | comme s'il lui fallait mourir | prochainement. | La première de ces réflexions | m'a déterminé | à entreprendre un travail | qui demandait, | quand je le commençai, | plus d'années‿et de santé | qu'il n'en‿est d'ordinaire accordé. | La seconde | m'engage à informer |

ceux qui prennent quelque intérêt | à mon‿œuvre, |
qu'elle est complètement terminée | en manuscrit | de-
puis‿un‿an, | et qu'en cas de maladie ou de mort |
l'achèvement, | qui n'est plus bien‿éloigné, | ne sera
point‿arrêté. | J'ajouterai | que je serais‿arrivé moins
tôt | à ce terme | si une collaboration | aussi gracieuse
que dévouée | ne l'avait notablement‿avancé.

(10)

GERMAN

LOWER GRADE

Friday, 26th March—10 A.M. to 12.30 P.M.

*Marks will be deducted for failure to use the German script
in the answer to Question 2.*

*The value attached to each question is shown in brackets
after the question.*

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

1. Translate into English :—

(a)   *The Pond-Fairy.*

Es war einmal ein Müller, der führte mit seiner Frau ein
vergnügtes Leben. Sie hatten Geld und Gut und ihr Wohl=
stand nahm von Jahr zu Jahr noch zu. Aber Unglück kommt
über Nacht; wie ihr Reichtum gewachsen war, so schwand er
von Jahr zu Jahr wieder hin, und zuletzt konnte der Müller
kaum noch die Mühle, in der er saß, sein Eigentum nennen.
Er war voll Kummer, und wenn er sich nach der Arbeit des
Tages niederlegte, so fand er keine Ruhe, sondern wälzte sich
voll Sorgen in seinem Bett. Eines Morgens stand er schon
vor Tagesanbruch auf, ging hinaus ins Freie und dachte, es
sollte ihm leichter ums Herz werden. Als er über den Mühl=
damm dahin schritt, brach eben der erste Sonnenstrahl hervor,
und er hörte in dem Teiche etwas rauschen. Er wendete sich
um und erblickte ein schönes Weib, das sich langsam aus dem

Waffer erhob. Ihre langen Haare, die sie über den Schultern mit ihren zarten Händen gefaßt hatte, flossen an beiden Seiten herab und bedeckten ihren weißen Leib. Er sah wohl, daß es die Nixe des Teiches war und wußte vor Furcht nicht, ob er davongehen oder stehen bleiben sollte. Aber die Nixe ließ ihre sanfte Stimme hören, nannte ihn beim Namen und fragte, warum er so traurig wäre. Der Müller war anfangs ver= stummt; als er sie aber so freundlich sprechen hörte, faßte er sich ein Herz und erzählte ihr, daß er sonst in Glück und Reichtum gelebt hätte, aber jetzt so arm wäre, daß er sich nicht zu raten wüßte. „Sei ruhig,” antwortete die Nixe, „ich will dich reicher und glücklicher machen als du je gewesen bist, nur mußt du mir versprechen, daß du mir geben willst, was eben in deinem Hause geboren worden ist.” (25)

(b) *Letter of Queen Luise to her Father.*

Noch immer sind meine Briefe hier, weil nicht nur Wind sondern der Sturm alles Auslaufen der Schiffe unmöglich macht. Ich schicke Ihnen einen sicheren Menschen und fahre deshalb fort Ihnen Nachricht von hier mitzuteilen. Die Armee ist genötigt gewesen sich immer mehr und mehr zurückzuziehen, und es ist von russischer Seite ein Waffenstillstand auf vier Wochen abgeschlossen worden. Oftmals klärt sich der Himmel auf, und die Sonne scheint, wenn man trübes Wetter vermutet; es kann auch hier sein. Niemand wünscht es so wie ich; doch Wünsche sind nur Wünsche und keine festen Grundlagen. Ich berufe mich demnach auf meinen Brief, Sie kennen mich ganz, wenn Sie ihn gelesen haben, bester Vater. Nie, nie werde ich ganz unglücklich sein; nur hoffen kann ich nicht mehr. Wer so wie ich von seinem Himmel heruntergestürzt ist, kann nicht mehr hoffen. Kommt das Gute, o! kein Mensch kann es dankbarer empfinden, als ich es empfinden werde; aber hoffen kann ich es nicht mehr. Kommt das Unglück, so wird es mich auf Augenblicke in Verwunderung setzen, aber beugen kann es mich nie, sobald es nicht verdient ist. Nur Unrecht unsererseits würde mich zu Grabe bringen; aber ich fürchte nichts, denn wir stehen hoch.

Ich bin zu Ihren Füßen, ganz die Ihrige,

Luise. (25)

2. Translate into German :—

　　(1) Where are you going? I am going to school
　　　　as usual.

　　(2) This letter has not been well written; you
　　　　must write it again.

　　(3) Some birds build prettier nests than others.

　　(4) Let us go to the window to see the soldiers.

　　(5) My old friend paid me a visit yesterday and he
　　　　was looking well.

　　(6) I shall be glad when the holidays come.

　　(7) When I was in Germany I saw many old castles.

　　(8) I remember the story I was told last year.

　　(9) I wonder if you could wait for me?

　(10) Had you been here you might have helped me.

　　　　　　　　　　　　　　　　　　　　(30)

GERMAN

HIGHER GRADE—(FIRST PAPER)

Friday, 26th March—10 A.M. to 12 NOON

*The value attached to each question is shown in
brackets after the question.*

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

Translate carefully, with due attention to English
form and expression :—

The Retreat from Moscow.

Es war nach dem Neujahr 1813. Das scheidende Jahr
hatte dem neuen einen strengen Winter als Erbschaft zurück-
gelassen. In Haufen standen die Leute vor dem Posthause einer
kleinen Stadt. Glücklich, wer zuerst das Zeitungsblatt nach
Hause trug. Kurz und vorsichtig war der Bericht über die
Ereignisse dieser Tage; denn in Berlin saß der französische
Militärgouverneur und bewachte jede Äußerung der eingeschüch-
terten Presse. Dennoch war längst die Kunde von dem Schicksal
der großen Armee bis in die entlegenste Hütte gedrungen, zuerst
dunkle Gerüchte von Not und Verlust, dann die Nachricht von
einem ungeheueren Brande in Moskau, dann von einer Flucht
durch Eis und Wüsteneien, von Hunger und unsäglichem Elend.

In den ersten Tagen des Jahres fielen die Schneeflocken;
weiß wie ein Leichentuch war die Landschaft. Da bewegte sich

ein langsamer Zug geräuschlos auf der Landstraße zu den ersten Häusern der Vorstadt. Das waren die rückkehrenden Franzosen. Sie waren vor einem Jahre der aufgehenden Sonne zugezogen mit Trompetenklang und Trommelgerassel, in kriegerischem Glanz und empörendem Übermut. Endlos waren die Truppenzüge gewesen; Tag für Tag ohne Aufhören hatte sich die Masse durch die Straßen der Stadt gewälzt; nie hatten die Leute ein so ungeheures Heer gesehen. Die Riesenmacht des Kaisers war tief in die Seele gedrückt, das militärische Schauspiel mit seinem Glanz und seinen Schrecken füllte noch die Phantasie.   (30)

2.   *The Goodwin Sands.*

Das sind die Bänke von Goodwin-Sand,
Sie sind nicht Meer, sie sind nicht Land,
Sie schieben sich, langsam, satt und schwer,
Wie eine Schlange hin und her.

Und die Schiffe, die mit dem Sturm gerungen
Und die schäumende Wut der Wellen bezwungen,
Und die gefahren über die Welt,
Unzertrümmert, unzerschellt,
Sie sehen die Heimat, sie sehen das Ziel.
Da schiebt sich die Schlange unter den Kiel
Und ringelt Schiff und Mannschaft hinab,
Zugleich ihr Tod, zugleich ihr Grab.

Die See ist still, die Ebb' ist nah,
Mastspitzen ragen hier und da,
Und wo sie ragen in die Luft,
Da sind es Kreuze über der Gruft;
Ein Kirchhof ist's, halb Meer halb Land,—
Das sind die Bänke von Goodwin-Sand.   (20)

3.   *The Doctor's Visit.*

Offenburg. Schlafen Sie gut?

Iduna. Ich schlafe recht schwer ein.

Irmgard (ungeduldig). Alle Welt schläft jetzt schwer ein, das macht die Hitze.

Offenburg. Erlauben Sie, es ist immer ein böses Zeichen! (Zu Iduna:) Sie müssen recht viel gehen, um sich zu ermüden. Aber nicht bei der Mittagshitze, in der frischen Abendkühle (mit Bedeutung), etwa gegen sieben Uhr.

Iduna. Ich will es tun, Herr Doktor!

Irmgard (hustet).

Offenburg. Und dann gehen Sie in den Wald hinter dem Parke. Die Waldluft ist sehr erfrischend.

Iduna (mit Einverständnis). Ich werde mich genau nach Ihren Worten richten.

Offenburg (mit Bedeutung). Vernachlässigen Sie meine Ratschläge nicht, es kann viel davon abhangen, daß Sie dieselben befolgen.

Iduna. Verlassen Sie sich darauf, heute Abend Schlag sieben Uhr gehe ich unter die Eichen und Buchen.

Irmgard (hustet). Aber, lieber Doktor, Sie sind eigentlich zu mir gekommen und vernachlässigen mich gänzlich.

Offenburg (setzt sich zu ihr). Verzeihen Sie, mein Fräulein.

Irmgard. Nach meinem Husten haben Sie nicht gefragt.

Offenburg. Ich tue es jetzt, mein Fräulein.

Irmgard. Ich schlafe auch so schwer ein. Meine Gedanken sind abends so aufgeregt, sie lassen mich nicht zum Schlummer kommen.

Offenburg. Können Sie sich dieser Gedanken nicht entschlagen? Oft wirkt eine geistige Aufregung nachteilig auf den Körper. Doch wenn Sie von Krankheit sprechen, ist das zu viel gesagt. Sie haben eine leichte Unpäßlichkeit, weiter nichts.   (20)

GERMAN

HIGHER GRADE—(SECOND PAPER)

Friday, 26th March—2.15 P.M. to 4.15 P.M.

Marks will be deducted for failure to use the German script throughout.

The value attached to each question is shown in brackets after the question.

1. Translate into German :—

(a) It was now near night, and Bruce went boldly into the farmhouse, which was the place of meeting. There he found the mistress, an old true-hearted Scotswoman, sitting alone. Upon seeing a stranger enter, she asked him who and what he was. The king answered that he was a traveller, who was journeying through the country.

"All travellers," answered the good woman, "are welcome here, for the sake of one traveller whom we love."

"And who is that one," said the king, "for whose sake you make all travellers welcome ? "

"It is our rightful king, Robert the Bruce," answered the woman, "who is the lawful lord of this country; and, although he is now pursued and hunted after with hounds and horns, I hope to see him king over all Scotland before I die."

"Since you love him so well, dame," said the king, "know that you see him before you."

"You ! " said the good woman, in great surprise; "and wherefore are you thus alone ?—where are all your men ? "

"I have none with me at this moment," answered Bruce, "and therefore I must travel alone."

"But that shall not be," said the brave old dame, "for I have two stout sons, gallant and trusty men, who shall be your servants until death."   (**35**)

(b) (1) I should like a pound of these cherries. How much are they ?

(2) Drive me to the Tiergarten, please, and then through the principal streets of the town.

(3) You ought to have told me that he had not arrived.

(4) However wealthy a man may be, he should not spend too much.

(5) Though everything possible was done to save the boy's life, it was all in vain.   (**10**)

2. Free Composition. (The answer to this question should be about one and a half times as long as the answer to Question 1.)

