SECONDARY EDUCATION
(SCOTLAND)

LEAVING CERTIFICATE EXAMINATION

(INCLUDING DAY SCHOOL CERTIFICATE (HIGHER) GENERAL PAPER)

EXAMINATION PAPERS
1935

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SCOTTISH EDUCATION DEPARTMENT

1935

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Lists of Education Authorities, Secondary Schools, etc., with names and addresses of correspondents, 1935. Price 6d. ; post free, 7d.

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Leaving Certificate Examination Papers, including Day School Certificate (Higher) General Paper, 1934. Price 2s. 6d. ; post free, 2s. 8d.

Circular 30, relating to the Leaving Certificate Examination of 1935. (September, 1934.) Price 4d. ; post free, 5d.

Circular 62 (Leaving Certificate : Regulations for award of). (September. 1932.) Price 1d. ; post free, 1½d.

Circular 60 (Conditions of the award of Day School Certificates (Higher)). (December, 1923.) Price 1d. ; post free, 1½d. *(See also* Circulars 86 and 94.)

Circular 86 (Day School Certificate (Higher) ; Modification of courses). (June, 1932.) Price 1d. ; post free, 1½d.

SECONDARY EDUCATION
(SCOTLAND)

LEAVING CERTIFICATE EXAMINATION

(INCLUDING DAY SCHOOL CERTIFICATE
(HIGHER) GENERAL PAPER)

EXAMINATION PAPERS

1935

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EXAMINATION PAPERS—

APPENDIX—

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 1935 it commenced on Monday, 25th March.

For information as to the purpose and scope of the Examination, and as to the conditions on which pupils (of Scottish schools) may be presented, reference should be made to the Department's circular 30, dated 5th September, 1934. (Price 4*d.* ; post free 5*d.*)

EXAMINATION PAPERS

1935
DAY SCHOOL CERTIFICATE (HIGHER)
GENERAL PAPER
Monday, 25th March—9.30 A.M. to 11.30 A.M.

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

N.B.—Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

1. Write a Composition, to fill about a page and a half of your book, on *one* of the following :—

    (*a*) Farm life in winter.

    (*b*) A game of football, or cricket, or tennis, or hockey, or shinty, in which you have taken part.

    (*c*) Wallace's two-handed sword tells its story.

    (*d*) A character you admire (from literature or from real life).

    (*e*) The pleasure and the advantages of having lessons at school in (*a*) Benchwork, *or* (*b*) Cookery and Laundrywork.

Or—Write a letter to a friend abroad describing your last year at school. **(40)**

2. Read the following passage carefully and answer the questions that follow it :—

At length, my restlessness attained to such a pitch, that I hurried on my clothes and went downstairs. In the large kitchen, where I dimly saw bacon and ropes of onions hanging from the beams, the watchers were clustered together, *in various attitudes*, about a table purposely moved away from the chimney and brought near the door. A pretty girl, who had her ears stopped with her apron and her eyes upon the door, screamed when I appeared, supposing me to be a spirit ; but the others had more presence of mind and were glad of *an addition to their company.* One man, referring to the topic they had been discussing, asked me whether I thought the souls of the collier-crews who had gone down, were out in the storm.

I remained there, I dare say, two hours. Once I opened the yard gate and looked into the empty street. The sand, the seaweed, and the flakes of foam were driving by ; and I was obliged to call for assistance before I could shut the gate again and make it fast against the wind.

There was a dark gloom in my solitary chamber when I at length returned to it ; but I was tired now, and, getting into bed again, fell—*off a tower and down a precipice*— into the depths of sleep. I have an impression that for a long time, though I dreamed of being elsewhere and in a variety of scenes, it was always blowing in my dream. At length, I lost *that feeble hold upon reality*, and was engaged with two dear friends, but who they were I don't know, at the siege of some town in *a roar of cannonading.*

(*a*) Give, in your own words as far as possible, the substance of each of the three paragraphs quoted above. **(20)**

(*b*) Explain the following phrases *as used in the passage :* in various attitudes ; an addition to their company ; off a tower and down a precipice ; that feeble hold upon reality ; a roar of cannonading. **(10)**

(*c*) Form adjectives from the following nouns :— girl, spirit, addition, man, precipice, impression. Break the word " restlessness " into its component parts, and give the force of each suffix. Explain the figure of speech used in the phrase " clustered together." **(5)**

(*d*) Make a general grammatical analysis of the last sentence of the first paragraph—" One man . . . the storm." **(5)**

3. (*a*) Each of the following sentences contains an idiomatic phrase. Give the meaning and, if you can, the origin of the idiom in each case :—