Write in German a free composition on one *or* other of the following subjects :—

Either

(*a*) A dog tells the story of his life. He touches upon (i) his first home; (ii) his happy though mischievous youth; (iii) his special experiences (*e.g.*, with cats, postmen, motors); (iv) his sedate old age.

Or

(*b*) One evening before going to bed you have been learning by heart Goethe's poem " Erlkönig." You dream. Relate the dream.   **(25)**

GERMAN

HIGHER GRADE—(SECOND PAPER)

Friday, 26th March—1.30 P.M. to 2 P.M.

This paper must not be seen by any Candidate.

To be read out by the Teacher at 1.30 P.M. in the presence of the Supervising Officer.

To be written by the Candidates on the separate sheets provided, which must be collected before the Second German Paper is distributed.

DIRECTIONS FOR TEACHER.

1. *Read the passage aloud (including the English title) distinctly and deliberately, but not slowly, the object being to bring out the meaning of the whole as clearly as possible.*

2. *Inform the Candidates that they may not ask for the repetition of any word or phrase, and warn them that marks will be deducted for failure to use the German script.*

3. *Dictate the passage slowly, repeating each group of words (as indicated by vertical lines) twice over, and pronouncing every word very distinctly. The punctuation should be indicated thus—(,) '* Komma *', (;) '* Semifolon *', (.) '* Punft *'.*

4. *After an interval of five minutes read the text over again in the same manner as on the first occasion, but do not on any account repeat separate words at the request of individual candidates.*

PASSAGE FOR DICTATION.

The Lisbon Earthquake.

Am ersten November | ereignete sich das Erdbeben von Lissabon | und verbreitete | über die in Frieden und Ruhe schon eingewohnte Welt | einen ungeheueren Schrecken. | Eine große, prächtige Hauptstadt, | zugleich Handels- und Hafenstadt, | wird ungewarnt | von dem furchtbarsten Unglück betroffen. | Die Erde bebt und schwankt, | das Meer braust auf, | die Schiffe schlagen zusammen, | die Häuser stürzen ein, | Kirchen und Türme darüber her, | der königliche Palast zum Teil | wird vom Meere verschlungen, | die geborstene Erde | scheint Flammen zu speien; | denn überall meldet sich | Rauch und Brand | in den Ruinen. | Sechzigtausend Menschen, | einen Augenblick zuvor | noch ruhig und behaglich, | gehen mit einander zu Grunde. (10)

GAELIC

Lower Grade

Friday, 26th March—10 A.M. to 12.30 P.M.

The value attached to each question is shown in brackets after the question.

N.B.—Write legibly and neatly. Marks will be deducted for bad writing and spelling.

1. Translate into English :—

Mu ám Bliadhna Thearlaich bha na Gàidheil gu ìre bhig 'n an gnàths mar na prìomh aithrichean; gach fine 'n an treubhan air leth, agus gach ceann-cinnidh mar rìgh a' riaghladh thar a luchd-leanmhuinn féin. Bha iad a' beathachadh, mar bu tric, air sealg agus fiadhach nam beann, tacar na fairge, bliochd agus buannachd eile na spréidhe, maille ri beagan arain, oir cha robh am buntàta mu'n ám sin air sgaoileadh feadh na Gàidhealtachd. Bha iad ag cur seachad a' chuid bu mhò de an ùine ri fearra-ghnìomhan fearail àbhachdail, a' togail chreach agus a' leantuinn na tòire. Air an aobhar sin bha iad air am foghlum, eadar shean agus òg, ann an airmchleas a' chlaidheimh is na sgéithe, ullamh gu dol sìos do'n teugbhail, agus an ursannan-

catha a leantuinn cho luath 's a chluinneadh iad fuaim
na cathghairm no a chitheadh iad an crann-tàra. Mheal
iad mar sin an nòs duthchasach bho linntean cuchdach
an sinnsir gu latha Chùil-lodair, ach o'n uair sin faodar
a ràdh gu bheil " na Gàidheil agus an cinn fo fhliodh."

(20)

2. Translate into English :—

Dòchas.

Mo bheannachd ort, a dhòchais chaoin,
Bu tric a sheas thu m'inntinn mhaoth ;
'Nuair bhiodh mo chridhe trom fo leòn,
Fo uallach, iomaguin, agus bròn,
Lasadh tu lòchran blàth 'n am uchd
A thogadh dhìom gach leòn is luchd,
Is chuircadh tu chagar sèimh 'n am chluais—
" Bi saoithreach dìlcas fad do chuairt,
     Is gheibh thu duais is fois."

An saighdear treun le cridhe làn
Tha cath ri aghaidh cruais is bàis,
Cha tréig thu e 'nuair tha e an sàs
A' strì ri buaidh thoirt air a nàmh ;
'S tu gealltainn dha gum faigh e cliù
Is làmh na h-òighe d'an d'thug e rùn ;
Tha sin 'g a chumail ann am fonn,
'S ag àrach spionnaidh ùir 'n a chom,
     Mar shonn nach géill 'san drip.   (20)

3. Translate into Gaelic :—

But Tom did not fall asleep. Instead he tossed
about in the strangest way, and felt so hot all over that
he longed to get into the river and cool himself ; and
then he fell half asleep, and dreamt that he heard the
little lady crying to him, " Oh, you're so dirty ; go and
be washed " ; and then he heard the Irishwoman saying,
" Those that wish to be clean, clean they will be." Then
he heard the church bells ring so loud, close to him, that
he was sure it must be Sunday, in spite of what the old
dame had said ; and he would go to church, and see what
a church was like inside, for he had never been in one,
poor little fellow, in all his life. But the people would
never let him in, all over soot and dirt like that. He
must go to the river and wash first. And he said out
loud again and again, " I must be clean, I must be
clean."   (20)

4. Write in Gaelic a continuous story (about twice as long as the answer to Question 3) basing it on the following summary, and completing it in your own way :—

The music of the bagpipes is not so pleasant to anyone as to a Highlander. Highland regiment once quartered in a wolf-infested district of Canada—piper sets out on journey—loses his way—attacked and almost seized by pack of wolves—only time to climb a tree before they were upon him. Wolves make a ring round the tree, howling fiercely. Piper waits long in hope of exhausting their patience—at last thinks of trying what effect his music would have upon them—tunes his pipes— (**20**)

GAELIC

Higher Grade—(First Paper)

Friday, 26th March—10 A.M. to 12 NOON

The value attached to each question is shown in brackets after the question.

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

1. Translate into English :—

Is mór an t-atharrachadh a tha teachd air an t-saoghal an tùs an earraich. O chionn seachdain no dhà bha an talamh air fad mar dhìthreabh fhàsail; bha samhlaidhean a' bhàis r'am faicinn anns gach glaic agus gleann, air gach doire agus crann. Bha na beanntan air an còmhdach le sneachda, an cinn àrda air am folach an dubh bhruaillean nan sian. · Bha na glinn gun an trusgan, agus cha robh fuaim r'a chluinntinn ach torman na gaoithe. Bha gach abhainn agus caochan air an tachdadh le eigh, agus a' strì le tailmrich reòta an tràigh a ruigheachd. Bha na h-coin bhuchallach, a tha a nis ag gleusadh an ribheid, 'n an tosd, gun bhogha, gun teud, air am folach am frògaibh nan creag no air teicheadh gu blàths an rìoghachdaibh céin. Bha marbhantachd thosdach a mach air aghaidh an t-saoghail, agus mar thubhairt am filidh binn, " Bha greann dubh air gach nì." Ach a nis tha an snodhach a' dìreadh troimh

ehuislibh nan craobh; tha na sòbhraiehean cheana r'am faieinn am fasgadh nam bruach; agus an ùine ghearr thig am feada-coille agus lìonmhoireachd nam blàthan bòidheach a' sgaoileadh àilleaehd air an fhonn.

(25)

2. Translate into English :—

Shaoil mi féin gun robh mi an uair sin
'S an Eilean Uaine air aoidheaehd,
Far an eiuine am bi na euantan
Is an suaimhniche am bi na glinntean;
Far am bi iarmailtean suairce,
Gun neoil luasganaeh, gun ghaoith ann :
Òige a' dearrsadh air na gruaidhean,
Is eha bhi caochladh snuaidh a chaoidh ann.

Sìtheil na h-aehaidh is na réidhlich,
Na eoilltean gu léir ri h-òran;
Ri taobh nan aibhnichean éibhinn
An òigridh a' leum le sòlas.
An talla nan coinnlean céireach
Tha fuaim binn nan teudan òrbhuidh :
An uair lìonar sligean na feusda,
Théid gaeh beul air ghleus gu òran.

Is clann Rìgh Lochlann, na h-òighean
Bu bhòidhche bha riamh 's an tìr so,
Bu bhinne an ceileireadh sòlais
Na aon cheòl a bhiodh an sìothbhrugh.
An uair ehuireadh iad fonn fo'n òran
Oidhehe bhòidheach air Loch Bì dhuinn,
Bhiodh na glinn 's na tuinn gu h-òrdail
Comh-fhreagairt do 'n eeòl fad mhìltean.   (30)

3.—(a) Translate into English :—

How Cobhthach dealt with his brother Laoghaire, King of Ireland, and with Laoghaire's son and grandson.

Do rinne Cobhthach comhairle ré draoi do bhí 'n a fhochair eionnus do-ghéabhadh a bhráthair ré a mharbhadh. " Is eadh is indéanta," ar an draoi, " bás bréige do léigean ort, agus dul i n-eiliotrom[1] amhail mharbh, agus sgéal do chur go Laoghaire air sin, agus tiocfaidh ar bheagán buidhne dot fhios, agus ar dteaeht do láthair dhó, luighfidh ar do ehorp dot chaoineadh, agus tabhair sgian i n-íochtar a bhronn agus marbhthar leat mar sin é."   Ar gcríoehnughadh marbhtha

―――――――――――――――
[1] *eiliotrom,* a bier.

Laoghaire le Cobhthach, do marbhadh Oilill Áine, mac
Laoghaire, le Cobhthach, agus iar ndéanamh na ngníomh
soin do fhuair a shláinte.   Tug fós fá déara² leanbh óg
darbh ainm Maon, budh mac d'Oilill Áine, do thabhairt
da láthair, agus tug air mír de chridhe a athar agus a
sheanathar d'ithe is luchóg go n-a los³ do shlugadh,
agus táinig don déistin do ghabh an leanbh gur beanadh
a urlabhra⁴ dhe.

> ² *tug fá déara,* he caused.
> ³ *los,* a tail.
> ⁴ *urlabhra,* power of speech.

(*b*) Explain the reason of the eclipsis in *ar dteacht,
ar gcríochnughadh.*

Parse *luighfidh, tabhair, marbhthar, marbhtha.*   (**20**)

GAELIC

HIGHER GRADE—(SECOND PAPER)

Friday, 26th March—2.15 P.M. to 4.15 P.M.

*The value attached to each question is shown in brackets
after the question.*

**N.B.—Write legibly and neatly.   Marks will
be deducted for bad writing and spelling.**

SECTION I.

All the questions in this Section should be attempted.

1. Write an essay, in Gaelic, on *one* of the following
subjects :—

> (*a*) Am fear nach' dèan àr ri latha fuar,
>   Cha dèan e buain ri latha teth.
>
> (*b*) Na sochairean nàdurra a bhuilich am Freasdal
>   air Gàidhealtachd na h-Alba.   (The natural
>   resources of the Highlands and Islands.)
>   (**35**)

2. Turn into idiomatic Gaelic :—

> (*a*) However strong a man may be, his match may
>   be found.

(b) I never saw the like of these men for wicked-
ness.

(c) The sheep does not think her wool a burden,
nor is a body the heavier for possessing
sense.

(d) Though Sutherland adjoins Caithness, the
Sutherland men are of a rather different
type from the men of Caithness.   (10)

3. Translate into English :—

(a) Choisinn Clann Domhnaill baile is leth Alba.

(b) Is mairg air an dèanadh feachd Ui Dhuibhne
ereach na Samhna.

(c) C'uime am biomaid gun eudail, agus spréidh
aig na Gallaibh ?

(d) Chuir i guin bhàis fad ràithe am mhuineal.

       (5)

SECTION II.

*THREE questions should be attempted from this Section.
The answers may be either in Gaelic or in English.*

4. Give examples of the nominative, genitive, and
dative of the Dual number, (a) in the case of a masculine
noun (e.g., *each*), (b) in the case of a feminine noun
(e.g., *cas*).   (5)

5. Give examples of Gaelic idioms or constructions
in the spoken English of your own district.   (5)

6. Give some account of the life and work of one of
the following : — Alexander MacDonald, Ewen Mac-
Lachlan, William Ross.   (5)

7. Which Gaelic nobles are designated by the
following styles :—Mac Cailin, Mac Shimidh, Mac Mhic
Ailein, Mac Dhomhnaill Duibh ? Specify the territories
which they hold or once held.   (5)

8. Give an account of your favourite Gaelic poem,
telling why it appeals to you.   (5)

GAELIC.

HIGHER GRADE—(SECOND PAPER)

Friday, 26th March—1.30 P.M. to 2 P.M.

This paper must not be seen by any Candidate.

To be read out by the Teacher at 1.30 P.M. in the presence of the Supervising Officer.

To be written by the Candidate on the separate sheets provided, which must be collected before the Second Gaelic Paper is distributed.

DIRECTIONS FOR TEACHER.

1. *Read the passage aloud distinctly and deliberately, but not slowly, the object being to bring out the meaning of the whole as clearly as possible.*
2. *Inform the candidates that they may not ask for the repetition of any word or phrase.*
3. *Dictate the passage slowly, repeating each group of words (as indicated by vertical lines) twice over, and pronouncing every word very distinctly. The punctuation should be indicated.*
4. *After an interval of five minutes read the text over again in the same manner as on the first occasion, but do not on any account repeat separate words at the request of individual candidates.*

DICTATION.

Ciod ma tha feartan | anns a' Chruinne | nach 'eil a' fàs sean | le àireamh am bliadhnachan | mar tha sinne ? | Tha fhios againn | gu bheil an talamh féin aosmhor, | aois cho mór | agus nach 'eil e an comas duinn | eadhoin tuaireamas a thoirt oirre ; | gidheadh | tha na laghannan nàduir | a tha 'g a chumail suas | agus a' riaghladh òrdugh na Cruinne | a réir coltais | gun athar-rachadh, | gun sgàile tionndaidh, | o'n fhuair iad air thùs am bith. | A' ghrian | a tha soillseachadh ar latha-ne, | shoillsich i | farsuingeachd do-thomhas na cruit-heachd | mun robh an talamh idir ann ; | ach dhuinne an diugh | tha camhanaich na maidne | cho òigeil agus a bha e | air an là sin | air an do sheinn reulta na maidne cuideachd, | is air an d'rinn | uile mhic Dhé gàirdeachas.　　　　　　　　　　　　　　　　(10)

SPANISH

Lower Grade

Wednesday, 31st March—10 A.M. to 12.30 P.M.

*The value attached to each question is shown in brackets
after the question.*

**N.B.—Write legibly and neatly. Marks will
be deducted for bad writing.**

1. Translate into English :—

(*a*) La parte de Cataluña que se recorre desde
Gerona a Barcelona es muy varia, fértil y admirable-
mente cultivada. Es una sucesión de pequeños valles,
con bosques frondosísimos y castillos antiguos. Por
todas partes una vegetación espléndida y robusta, que
recuerda el severo aspecto de los valles de los Alpes.

Embellece el paisaje el pintoresco traje de los
campesinos, que responde de un modo admirable a la
altivez del carácter catalán. No hacía mucho frío,
pero iban todos embozados en sus mantas y, mostrando
únicamente la punta de la nariz y la del cigarrillo,
parecían caballeros saliendo del teatro, no ya por la
manta en sí, sino por el modo de llevarla. En todas
las estaciones del ferrocarril había tipos semejantes,
cada uno con su manta de color, no pocos vestidos de
paño fino y nuevo, casi todos sumamente limpios, y
guardando cierta dignidad que daba mayor realce a
sus trajes pintorescos.

A medida que se adelanta, van apareciendo aldeas,
casas, huertas, puentes, en una palabra, todo cuanto
anuncia la vecindad de una populosa y rica ciudad
comercial. **(20)**

(*b*) Algo muy importante tenía que decir don Acisclo
a doña Luz, cuando una mañana entró a verla. Don
Acisclo traía una carta ya abierta en la mano, y la
agitaba con vivas muestras de satisfacción.

—¿Qué hay? ¿Qué dice esa carta? ¿Qué grata
novedad contiene ? preguntó doña Luz.

—Lee tú misma y entérate, contestó don Acisclo;
y entregó la carta a doña Luz.

Ésta, antes de leer, conoció la letra y vió la firma que decía: "Enrique." Era de un sobrino, que era fraile dominico, residente en Filipinas.

La carta recién llegada era muy corta y traía fecha de Cádiz. Doña Luz leyó, y decía así: "Mi querido tío: Mis males se agravaron hasta tal extremo en Manila, que los médicos decidieron que yo debía venir a Europa a pasar una larga temporada. Salí de Manila y, a Dios gracias, hice una dichosa navegación. Tres días ha que estoy en Cádiz, bastante más fuerte ya. Pasado mañana salgo de aquí en el ferrocarril para esa villa. Expresiones cariñosas a los primos, primas y demás parientes, y a su huéspeda de V. la señorita doña Luz. Le quiere a V. mucho y desea abrazarle, su afectísimo sobrino." **(24)**

2. Translate into Spanish :—

During the autumn of last year I arranged to spend my holidays with a friend of mine in the north of Spain. Although we might have taken the steamer from Liverpool to one of the Spanish ports on the West Coast, we preferred to go through France by the railway. After passing the Spanish frontier[1] we stayed for a week in San Sebastian, where many of the Spanish people— and also many foreigners—go in summer. From there we went on to Burgos, where we found some English friends who were living in that city with the object of learning Spanish. They were staying in the house of a schoolmaster and, under his direction, were making good progress in their studies. We enjoyed ourselves very much during our stay in Burgos and were sorry when we had to leave. **(20)**

[1] frontera (fem).

3. Translate into Spanish :—

    (1) My clothes are as good as his.

    (2) These oranges cost four pesetas a hundred.

    (3) He went away without saying anything.

    (4) Pay the merchant what you owe him.

    (5) Are you fond of reading ?

    (6) You walk faster than I do.

    (7) Stay here till I come back.

    (8) The servant has just lit the lamps in the dining-room. **(16)**

SPANISH

HIGHER GRADE—(FIRST PAPER)

Wednesday, 31st March—10 A.M. to 12 NOON

*The value attached to each question is shown in brackets
after the question.*

N.B.—Write legibly and neatly. Marks will be deducted for bad writing.

Translate, with due attention to English form and expression :—

1. Después del reconocimiento del río de la Plata y parte de sus afluentes, y de las noticias trasmitidas a la Corte sobre la fertilidad de sus comarcas y las facilidades que presentaban esas corrientes para acercarse al Perú, debía necesariamente emprenderse una nueva expedición.

El descubrimiento estaba terminado por la toma de posesión, y llegaba entonces el momento de fundar colonias permanentes para asegurar la conquista. Muchos fueron los interesados en la empresa de fundar una colonia en el río de la Plata, pero a Pedro de Mendoza, tan buen soldado como hábil cortesano, le fué otorgado el permiso de realizar esa conquista por contrato que se firmó en Toledo en mayo de 1534.

La concesión sólo hablaba de trasportar al río de la Plata quinientos hombres en el primer viaje y otros tantos en el siguiente. Pero era tanta la novedad e interés que ofrecían estos países a la especulación, que Mendoza se encontró en la necesidad de armar catorce navíos para su primera campaña, por haberse alistado en sus banderas no menos de dos mil quinientos hombres, a los que luego se agregaron ciento cincuenta alemanes.

(20)

2. ¡ Oh tierra en que nací, noble y sencilla !
  ¡ Oh campos de Castilla
 donde corrió mi infancia ! ¡ Aire sereno !
 ¡ Fecundadora luz ! ¡ Pobre cultivo !...
  ¡ Con qué placer tan vivo
 se espaciaba mi vista en vuestro seno !

Lleno de majestad y de reposo
    el Duero caudaloso
al través de los campos se dilata :
refleja en su corriente el sol de estío,
    y el sosegado río
cinta parece de bruñida plata.

En las tendidas vegas y en las lomas,
    cual nidos de palomas,
se agrupan en desorden las aldeas,
y en la atmósfera azul pura y tranquila
    ligeramente oscila
el humo de las negras chimeneas.

(20)

3.   *El Marqués ; José.*

José.—Mis amos están en el jardín.   Pasaré recado.

Marqués.—Aguarda.   Quiero dar un vistazo a esta sala.   No he visitado a los señores de García Yuste desde que habitan su nuevo palacio...   ¡ Qué lujo !   Hacen bien.   Dios les da para todo, y esto no es nada en comparación de lo que consagran a obras benéficas. ¡ Siempre tan generosos.... !

José.—¡ Oh, sí, señor !

Marqués.—Y siempre tan retraídos...aunque hay en la familia, según creo, una novedad muy interesante.

José.—¿ Novedad ?·   ¡ Ah, sí... !

Marqués.—Oye, José : ¿ harás lo que yo te diga ?

José.—Ya sabe el señor Marqués que nunca olvido los catorce años que le serví.

Marqués.—Pues bien : hoy vengo exclusivamente por conocer a esa señorita que tus amos han traído poco ha de un colegio de Francia.

José.—La señorita Electra.

Marqués.—¿ Podrás decirme si sus tíos están contentos de ella, si la niña se muestra cariñosa, agradecida ?

José.—¡ Oh, sí !   Los señores la quieren....   Sólo que....

Marqués.—¿ Qué ?

José.—Que la niña es algo traviesa.

Marqués.—La edad....

José.—Juguetona, muy juguetona, señor.

Marqués.—Es monísima ; según dicen, un ángel...
¡ Cuánto deseo conocerla !

José.—En el jardín la tiene Vuecencia.   Allí se
pasa toda la mañana, enredando y haciendo travesuras.
                                                    (25)

SPANISH

HIGHER GRADE—(SECOND PAPER)

Wednesday, 31st March—2.15 P.M. to 4.15 P.M.

*The value attached to each question is shown in brackets
after the question.*

N.B.—Write legibly and neatly.   Marks will be deducted for bad writing.

1. Translate into Spanish :—

Though Philip still pretended to be friends with
Elizabeth, her conduct in helping his rebellious subjects
made him very angry, and there were other reasons which
made it seem likely that he would go to war with England
whenever he had a good opportunity.   You will remember
how we read of the new countries which were discovered
by Columbus, Vasco da Gama and others in the reign
of Henry the Seventh.   Up to the time of the Reforma-
tion the English had not gained much by these great
discoveries, for the Pope had divided the new lands
between the Spaniards and the Portuguese, and no one
had disputed his right to do this.   But after the
Reformation many of our brave soldiers and sailors
sailed away to the New World, to try to gain for
England a share in its treasures.   Some of these men
tried to find new countries, some settled in those already
found, and some were little better than pirates   and
spent their time in chasing the Spanish ships, and robbing
them of the treasures they were carrying from the New
World to the Old.   **(35)**

2. Translate into Spanish :—

(1) I have been waiting for you more than half an
hour.