   (1) He insisted on having his pound of flesh.
   (2) They will kill the fatted calf when the wanderer returns.
   (3) From there he obtained a bird's-eye view of the city.
   (4) I gave the bully a wide berth.
   (5) Last night I slept like a top. **(10)**

(*b*) Correct the following sentences, giving reasons for your corrections :—

   (1) I shall have great pleasure in accepting your kind invitation, which has just reached me.
   (2) Passing up the stairs, a rapid consultation was held.
   (3) My informant is a man whom I know is reliable.
   (4) The fops of that day used the abominable art of painting their faces as well as the women.
   (5) The problem is a difficult one and neither of the three solutions are satisfactory. **(10)**

1935

LEAVING CERTIFICATE EXAMINATION
ENGLISH
(INCLUDING LITERATURE AND HISTORY)

(FIRST PAPER (*a*)—COMPOSITION)

Monday, 25th March—9.30 A.M. to 10.30 A.M.

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

N.B.—Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

Write a Composition, *not exceeding three foolscap pages in length,* on any *one* of the following subjects :—

(a) Your favourite character in Scottish history, with reasons for your choice.

(b) The advantages and the disadvantages of government by dictatorship.

(c) Is it better to be educated in the country or in a city ?

(d) A garden you know well.

(e) If you had three months in which to travel at will, regardless of expense, how would you spend them ?

(f) Is the present curriculum of secondary schools too literary in character ? Should it include more practical work ? **(35)**

ENGLISH

(INCLUDING LITERATURE AND HISTORY)

(FIRST PAPER (b)—INTERPRETATION AND LANGUAGE)

Monday, 25th March—10.45 A.M. to 12.25 P.M.

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

N.B.—Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

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

Men of Letters.

Among these men are to be found the brightest specimens and the chief benefactors of mankind. It is they that keep awake the finest parts of our souls ; that give us better aims than power or pleasure, and withstand *the total sovereignty of Mammon* in this earth. They are the vanguard in the march of mind ; the intellectual backwoodsmen, reclaiming from *the idle wilderness* new territories for the thought and activity of their happier brethren. Pity that from

all their conquests, so rich in benefit to others, themselves should reap so little ! But it is vain to murmur. They are volunteers *in this cause* ; they weighed the charms of it against the perils : and they must abide the results of their decision, *as all must*. The hardships of the course they follow are formidable, but not all inevitable ; and to such as pursue it rightly, it is not without its great rewards. If an author's life is more agitated and more painful than that of others, it may also be made more spirit-stirring and exalted : fortune may render him unhappy ; it is only himself that can make him despicable. The history of genius has, in fact, its bright side as well as its dark. And if it is distressing to survey the misery, and what is worse, the debasement of so many gifted men, it is doubly cheering, on the other hand, to reflect on the few, who, amid the temptations and sorrows to which life in all its provinces and most in theirs is liable, have travelled through it in calm and virtuous majesty, and are now hallowed in our memories, not less for their conduct than their writings. Such men are the flower of *this lower world* : to such alone can the epithet of great be applied with its true emphasis. There is *a congruity in their proceedings* which one loves to contemplate : " he who would write heroic poems, should make his whole life a heroic poem."

(*a*) Summarise the argument of the above in three *short* paragraphs, avoiding, as far as possible, the exact words of the text.

(*b*) Explain, as briefly and precisely as you can, the meaning of " the total sovereignty of Mammon," " the idle wilderness," " in this cause," " as all must," " this lower world," " a congruity in their proceedings."

(*c*) Make a general grammatical analysis of the sentence beginning, " Pity that from all their conquests," and ending with " so little." Parse " Pity."

(*d*) Give the derivation of any *five* of the following words :—

benefactors, vanguard, wilderness, perils, author, despicable, hallowed, conquests, inevitable, survey, reflect, volunteers. **(40)**

2. (*a*) For each of the following phrases substitute a single word of equivalent meaning and write a sentence illustrating its use :—

        (i) a remedy for all diseases.
        (ii) not having a backbone.
        (iii) happening at the same time.

(*b*) Distinguish between the meanings of

        (i) epithet, epitaph, epigram.
        (ii) expedient, expeditious.
        (iii) transitive, transitory.   **(10)**

3. Write a short letter in reply to *one* of the following advertisements :—

(1) Chartered Accountants have vacancy for youth with view to apprenticeship ; applicants should possess Leaving Certificate or have attained an equivalent educational standard. Reply, with full particulars as to qualifications, etc., to 1234, " Daily Times " Office, Edinburgh.

<div align="center">*Or,*</div>

(2) Wanted, young lady as Private Secretary ; well-educated and adaptable ; willing to travel ; some knowledge of foreign languages desirable. Reply, with full particulars as to qualifications, etc., to 5678, " Daily Times " Office, Glasgow.