(2) I am surprised that the work has taken so long.

(3) Please let me know if you require more money and I shall send it to you.

(4) The sun has gone down and it is getting dark.

(5) We are not allowed to walk any more in my uncle's garden.   **(15)**

3. Write in Spanish a continuous story (about one and a half times as long as the answer to Question 1) based on the following summary :—

Young man (description)—hotel—asked landlord for a good meal for his money—details of dinner—wine also served—payment—young man produced his money —only a shilling—landlord astonished—five shillings' worth—reply of young man—landlord at first angry— then thought of landlord of another hotel—his competitor in business—asked young man to do same there—let him go without payment—thanks of young man—his explanation—had already dined there on previous day— it was landlord of that hotel who sent him to this one.

(25)

SPANISH

Higher Grade—(Second Paper)

Wednesday, 31st March—1.30 P.M. to 2 P.M.

This Paper must not be seen by any Candidate.

To be read out by the Teacher at 1.30 P.M. in the presence of the Supervising Officer.

To be written by the Candidates on the separate sheets provided, which must be collected before the Second Spanish Paper is distributed.

DIRECTIONS FOR TEACHER.

1. *Read the passage aloud distinctly and deliberately, but not slowly, the object being to bring out the meaning of the whole as clearly as possible.*

2. *Inform the candidates that they may not ask for the repetition of any word or phrase.*

3. *Dictate the passage slowly, repeating each group of words (as indicated by vertical lines) twice over, and*

pronouncing every word very distinctly. The punctuation should be indicated thus :—(.) ' punto,' (,) ' coma,' (;) ' punto y coma '.

4. *After an interval of five minutes read the text over again in the same manner as on the first occasion, but do not on any account repeat separate words at the request of individual candidates.*

DICTADO.

Estas islas, | situadas en el *Golfo Mejicano,* | no ceden en riqueza territorial | a ningún país del mundo, | y Cuba, sobre todo, es considerada | como la Reina de ellas | por sus riquezas, | y como el Jardín del mundo | por la hermosura de su cielo | y la belleza de su clima. | Produce en abundancia | la caña que da el azúcar, | tan apreciada en todos los mercados ; | el café que no cede en calidad | al de la Arabia, | y el tabaco que no tiene rival | en todo el mundo. | No carece su suelo de riquezas minerales ; | abundan sus bosques en preciosas maderas de construcción, | plantas medicinales, | árboles que rinden valiosas sustancias, | y otras mil riquezas | que no se han explotado aún. | Sus ríos, | aunque de breve curso, | bastan para regar sus fértiles campiñas. | Sus limpias costas forman espaciosas bahías, | que ofrecen seguridad y buen anclaje | a buques de gran porte.   (10)

MATHEMATICS

LOWER GRADE—(FIRST PAPER)

Tuesday, 23rd March—10 A.M. to 12 NOON

Before attempting to answer any question, Candidates should read the whole of it very carefully, since time is often lost through misapprehension as to what is really required.

All the figures should be neatly drawn. All the steps of the proofs must be given. Preference will be given to proofs which depend on first principles, and in all cases it should be clearly shown on what assumptions the demonstrations are based.

The value attached to each question is shown in brackets after the question. Marks will be deducted for careless or badly arranged work.

SECTION I.

All the questions in this Section should be attempted.

1. Prove that if three parallel lines make equal intercepts on any transversal, they make equal intercepts on any other transversal.   **(11)**

2. Prove geometrically that the square on a straight line whose length is the difference of the lengths of two given straight lines is less than the sum of the squares on these lines by twice the rectangle contained by them. **(13)**

3. Prove that the opposite angles of a cyclic quadrilateral are supplementary.   **(11)**

4. State and prove the construction for finding a mean proportional to two given straight lines.   **(11)**

SECTION II.

Only THREE *questions should be attempted from this Section. The propositions in Section I (above) on which certain of these deductions depend are indicated in brackets.*

5. Prove that the square on the hypotenuse of a right angled triangle is greater than the square described on a line equal to the difference of the sides containing the right angle by four times the area of the triangle.
(Section I, 2.)   **(18)**

6. *BE*, the bisector of the angle *ABC* of a cyclic quadrilateral *ABCD*, meets the circumference in *E*. Prove that *DE* bisects the exterior angle at *D*.
(Section I, 3.)   **(18)**

7. *S*, a point in the base *QR* of an isosceles triangle *PQR*, is joined to the vertex *P*. Prove that the ratio of the sines of the angles *QPS* and *RPS* is the same as the ratio of the segments of the base.

State a geometrical construction for dividing a given angle into two parts whose sines are in a given ratio.   **(18)**

8. Given a triangle *ABC* and any straight line *DE*, state and prove a construction for making a triangle *DEF* equal in area to *ABC*.   **(18)**

9. (See figure, which need not be copied into your examination book.)

Semicircles are described on three sides of a square *ABCD*. Through any point *P* on the semicircle described on *AB* the straight lines *PAS*, *PBQ* are drawn. *SD* and *QC* are produced to meet in *R*.

(*a*) Prove that *PQRS* is a square.

(*b*) What is the locus of *R* for different positions of *P*? Give a reason.   **(18)**
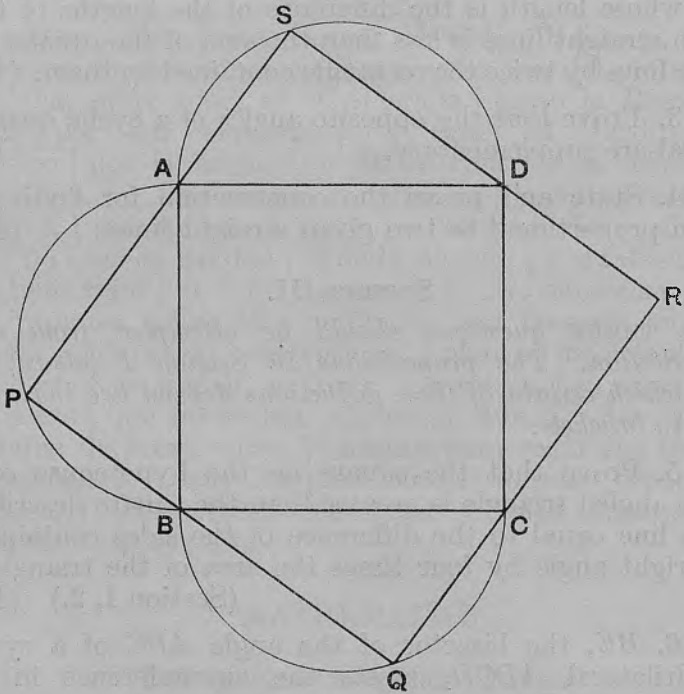
MATHEMATICS

LOWER GRADE—(SECOND PAPER)

Tuesday, 23rd March—1 P.M. to 3.30 P.M.

Before attempting to answer any question, Candidates should read the whole of it very carefully, since time is often lost through misapprehension as to what is really required.

Square-ruled paper and four-place logarithmic tables are provided.

All the working must be legible and shown in its proper position in the answer, and the different steps should be shortly indicated in words.

The value attached to each question is shown in brackets after the question.   Marks will be deducted for careless or badly arranged work.

Section I.

All the questions in this Section should be attempted.

1. The deposit rate of interest was 2 per cent. per annum till 21st March inclusive, and 3 per cent. per annum thereafter.   Find the average rate per cent. per annum for the period from 1st March to 15th August, both dates inclusive;   and the interest to the nearest penny on a sum of £146 deposited during that period.

(13)

2. *A* takes 120 strides of 30 inches each, and *B* 108 strides of 33 inches each per minute.

(*a*) How long does each take to walk a mile?

(*b*) If they start together along the same road, how many yards will the slower be behind at the end of an hour? **(14)**

3.—(*a*) Resolve into two factors—

$$9(4x - 3y)^2 - 4(x - 2y)^2;$$

and into three factors

$$3(x^2 - y^2)(x + 3y) - 2(x + y)(x + 2y)(x + 3y).$$

(*b*) Simplify—

$$\frac{a - b}{a^3 - b^3} - \frac{a + b}{a^3 + b^3} + \frac{2\,ab}{(a^2 + ab + b^2)(a^2 - ab + b^2)}.$$

(14)

4. Solve the equations—

(*a*)
$$\begin{cases} \dfrac{x}{y} = \dfrac{x + 7}{y - 5} \\[2mm] 5x - 3y = 5. \end{cases}$$

(*b*) $x^2 - 2 \cdot 76x = 2 \cdot 23$ (correct to the second decimal place). **(14)**

SECTION II.

Only THREE *questions should be attempted from this Section.*

5.—(*a*) Rule the straight line $y = 2x + 1$.

(*b*) Plot carefully as much of the curve $y = x^2$ as will enable you to find the x co-ordinates of its points of intersection with that straight line, and write down their values.

(*c*) Give a reason why these x co-ordinates are the co-ordinates of the points in which the curve $y = x^2 - 2x - 1$ cuts the axis of x. **(15)**

6. Explain clearly what is meant by the logarithm of a number; and show that in the common system of logarithms the logarithm of 315 is a number between $+ 2$ and $+ 3$, and the logarithm of $0 \cdot 0315$ a number between $- 1$ and $- 2$.

Find the cube root of $0 \cdot 0315$; and the value (correct to the nearest shilling) of $£25 \cdot 3 \ (1 \cdot 03)^6$. **(15)**

7. In a triangle ABC the angles CAB and ABC are respectively $25°$ and $37\frac{1}{2}°$, and the side AC is $4 \cdot 2$ inches long.

(*a*) Find the length of the perpendicular CD from the angle C on the side AB.

(*b*) Hence, or otherwise, find the length of the side BC. **(15)**

8. A room p feet long and q feet wide is carpeted so as to leave a border r *inches* wide between the edge of the carpet and the walls.

Find a formula for the number of square feet in this border; and verify that in the case where $p = 24$, $q = 18$, $r = 4$, the formula gives the difference between the areas of the floor and the carpet. **(15)**

9. I have 58 minutes to catch a train at a station $8\frac{1}{2}$ miles away. I start in a motor-car which travels at 20 miles an hour, but owing to a breakdown I have to walk the second part of the way at the rate of $3\frac{3}{4}$ miles per hour. If I arrive just in time, how far from the station did the breakdown occur? **(15)**

MATHEMATICS

HIGHER GRADE—(FIRST PAPER)

Tuesday, 23rd March—10 A.M. to 12 NOON

Before attempting to answer any question, Candidates should read the whole of it very carefully, since time is often lost through misapprehension as to what is really required.

Four-place logarithmic tables are provided.

All the figures should be neatly drawn.   All the steps of the proofs must be given.   Preference will be given to proofs which depend on first principles, and in all cases it should be clearly shown on what assumptions the demonstrations are based.

The value attached to each question is shown in brackets after the question.   Marks will be deducted for careless or badly arranged work.

SECTION I.
All the questions in this Section should be attempted.

1. Prove that the square on the hypotenuse of a right angled triangle is equal to the sum of the squares on the sides containing the right angle.   (12)

2. Prove that the angles between the tangent at any point of a circle and a chord through that point are equal to the angles in the alternate segments.   (11)

3. Prove that two triangles are equiangular if they have one angle of the one equal to one angle of the other, and the sides containing the equal angles proportional. (11)

4. Assuming that tetrahedra on equal bases and of equal altitudes have equal volumes, prove that the volume of a triangular pyramid is one-third of the volume of a triangular prism on the same base and of the same altitude.   (12)

SECTION II.
Only THREE *questions should be attempted from this Section. The propositions in Section I (above) on which certain of these deductions depend are indicated in brackets.*

5. *ABCD* is a square.   A quadrant of a circle whose centre is *A* touches the side *BC* at *B* and *CD* at *D*.

Through P, any point in AD, a straight line is drawn parallel to AB, cutting the diagonal AC in Q, the quadrant in R, and the side BC in S. Prove that $PQ^2 + PR^2 = PS^2$. (Section I, 1.) **(18)**

6. Two circles intersect at A and B. Through P, any point on one of them, the straight lines PAC, PBD are drawn meeting the other circle in C and D. Prove that CD is parallel to the tangent at P. (Section I, 2.) **(18)**

7. A square right pyramid $OABCD$ standing with its base $ABCD$ on a horizontal plane is cut by an oblique plane intersecting the horizontal plane in a straight line parallel to BC. Prove that the section of the pyramid made by this oblique plane is a trapezium whose non-parallel sides are equal. **(18)**

8. From a point A, 4 feet above the ground, the elevation of the top of a flagpost is 25 degrees, and from a point B at the same level as A and 110 feet nearer the flagpost the elevation is found to be 35 degrees. Find the height of the flagpost, assuming that all the ground concerned is level. **(18)**

9. ABC is a triangle, having the angles A and B acute. P is a point on CA produced, and PB cuts the circumference of the circle on AB as diameter in D.

If $BD = d$, prove that $\theta =$ angle CBD, $\phi =$ angle CPD is a solution of the simultaneous equations

$$\theta + \phi = 180° - C$$
$$a \cos \theta + b \cos \phi = d.$$

What is the greatest possible value of d for given values of a, b and C? **(18)**

MATHEMATICS

HIGHER GRADE—(SECOND PAPER)

Tuesday, 23rd March—1 P.M. to 3.30 P.M.

Before attempting to answer any question, Candidates should read the whole of it very carefully, since time is often lost through misapprehension as to what is really required.

Square-ruled paper and four-place logarithmic tables are provided.

All the working must be legible and shown in its proper position in the answer, and the different steps should be shortly indicated in words.

The value attached to each question is shown in brackets after the question.   Marks will be deducted for careless or badly arranged work.

SECTION I.

All the questions in this Section should be attempted.

1. An import duty of 1/1 per lb. on a certain article produced a revenue of £$6\frac{1}{2}$ millions.   Next year the duty was raised to 1/3 per lb., but owing to a fall in the consumption of the article, the anticipated revenue was not realised, only £7 millions being obtained.   What was the consumption in the first year, and the percentage fall in the second ?   (**11**)

2.—(*a*) Resolve into four factors $x^6 - 7x^3 - 8$.

(*b*) The factors of $12x^2 + 7xy - 12y^2 + 50y - 48$ are

$$(3x + 4y + a)\,(4x - 3y + b),$$

where a and b are numbers, positive or negative.

Find a and b.   (**11**)

3. Solve the equations :—

(i) $4x^4 + 1 = 12x^2$, giving your answer in surd form.

(ii) $\begin{cases} 3x - 4y = 3. \\ 3x^2 + 5xy - 12y^2 - x - 3y = 28. \end{cases}$ (**11**)

4. Prove that

(*a*) $\dfrac{\cos A + \sin A}{\cos A - \sin A} = \sec 2A + \tan 2A$;

(*b*) In any triangle

$(b + c - a)\tan \tfrac{1}{2}A = (c + a - b)\tan \tfrac{1}{2}B.$

(**11**)

5. The sides of a triangle are $3 \cdot 4$, $4 \cdot 5$, and $5 \cdot 6$ inches. Calculate

    (a) the smallest angle;

    (b) the length of the perpendicular on the greatest side from the opposite vertex.   **(11)**

Section II.

Only THREE *questions should be attempted from this Section.*

6. Plot on the same diagram the curves

$$y = \frac{x^2}{x+1} \quad \text{and} \quad y = \frac{1}{x+2}$$

from $x = 0$ to $x = 1 \cdot 2$ at intervals of $0 \cdot 2$.

Find approximately the value of x where the curves intersect; and write down the equation of the third degree in x, of which this value is one root.   **(15)**

7. Find an expression for the sum of a series of terms, each of which bears a constant ratio to that immediately preceding it.

If $S = x + 2x^2 + 3x^3 + 4x^4 + 5x^5$,

find $(1-x)S$; and hence prove that

$$S = \frac{x(1 - 6x^5 + 5x^6)}{(1-x)^2} \qquad \textbf{(15)}$$

8. If α and β are the roots of the equation

$$ax^2 + bx + c = 0,$$

prove that

$$\alpha + \beta = -\frac{b}{a} \quad \text{and} \quad \alpha\beta = \frac{c}{a}.$$

The equation $x^2 - qx + p = 0$ has its roots each greater by 4 than those of the equation $x^2 - px + q = 0$. Find p and q.   **(15)**

9.—(a) Write down the product formula for $\sin C - \sin D$, and for $\cos C - \cos D$.

    (b) Prove that

$$\frac{\cos A - \cos 3A + \cos 5A - \cos 7A}{\sin 4A} =$$

$$\frac{\sin 7A - \sin 5A + \sin 3A - \sin A}{\cos 4A}$$

(c) Two acute angles differ by 60°, and their sines differ by $\frac{2}{3}$. Find these angles, using your tables where necessary. **(15)**

10. Find the expression for sin $3A$ in terms of the powers of sin A.

If $2 \sin \theta - \sin \frac{\theta}{3} = 0$, find all the possible values of θ from 0° to 360° inclusive. **(15)**

ELEMENTARY ANALYSIS

Additional Mathematical Subject

(Higher Grade)

Monday, 29th March—10 a.m. to 12.30 p.m.

Before attempting to answer any question, Candidates should read the whole of it very carefully, since time is often lost through misapprehension as to what is really required.

Not more than FOUR *questions should be attempted from Section I, and not more than* THREE *questions from Section II.*

Square-ruled paper and four-place logarithmic tables are provided.

The value attached to each question is shown in brackets after the question. Marks will be deducted for careless or badly arranged work.

Section I.

Not more than FOUR *questions should be attempted from this Section.*

1. Prove that the sum of n terms of the series, whose n^{th} term is $n(n + 1)(n + 2)$, is

$$\tfrac{1}{4}n(n + 1)(n + 2)(n + 3).$$

Sum to n terms the series

$$1.3.5 + 2.4.6 + 3.5.7 + \ \ . \ \ . \ \ . \qquad \textbf{(13)}$$

2. Find the number of permutations of n different things taken r at a time.

How many different numbers can be formed by using one or more of the digits 1, 2, 3, 4, 5 and 6, no digit being used more than once. **(13)**

3. With regard to the curve whose equation is
$$y^2 = x(x - 3)(x - 8)$$
(i) Find for what values of x there are real points on the curve.

(ii) Show that it is symmetrical about the x-axis and has three tangents perpendicular to that axis.

(iii) Find at what points its gradient vanishes.

(iv) Sketch the curve on squared paper. **(13)**

4. Show that an angle θ can always be found to satisfy the equation $\theta = \tan^{-1}x$, where x has any real value. If $\theta = a$ be one solution of the equation, find a formula for all solutions.

All angles concerned being acute, prove that
$$\tan^{-1}x + \tan^{-1}y = \tan^{-1}\frac{x + y}{1 - xy},$$
and show that

(i) $\tan^{-1}\dfrac{2a - b}{b\sqrt{3}} + \tan^{-1}\dfrac{2b - a}{a\sqrt{3}} = \dfrac{\pi}{3}$,

(ii) $\sin^{-1}\dfrac{3}{5} + \sin^{-1}\dfrac{8}{17} = \sin^{-1}\dfrac{77}{85}$. **(13)**

5. Evaluate

(i) $\dfrac{d}{dx}(x \log x)$,

(ii) $\dfrac{d}{dx}(\sin mx \cos nx)$,

(iii) $\displaystyle\int \frac{3x^2 + x - 2}{(x - 2)^2(1 - 2x)}\, dx$,

(iv) $\displaystyle\int \frac{\sin 2x}{1 + \sin x}\, dx$. **(13)**

SECTION II.

Not more than THREE *questions should be attempted from this Section.*

6. Find whether the fraction $\dfrac{x^3 - 5x^2 + 7x - 3}{x^3 - x^2 - 5x - 3}$ has a value (i) when $x = 1$ and (ii) when $x = 3$. Find also the *limits* to which the fraction tends as x approaches these values.

Prove that $\dfrac{d}{dx}\, x^n = nx^{n-1}$, stating carefully what theorems you assume in the course of your proof. **(16)**

7. Assuming the truth of the binomial theorem when the index is any positive number, prove its truth when the index is negative. [You may assume that the series you deal with are convergent.]

Write down the general term of the expansion of $(1 - x)^{-n}$, and prove that

$$1 + \frac{2n}{3} + \frac{2n\,(2n + 2)}{3.6} + \frac{2n\,(2n + 2)\,(2n + 4)}{3.6.9} + \ldots \text{ to } \infty$$

$$= 2^n \left\{ 1 + \frac{n}{3} + \frac{n(n + 1)}{3.6} + \frac{n(n + 1)\,(n + 2)}{3.6.9} + \ldots \text{ to } \infty \right\}$$
(16)

8. Write down the series for $\log_e(1 + x)$ in ascending powers of x, and investigate for what values of x it is convergent.

Deduce that, if n is a positive integer,
$$\log_e(n + 1) - \log_e n$$
$$= 2 \left\{ \frac{1}{2n + 1} + \frac{1}{3(2n + 1)^3} + \frac{1}{5(2n + 1)^5} + \ldots \right\}$$
and use this series to calculate $\log_e 2$ to two decimal places. **(16)**

9. Prove that the area enclosed by a plane curve, the two ordinates corresponding to abscissæ x_1 and x_2, and the axis of x, is measured by $\displaystyle\int_{x_1}^{x_2} y\,dx$.

Show that the area between the curve $c^{n-1}\,y = x^n$, the x-axis and the ordinates at the points $(x_1\ y_1)$ and $(x_2\ y_2)$ on the curve, is $\dfrac{1}{n + 1}\,(x_2\,y_2 - x_1\,y_1)$. **(16)**

10. If $x + iy = r\,(\cos\theta + i\sin\theta)$, express r and θ in terms of x and y. Prove that the modulus of the product of two complex numbers is the product of their moduli, and state and prove an analogous theorem concerning their arguments.

Show that
$$\{\cos\theta + \cos\phi + i\,(\sin\theta + \sin\phi)\}^n$$
$$+ \{\cos\theta + \cos\phi - i\,(\sin\theta + \sin\phi)\}^n$$
$$= 2^{n+1} \cos^n \frac{\theta - \phi}{2} \cos \frac{n(\theta + \phi)}{2}$$
(16)

GEOMETRY

ADDITIONAL MATHEMATICAL SUBJECT
(Higher Grade)

Wednesday, 31st March—10 A.M. to 12 NOON

Before attempting to answer any question, Candidates should read the whole of it very carefully, since time is often lost through misapprehension as to what is really required.

Square-ruled paper is provided.

Marks will be deducted for careless or badly arranged work.

Six questions should be attempted, of which **THREE** at least must be from Section I and **TWO** at least from Section II. The **SIXTH** question may be taken either from Section I or from Section II. All the questions are of equal value.

SECTION I.

1. Prove that the equation of a straight line is of the first degree.

Through a fixed point A is drawn a variable straight line meeting the axis of x in B, and AC, perpendicular to AB, meets the axis of y in C. Find the locus of the middle point of BC, the co-ordinates of A being (a, b).

2. Prove that the equation $\dfrac{x^2 - y^2}{a - b} = \dfrac{xy}{h}$ represents the two straight lines bisecting the angles between the two lines $ax^2 + 2hxy + by^2 = 0$.

Show that the area of the triangle formed by the lines $ax^2 + 2hxy + by^2 = 0$ and $x = p$ is $\dfrac{p^2}{b}\sqrt{h^2 - ab}$.

3. The axes of co-ordinates being rectangular, show that the equation
$$ax^2 + 2hxy + by^2 + 2gx + 2fy + c = 0$$
represents a circle if $a = b$ and $h = 0$; and, if these conditions are fulfilled, find the centre and radius of the circle.

A variable circle passes through the origin and cuts the axes of x and y in P and Q respectively, so that PQ passes through a fixed point (a, b). Prove that the equation of the locus of the centre of the circle is

$$\frac{a}{x} + \frac{b}{y} = 2.$$

4. Find the equation of the tangent at the point $(x'\ y')$ on the ellipse

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1.$$

A variable tangent cuts the axis of x at T, and N is the foot of the ordinate of its point of contact. Prove that the rectangle $OT.ON$ is constant in area, where O is the origin of co-ordinates.

5. Show that the hyperbola $xy = k^2$ is symmetrical about the lines $x - y = 0$ and $x + y = 0$. Sketch the curve.

If a straight line meet the curve in P and P' and the co-ordinate axes in Q and Q', prove that $PQ = P'Q'$.

Section II.

6. Prove that the circumference of the circle drawn through the feet of the altitudes of a triangle bisects the sides of the triangle and each of the lines joining its angular points to its orthocentre.

Show that it also bisects all straight lines drawn from the orthocentre to the circumference of the circumscribed circle of the triangle.

7. Define a harmonic range of points on a straight line. $OABC$ and $OA'B'C'$ are harmonic ranges of points in the same order on two straight lines that intersect in O; prove that AA', BB' and CC' are concurrent.

Hence, or otherwise, show that if two chords, XY and $X'Y'$, of a circle intersect at P, the intersection of XX' and YY' lies on the polar of P, and deduce a means of constructing the polar of a given point by means of a straight-edge only.

8. Find the locus of points from which the tangents to two given circles are equal.

Show how to draw a system of circles coaxal with two given non-intersecting circles. Define the limiting points of such a system, and prove that every circle of the system divides the line joining them harmonically.

9. If perpendiculars are drawn to the sides of a triangle from a point on the circumference of the circumscribed circle, prove that their feet are collinear.

Show that the angle between the Simson lines corresponding to two points on the circumscribed circle is equal to half the angle that the two points subtend at the centre of the circle.

10. If a geometrical diagram be inverted with respect to any circle, prove that the angles of intersection of any two intersecting curves are unchanged.

Show how to invert any three circles into three circles whose centres are collinear.

DYNAMICS

ADDITIONAL MATHEMATICAL SUBJECT
(Higher Grade)

Tuesday, 30th March—2 P.M. to 4 P.M.

Before attempting to answer any question, Candidates should read the whole of it very carefully, since time is often lost through misapprehension as to what is really required.

Square-ruled paper is provided.

The value attached to each question is shown in brackets after the question. Marks will be deducted for careless or badly arranged work.

SECTION I

All the questions in this Section should be attempted.

1. Prove that a point, starting with velocity u and moving for a time t in a straight line with uniform acceleration f will have moved a distance $ut + \frac{1}{2}ft^2$.

A point moves 7 ft. in the first second during which it is under observation, and 11 and 17 ft. during the third and sixth seconds respectively. Is this consistent with the supposition that it is uniformly accelerated ?

(16)

2. Show how to find the resultant of two parallel forces.

A uniform plate is in the shape of a square with an equilateral triangle described outwards on one side. Find the position of its centre of gravity. (16)

3. Define *work, energy, kinetic energy*.

A rough inclined plane is 12 cm. high and 24 cm. long. A weight of 30 gm. slides from the top to the bottom and arrives there with a velocity of 20 cm. per sec. How much energy has been consumed by friction? [$g = 980$ cm./sec.^{2}.] **(16)**

4. State the Principle of Archimedes, and mention any of its applications.

A hydrometer sinks to a certain mark in a liquid of specific gravity $0 \cdot 8$. In order to sink it to the same mark in water it is necessary to place a load of 100 gm. upon it, the load not being immersed in the water. What is the weight of the hydrometer? **(16)**

Section II

Only TWO *questions should be attempted from this Section.*

5. State the laws of friction. How would you proceed to ascertain the coefficient of statical friction between two substances?

A cubical block of metal stands on a horizontal board, which is gradually tilted. Show that the block will begin to slide down the board before it begins to topple over if the coefficient of friction is less than unity. **(18)**

6. A light, stiff bar in the form of an arc of a circle, subtending an angle a at the centre, has weights P and Q attached to its ends, and rests on a horizontal table with its convexity downwards. Prove that the portion of the bar between the weight P and the point of contact with the table subtends at the centre an angle θ, where

$$\tan \theta = \frac{Q \sin a}{P + Q \cos a}.$$ **(18)**

7. An Atwood's machine stands on a table, the suspended masses, m_1 and m_2, being prevented from moving by clamping the string and the pulley. If the masses are now set free to move, show that the pressure on the table is diminished by $\dfrac{(m_1 - m_2)^2}{m_1 + m_2} g$, the inertia of the pulley and the friction being negligible. **(18)**

8. Describe the construction and explain the action of the common suction pump. What limit is there to the height to which it can raise water?

Find, in grammes weight, the force required to sustain the piston, without friction, if the diameter of the piston is 20 cm., the depth from it to the surface of the water in the well, 500 cm., and the height of the column of water above the piston, 60 cm.   (18)

BOOKKEEPING

Tuesday, 30th March—10 A.M. to 1 P.M.

The value attached to each question is shown in brackets after the question. In addition, 25 marks are allowed for writing, ruling and style.

1. On 31st May, 1925, the following balances were outstanding in the books of Smith & Green (partners— John Smith three-fourths share and William Green one-fourth) :—

	£	s.	d.
Cash at bank	324	7	9
Cash in hand	16	12	7
Stock	1,242	7	10
Bills Receivable	324	8	5
Bills Payable	257	12	8
Due to Edwards Brothers	54	6	8
Due by Craig & McNab	98	11	7
Due to William Gray	28	13	2

Transactions during June were as follows :—

1925.	£	s.	d.
June 1. Bought goods from James Gow	174	13	4
Sold goods to Craig & McNab	37	12	8
2. Craig & McNab accepted bill at 2 months' date	136	4	3
3. The firm's acceptance fell due at bank for	116	12	9
4. Paid Edwards Brothers by cheque, amount of their a/c	54	6	8
They allowed 2½ per cent. discount.			
5. Sold goods to John Fletcher	341	13	4
He paid by cheque, less 5 per cent. discount.			

		£	s.	d.
June 6. Customer's bill fell due and paid to bank - - - -		150	6	7
8. Bought goods from William Gray - - - - -		37	9	2
9. Cash Sales - - - -		11	1	7
10. Sold goods to Watson & Jones		97	14	3
Paid cash into bank - -		20	0	0
11. Paid James Gow by cheque— amount of a/c - - -		174	13	4
He allowed 2½ per cent. discount.				
12. Cash sales - - - -		24	7	9
13. Bought goods from William Gray - - - - -		450	6	8
15. Gave acceptance to Wm. Gray at 2 months' date for - -		516	9	0
16. Firm's acceptance fell due at bank for - - - -		67	12	9
17. Goods sold to Craig & McNab -		127	10	0
18. Craig & McNab paid by cheque —amount of a/c - - -		127	10	0
5 per cent. discount allowed.				
20. Goods sold to Peter Smith & Co.		81	9	4
22. Bought goods from Edwards Brothers - - - -		59	11	6
26. Goods sold to Craig & McNab -		98	13	4
29. Drew cash from bank - -		15	0	0
30. Paid salaries for month in cash		34	11	3
Paid charges for month in cash		11	9	4

Allow £25 for rent and taxes for month. Stock at 30th June, £1,313.

Make the necessary opening entries. Record the above transactions in Day Books, Cash Book and Journal (Bill Books are not required). Post thence to Ledger. Frame Profit and Loss Account for the month and Balance Sheet at 30th June, 1925. **(115)**

2. James Smith owes John Brown £425 17s. 6d. He is unable to meet his engagements and offers to pay his creditors 16s. in the £ in settlement of their claims. This is accepted. John Brown writes off the loss. Explain what entries would be made in John Brown's books, showing any Journal entry in full. **(10)**

COMMERCIAL ARITHMETIC

FIRST PAPER

Tuesday, 30th March—2 P.M. to 2.30 P.M.

This paper will be taken up at the end of half-an-hour, when the other paper will be given out.

The sums are not to be copied out, and all the calculations required are to be performed mentally.

More importance will be attached to accuracy than to quickness.

The value attached to each question is shown in brackets after the question.

Fill this in first

*Name of School*_____

*Name of Pupil*_____

1.—(*a*) Add :—

Tons.	cwts.	qrs.	lbs.
374	12	3	19
267	8	2	21
174	9	1	15
498	7	0	12
573	16	3	17
295	13	2	27

(6)

(*b*) Multiply :—

Miles.	furlongs.	poles.	yards.	foot.	inches.
94	7	17	0	1	9 by 7.

(7)

2. Write down the values of the following :—

64 articles at 21*s*. 6*d*. per dozen ——

3 per cent. on £645 ——————————

$\dfrac{176 \times 3 \cdot 2}{\cdot 25 \times 64}$ ——————————

(6)

3. Express :—

18*s*. 9*d*. in decimals of £1 ———————

·2375 of £1 in shillings and pence ————

·375 as a vulgar fraction ——————————

(6)

COMMERCIAL ARITHMETIC

SECOND PAPER

Tuesday, 30th March—2.30 P.M. to 4 P.M.

Before attempting to answer any question, Candidates should read the whole of it very carefully, since time is often lost through misapprehension as to what is really required.

All the working must be shown in its proper position in the answer, and the different steps of the calculation should be shortly indicated in words.

Algebraical symbols may be used if properly explained.

The value attached to each question is shown in brackets after the question. In addition, 7 marks are allowed for neatness, arrangement and style.

1. An invoice for brass rods weighing 4 tons 16 cwts. 3 qrs. 16 lbs. totals £373 0s. 9d. What is the price per lb. ? **(8)**

2. Find to the nearest penny the amount of the compound interest on £764 lent for four years at $3\frac{3}{4}$ per cent. **(8)**

3. An investor holding £2,950 of $3\frac{1}{2}$ per cent. Glasgow Corporation Stock sells this at 76 and invests the proceeds in $2\frac{3}{4}$ per cent. Guaranteed Stock at 59. How much does he gain or lose in income ? **(8)**

4. A man paid £41 10s. 3d. in Income Tax when the rate was 4s. 6d. per £. His income was " earned income " which entitled him to an allowance of 10 per cent. He paid nothing on the first £135, and half rate on the next £225. What was his total income ? **(9)**

5. Find to the nearest penny what would be the proceeds of a draft on New York for $796,437 sold at a rate of exchange of 4.81\frac{1}{2}$. **(8)**

6. A dealer mixes two teas costing him 2s. 2d. and 2s. 8d. per lb. respectively so as to produce a blend to sell at 2s. 4d. per lb. after adding a profit of 5 per cent. to his cost. In what proportions must he mix them ? **(9)**

7. A merchant buys a cargo of salt for £3,750. His selling expenses amount to £75. He sells the cargo for £4,050. What rate of profit does he make on the cost of the salt ? **(9)**

8. If 1 metre is equal to 39⅔ inches, express 40 cubic feet in cubic metres to three decimal places. **(9)**

SCIENCE

HIGHER GRADE—(BOTANY)

Friday, 26th March—2.15 P.M. to 4.15 P.M.

Not more than FIVE *questions should be attempted.*
Answers should, wherever possible, be illustrated by diagrams.

1. What are the chief characteristics of plants of the order Leguminosæ ? Mention six common examples of the order, and describe the flower, fruit, and seed in any one species.

2. Contrast in a detailed way the flowers in a daffodil and those in a buttercup. Mention any other features of importance in which these plants differ.

What use is made of these differences in the classification of plants ?

3. Give an illustrated description of a transverse section of an ordinary green leaf. Explain the process by which carbohydrate is formed in the leaf, and describe the emptying of the leaf after it has been assimilating during the day.

4. Indicate clearly the exact nature of the following :— spore, seed, root hair, sieve tube, nectary, pappus, samara, follicle.

5. Explain clearly the process of osmosis. Describe the part it plays in the nutrition of an ordinary flowering plant.

6. Describe the life-history of a common fern, explaining clearly with reference to it what is meant by " alternation of generations."

7. Enumerate six common flowering plants of the wayside which may be seen in your neighbourhood in early summer. Classify these in their natural orders, describe the floral organs in any one, mention how it is pollinated, and state the type of fruit it produces.

SCIENCE

Higher Grade—(Chemistry)

Wednesday, 31st March—2.15 p.m. to 4.15 p.m.

Not more than FIVE *questions should be attempted.*

Answers should, wherever possible, be illustrated by diagrams, and supplemented by equations.

H = 1, O = 16, Na = 23, C = 12, Cl = 35·5.
1,000 c.c. of dry hydrogen at N.T.P. weigh 0·09 gm.

Mathematical tables will be supplied to those who desire them.

1. Write an historical account, extending to not more than a page and a half, of *either* of the following :—

> The chemistry of the air.
> The classification of the elements.

2. Distinguish between the chemical equivalent and the atomic weight of an element, illustrating your answer by reference to any suitable metallic element.

In an experiment, 0·49 gm. of a metal was dissolved in hydrochloric acid, and was found to displace 295 c.c. of dry hydrogen at a temperature of 22° C. and a pressure of 752 mm. of mercury. The specific heat of the metal was found to be 0·152. Calculate the chemical equivalent and the atomic weight of the metal.

[*Mathematical tables will be useful for this question.*]

3. What is a decinormal solution ? Illustrate your answer by referring to sodium hydroxide and sodium carbonate. Describe fully the method you would employ to prepare a decinormal solution of hydrochloric acid.

15 c.c. of $\frac{N}{10}$ hydrochloric acid exactly neutralise 27 c.c. of a solution of sodium hydroxide. Calculate the number of grammes of sodium hydroxide per litre of the solution.

4. Explain the terms: " oxidising agent " and " reducing agent."　Select from the following substances two examples of each, and write an account of the experiments you would perform with them to illustrate your answer :—hydrogen, carbon monoxide, chlorine, sulphur dioxide, nitric acid, potassium permanganate.

5. Describe the preparation of hydrogen sulphide, giving in detail the experiments you would perform to illustrate its chief properties.　How would you show (a) that the gas contains both hydrogen and sulphur, and (b) that it contains its own volume of hydrogen ?

6. Give the names and formulæ of the oxides of nitrogen.　Describe briefly the preparation and properties of any two of them.

7. Write a short account of the manufacture of *one* of the following :—sulphuric acid, washing soda, bleaching powder.

SCIENCE

HIGHER GRADE—(ENGINEERING or APPLIED SCIENCE)

Wednesday, 31st March—2.15 P.M. to 4.15 P.M.

FIVE *questions should be attempted, viz.,* TWO *questions from Section A,* TWO *questions from Section B, and a* FIFTH *from either Section A or Section B.*

When Candidates use a formula they must explain each symbol and show as far as possible how the formula is built up.　Units must always be stated.　Take $\pi = \dfrac{22}{7}$, *and g = 32 ft. per sec. per sec.*

Four-place logarithmic tables are provided.

SECTION A.

1. A ship is steaming due *South* at a speed of 20 miles per hour, and another ship is steaming due *West* at a speed of 15 miles per hour.　The second steamer passes the point of intersection of the two tracks one hour and a half before the first steamer reaches it.

Find, relative to the point of intersection of the two tracks, the position of each ship in its course when the

ships are nearest to each other. Find also this least distance. Illustrate by a scale diagram.

2. Describe briefly, with sketch, the differential pulley-block and explain how you would proceed to find the linear law connecting the Efforts (E) and the Loads (L).

Assuming the linear law of the machine to be $E = 1 \cdot 38 + 0 \cdot 182\ L$ and the velocity ratio to be 16, find the mechanical advantage and efficiency for a load of 48 lbs.

3. Two bodies, A and B, are moving towards the *South* at a speed of 40 feet per second; three seconds later A is still moving *South,* but at a speed of 64 feet per second, and B is moving *due East* at 64 feet per second.

Find the changes of velocities, the magnitude and direction of each of the accelerations which are supposed constant, and give the distance covered by A in the time.

If the weights of A and B are 2 and 4 lbs. respectively, find the direction and magnitude of the average force on each of the two bodies.

4.
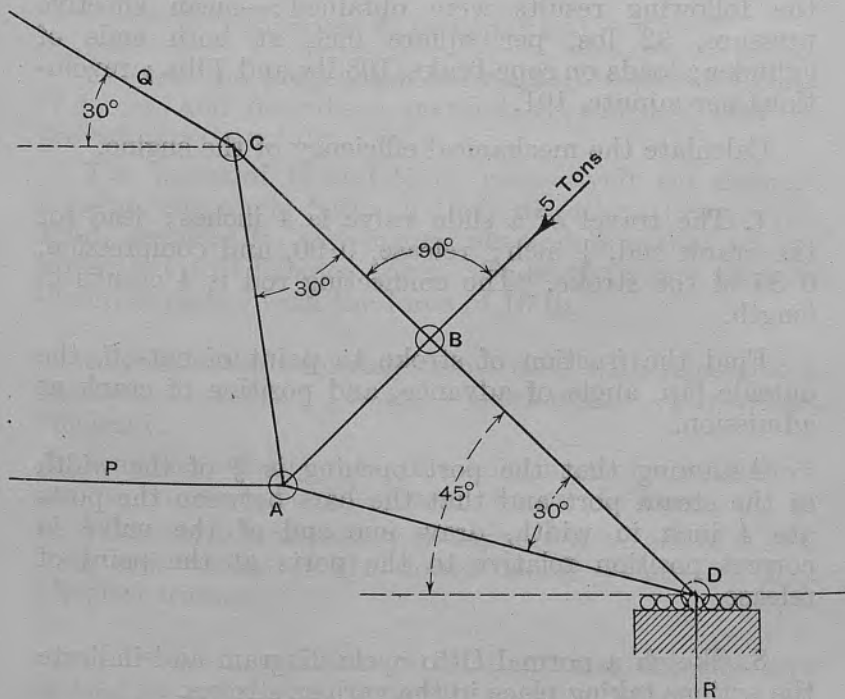
The figure indicates a framed structure freely jointed at A, C, B, and D, with external forces P, Q, R, and one of 5 tons acting on it as indicated. P is horizontal and R is vertical.

If the framed structure is at rest determine the magnitudes and directions of the external forces P, Q, and R.

SECTION B.

5. The following data were obtained from a boiler under test :—Coal fired per hour, 930 lbs.; moisture in coal as fired, 13 per cent.; calorific value of dry coal, 12,400 B.Th.U. per pound; feed-water per hour, 7,100 lbs.; feed-water temperature, 195° F.; steam temperature, 347° F.; dryness fraction of steam, 0·9. Latent heat $=(1114 - 0·695(\text{F}.°))$ B.Th.U. per lb. Calculate the efficiency of the boiler. What becomes of the heat which is not transmitted to the water?

6. In a test of a steam-engine, with cylinder diameter, $6\frac{1}{4}$ inches; piston rod diameter, $1\frac{1}{4}$ inches; stroke, 12 inches; brake-wheel diameter (effective), 5 feet; the following results were obtained :—mean effective pressure, 32 lbs. per square inch at both ends of cylinder; loads on rope brake, 108 lbs. and 7 lbs.; revolutions per minute, 101.

Calculate the mechanical efficiency of the engine.

7. The travel of a slide valve is 4 inches; lead for the crank end, $\frac{1}{4}$ inch; release, 0·90, and compression, 0·85 of the stroke. The connecting rod is 4 cranks in length.

Find the fraction of stroke to point of cut-off, the outside lap, angle of advance, and position of crank at admission.

Assuming that the port opening is $\frac{2}{3}$ of the width of the steam port and that the bars between the ports are 1 inch in width, draw one end of the valve in correct position relative to the ports at the point of release.

8. Sketch a normal Otto cycle diagram and indicate the actions taking place in the various strokes.

A gas engine working on this cycle has the following dimensions :—

Cylinder diameter, 6 inches ; stroke, 15 inches.

In a test of 50 minutes' duration the engine completed 11,418 revolutions, and the number of explosions was 5,225. The mean effective pressure being 89 lbs. per square inch, find the indicated horse-power.

SCIENCE

Higher Grade—(Physics)

Monday, 29th March—1.30 P.M. to 3.30 P.M.

Not more than FIVE *questions should be attempted.*

Answers should, wherever possible, be illustrated by diagrams. Mathematical tables will be supplied to those who desire them.

Section I. (Mechanics).

1. State the proposition known as the parallelogram of forces, and describe a method by which it may be proved experimentally.

Two forces of 10 and 15 lb. respectively act through a point, the angle between their directions being 105°. Find, graphically, the magnitude and direction of the force that will balance them. State the angle that its direction makes with the force of 10 lb.

2. Define the following terms used with regard to a machine : — velocity - ratio, mechanical advantage, efficiency.

Find the velocity-ratio of a hoisting tackle with three pulleys on the upper block and two on the lower.

What force is necessary to support a weight of 3 cwt. with this tackle if the lower block weighs 19 lb. ? (Neglect friction).

3. Define " coefficient of friction," and describe how it may be found experimentally.

In the following table, a is the inclination of a given rough plane to the horizontal, and P is the force, acting parallel to and down the plane, that will just start a body of unit weight moving down the plane.

(a) Plot P vertically and a horizontally on the squared paper in your examination book, and join the points with a smooth curve.

(b) If this curve when continued at its lower end meets the horizontal axis at 40°, where will it meet the vertical axis if it is continued at the upper end ?

Give a reason.

$P =$	0·75	0·65	0·55	0·45	0·34	0·23	0·11
$a =$	5°	10°	15°	20°	25°	30°	35°

(*Mathematical Tables will be necessary.*)

Section II. (Sound).

4. How can the velocity of sound in air be determined ? What effect, if any, is produced on this velocity by

(a) a rise of temperature;
(b) a rise in the barometric pressure ?

Give a reason in each case.

5. The number of vibrations per second of a stretched string, when it emits its fundamental note, is given by the formula

$$n = \frac{1}{2l}\sqrt{\frac{T}{m}}.$$

Interpret each of the letters in this formula; and describe the experiments by which you tested its truth.

In the case of the violin, explain

(a) how a range of notes can be got from a single string;

(b) why a change of temperature causes a sharpening or flattening of the fundamental note of a string;

(c) why one of the strings is metal wound.

6. When an express train is approaching a station the pitch of the engine's whistle appears to a person standing on the platform to be higher than when the train is receding. How is this explained? If the explanation you give is the correct one, how should the difference in pitch vary with (a) the speed of the train, (b) the velocity of sound (as affected by temperature)?

Section III. (Heat).

7. What is meant by the " coefficient of linear expansion " of a solid? Describe one method of finding this coefficient.

The coefficient of *cubical* expansion of iron is given in the tables as lying between 0·000033 and 0·000044. Within what limits would you expect the coefficient of linear expansion of iron to lie? Give a reason.

8. Describe one method of finding the density of a gas at normal temperature and pressure.

380 c.c. of a gas at 15° C. and under a pressure of 750 mm. of mercury weigh 0·481 grams. What is the density of this gas at N.T.P.?

(Mathematical Tables will be useful.)

9. Describe what takes place when a lake freezes over. Your description should make it clear why very deep lakes in this country seldom freeze over. Mention any laboratory experiment supporting your explanation of this fact.

10. Define clearly the terms :—calorie, specific heat, latent heat; and describe one method of finding the specific heat of a liquid.

A copper calorimeter weighing 250 grams contains 92·5 grams of water at 15° C. 5 grams of pounded ice at − 4° C. are put into this water, and the mixture is stirred till the temperature is steady. Prove that, if there is no loss of heat by radiation, the resulting temperature should be about 11° C.

Specific heat of copper = 0·095
Specific heat of ice   = 0·49.
Latent heat of ice   = 80·

SECTION IV. (LIGHT).

11. Show by means of diagrams how a real and a virtual image may be formed by a convex lens.

A convex lens used as a simple microscope magnifies 8 diameters when the object is $1\frac{1}{2}$ inches from its centre. What is the focal length of this lens?

12. Describe one method of determining the velocity of light.

13. Explain the following terms in relation to a triangular glass prism :—refracting angle (or angle of the prism), angle of minimum deviation, refractive index.

In what respect is the last term not quite definite?

Describe an experiment by which you have determined any one of these three quantities.

SECTION V. (ELECTRICITY AND MAGNETISM).

14. Describe any form of double fluid cell. State why two fluids are used, and what the chemical action is.

Indicate generally how the potential varies throughout the whole circuit when the terminals are joined by a uniform wire.

15. Enunciate Ohm's Law, defining carefully all the terms used.

Two cells, A and B, are set up in series, and the current is passed through a tangent galvanometer, which shows a deflection of $35°$. The cell B is then reversed, every other condition remaining unchanged, and the new galvanometer reading is $19°\ 20'$. Show that the voltage of the cell A is approximately three times that of the cell B.

(*Mathematical tables will be necessary.*)

16. How does the resistance of a wire depend on its dimensions, its temperature, and the material of which it is made?

Describe an experiment you would perform to determine the effect of a change of temperature; and calculate from the following experimental data the average temperature coefficient :—

resistance at $0°$ C. $= 1\cdot1$ ohms.
resistance at $99\cdot8°$ C. $= 1\cdot53$ ohms.

17. Faraday's Second Law is as follows :—

"When a current passes through different electrolytes in series the ratio between the quantities of the substances appearing at the electrodes is the same as that of their chemical equivalents."

Why does he say "in series"? and what does he mean by "chemical equivalents"?

How would you find the electro-chemical equivalent of copper?

18. What do you understand by a line of magnetic force, and how would you find the direction of a line of the earth's magnetic force at any place? What other information would you need to have before you could find the intensity of the earth's magnetic force at the place?

Describe and explain the behaviour of a dip-needle as it is carried southwards from the north magnetic pole to the magnetic equator, its plane remaining the plane of the magnetic meridian.

19. State what is meant by the magnetic moment of a magnet; and describe carefully the experiments you made to measure this quantity.

SCIENCE

HIGHER GRADE (ZOOLOGY)

Tuesday, 30th March—2 P.M. to 4 P.M.

Not more than FIVE *questions should be attempted.*

Answers should, wherever possible, be illustrated by diagrams.

1. Describe the structural features of any two common Protozoa, *e.g.*, *Amœba* and *Paramœcium*. Mention some important ways in which they differ from animals such as *Hydra* or an earthworm.

2. Give an account of the external appearance of the common starfish, *Asterias*. Explain clearly, with the

help of diagrams, how it creeps, and describe the apparatus involved.

3. Describe, with the help of a full and clear drawing, the alimentary canal of the earthworm. Give also a named drawing of a cross-section through the body.

4. Explain, with illustrations where necessary, the following terms as used in Zoology :—stinging cell, lateral line, metamorphosis, protective colouring, swimmeret, elytra, spiracle, trachea.

5. Give a short, orderly account of the life-history of the common frog. Explain clearly its mode of respiration at each stage.

6. Describe the heart and general course of circulation in a typical bony fish, e.g., haddock. Explain the change which takes place in the blood in its passage (a) through the gills, and (b) through the body to the heart.

7. Make a drawing of a bird's breast bone and pectoral girdle. Comment briefly, but adequately, upon their distinctive features.

APPENDIX.

LIST OF UNIVERSITY AND PROFESSIONAL AUTHORITIES BY WHOM EVIDENCE OF HAVING PASSED AT THE LEAVING CERTIFICATE EXAMINATION IS ACCEPTED IN LIEU OF PRELIMINARY EXAMINATIONS.

The Lords of Council and Session (for the purposes of the Law Agents Act);
The Society of Solicitors before the Supreme Courts;
The University of Oxford;
The University of Cambridge;
The Scottish Universities Entrance Board;
The University of London;
The University of Bristol;
The University of Wales;
The Queen's University of Belfast;
Girton College, Cambridge;
The Imperial College of Science and Technology;
Royal Holloway College, Englefield Green, Surrey;
The General Council of Medical Examination and Registration of the United Kingdom;
The Pharmaceutical Society of Great Britain; *
The Royal College of Surgeons of Edinburgh;
The Chartered Accountants of Scotland;
The London Association of Accountants;
The Chartered Institute of Secretaries;
The Chartered Insurance Institute;
The Faculty of Actuaries in Scotland;
The Institute of Bankers;
The Institute of Chemistry of Great Britain and Ireland;
The Institution of Civil Engineers;
The Royal Institute of British Architects; *
The Surveyors' Institution;
The Royal College of Veterinary Surgeons.*

* Evidence of having obtained the Day School Certificate (Higher) is also accepted by these Bodies.

Reports, &c., 1924–25. Price 12s. 6d.; post free, 13s.
> *This Volume contains Reports, Statistics, Regulations, Minutes, Circulars, Leaving Certificate Examination Papers, &c.*

Report of the Committee of Council on Education in Scotland, 1925–26. [Cmd. 2676.] Price 1s.; post free, 1s. 1d.

Fifty-Second Annual Report by the Accountant in Edinburgh (Year 1923–24). Price 1s.; post free, 1s. 0½d.

Second Quinquennial Report on Physical Education in Schools in Scotland, for the period of five years ended 30th June, 1922, by Dr. Lewis D. Cruickshank. Price 6d.; post free, 6½d.

General Reports for the year 1925 on Day Schools, by His Majesty's Chief Inspectors of Schools in Scotland. Price 1s. 6d.; post free, 1s. 7d.

Report and Statistics relating to the Training of Teachers, 1922–24. Price 1s. 9d.; post free, 1s. 10d.

Return showing (i) Grant-Earning Day Schools and Institutions, and (ii) Continuation Classes and Central Institutions, with Statistics relating thereto, for 1922–23. Price 4s.; post free, 4s. 1½d.

Royal Scottish Museum. Report for the year 1921–22. Price 6d.; post free, 6½d.

Secondary Education : Report, 1915. Price 3d.; post free, 4d.

Leaving Certificate Examination Papers, 1925. Price 1s. 9d.; post free, 1s. 10½d.

Leaving Certificate Examination. Circular 30, relating to the Examination of 1926. Price 3d.; post free, 3½d.

Lists of Education Authorities, &c., 1925. Price 1s.; post free, 1s. 0½d.

Circular 44 (Alterations in the Examination System). Price 1d.; post free, 1½d.

Circular 60 (Conditions of the award of Day School Certificates (Higher)). Price 1d.; post free, 1½d.

Circular 61 (Leaving Certificate Examination : English Papers). Price 1d.; post free, 1½d.

Circular 62 (Leaving Certificate : New Regulations for award of). Price 1d.; post free, 1½d.

Circular 63 (Conditions of the award of Day School Certificates (Lower)). Price 1d.; post free, 1½d.

Circular 66 (Takes out " Note as to Mathematics "). Price 1d.; post free, 1½d.; (or with " Note as to Mathematics "). Price 3d.; post free, 3½d.

Circular 67 (Necessitous School Children). Price 1d.; post free, 1½d.

Circular 68 (Accounts of Education Authorities). Price 1d.; post free, 1½d.

Circular 70 (1926) (French Assistants in Scottish Schools and Training Centres). Price 1d.; post free, 1½d.

Circular 71 (1926) (Scottish Assistants in French Schools and Colleges). Price 1d.; post free, 1½d.

Circular 72 (Continuation Classes). Price 2d.; post free, 2½d.

Memorandum on Physical Education. Price 4d.; post free, 4½d.

Memoranda on the Teaching of various School Subjects :—
>   English. [Cd. 3410.] Price 2d.; post free, 3d.
>   Arithmetic. [Cd. 3448.] Price 1½d.; post free, 2d.
>   Languages. [Cd. 3546.] Price 1½d.; post free, 2d.
>   Drawing. [Cd. 3662.] Price 1½d.; post free, 2d.
>   History. [Cd. 3843.] Price 1½d.; post free, 2d.
>   Nature Study and Science. [Cd. 4024.] Price 3d.; post free, 4d.
>   Music. Price 2d.; post free, 2½d.
>   Geography. Price 2½d.; post free, 3½d.

Recommendations to be followed in the Planning and Fitting Up of Schools, 1925. Price 6d.; post free, 6½d.

SECONDARY EDUCATION (SCOTLAND).

LEAVING CERTIFICATE EXAMINATION

(INCLUDING DAY SCHOOL CERTIFICATE (HIGHER) GENERAL PAPER).

EXAMINATION PAPERS 1926.

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58° 58°

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1000 „
2000 „

56° 56°

54° 54°

6° 4° 2° 0°

Ordnance Survey. 1925.

SKETCH - MAP OF THE INDIAN OCEAN

LEAVING CERTIFICATE EXAMINATION, 1926.

GEOGRAPHY LOWER.

MAPS.

FILL THIS IN FIRST.

Name of School...

Name of Pupil...

TO BE PINNED INSIDE THE CANDIDATE'S BOOK OF ANSWERS
AND THUS SENT TO THE DEPARTMENT.

[OVER.

LEAVING CERTIFICATE EXAMINATION, 1926.

GEOGRAPHY HIGHER.

MAP.

FILL THIS IN FIRST.

Name of School _____

Name of Pupil _____

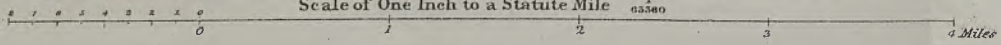TO BE PINNED INSIDE THE CANDIDATE'S BOOK OF ANSWERS
AND THUS SENT TO THE DEPARTMENT.

[OVER.

Scale of One Inch to a Statute Mile

0   1   2   3   4 Miles