<div align="right">**(15)**</div>

<div align="center">

ENGLISH

(INCLUDING LITERATURE AND HISTORY)

(SECOND PAPER—LITERATURE)

Monday, 25th March—1.30 P.M. to 2.45 P.M.

</div>

All candidates should attempt THREE questions, and three only, of which No. 1 is compulsory.

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

N.B.—Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

(*Answer the* FIRST *question and any* TWO *of the others.*)

1. (*a*) Describe any *one* of the following characters—Shylock, Caliban, Claudius, Macbeth, Edmund, and examine whether it is so drawn as in any way to engage our sympathy as well as our dislike.

Or (*b*) Describe any scene in a Shakespearian play which you think would impress you more when acted in a theatre than when read at home.

Or (*c*) How does Shakespeare's love of England find expression in his plays ?   **(16)**

2. **Either** (*a*) Give some account of any *one* of the following characters as drawn by Milton—Comus, Satan, Samson.

Or (*b*) Among Chaucer's pilgrims which one do you like most and which least ?   Give reasons for your choice and illustrate your answer with quotations.   **(12)**

3. Contrast Wordsworth and Tennyson as poets of Nature, *or* Dickens and Thackeray as humorists.   **(12)**

4. **Either** (*a*) What qualities must a lyric possess to be properly so called ? Illustrate your answer from any lyrical masterpieces of English or Scottish poetry.

Or (*b*) Write a brief critical appreciation of an 18th century satirist *or* a 19th century essayist *or* a contemporary dramatist.   **(12)**

5. **Either** (*a*) Take any *one* of the following and show how it reflects the character of its author and of its age :— *The Pilgrim's Progress, Gulliver's Travels, The Vicar of Wakefield, Speech on American Taxation, Waverley, Heroes and Hero-worship.*

Or (*b*) Give an account of any notable novel *or* play *or* poem *or* biography published in this country since the Great War.   **(12)**

6. By reference to Macaulay try to estimate the qualities that make a great historical narrative at the same time a great work of literature.   **(12)**

ENGLISH

(INCLUDING LITERATURE AND HISTORY)

(THIRD PAPER—HISTORY)

Monday, 25th March—3 P.M. to 4.15 P.M.

All candidates must attempt THREE questions, viz., the question in Section A and two questions from Section B, one of which must be selected from Sub-section (3).

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

N.B.—Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

SECTION A

This question must be attempted by all candidates. The answers to the individual points should be very brief, and not more than 15 to 20 minutes should be devoted to the whole question.

1. Show *very briefly* the historical significance of the following : the career of Mahomet ; the Synod of Whitby ; the capture of Jerusalem by the Seljuk Turks (1071) ; the death of Alexander III of Scotland ; the Act of Supremacy of Henry VIII ; the Solemn League and Covenant ; the capture of Quebec ; the battle of Trafalgar ; the Reform Act of 1832 ; the First Battle of the Marne (1914).   **(10)**

SECTION B

Two of the ten questions in this Section must be answered, and one of these two must be selected from the last five.

SUB-SECTION (1). EARLY PERIOD (55 B.C. TO 1485 A.D.).

2. Which of the following peoples left the most permanent impression upon Great Britain—the Romans, the Danes, the Normans ?   Give reasons for your answer.   **(15)**

3. Explain the historical importance of *two* of the following :—St. Columba ; Margaret, Queen of Malcolm Canmore ; Thomas à Becket ; the Emperor Frederic Barbarossa ; the Black Prince ; Joan of Arc.   **(15)**

SUB-SECTION (2).   MIDDLE PERIOD (1485–1763)   .

4. Which sovereign of the House of Tudor do you regard as having accomplished most for the national welfare of England ?   Give reasons for your choice.   **(15)**

5. Trace *either* (*a*) the history of the Reformation in Scotland from the death of James V to the Union of the Crowns ;

Or (*b*) the relations (in outline) between Scotland and England from the Union of the Crowns to the Union of the Kingdoms.   **(15)**

6. Discuss *one* of the following topics :—

   (*a*) " Cromwell was successful as a rebel but failed as a ruler " ;
   (*b*) the influence of France in English politics from 1660 to 1688 ;
   (*c*) a contrast between the policy of Walpole and that of the elder Pitt ;
   (*d*) the sources of national wealth before the Industrial Revolution.   **(15)**

SUB-SECTION (3).   MODERN PERIOD (1763–1935)

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

   (i) the causes of the War of American Independence ;
   (ii) the effect of the French Revolution on British policy, domestic and foreign, up to the Peace of Amiens ;
   (iii) (*a*) the struggle against the Slave Trade, **and** (*b*) the emancipation of slaves in the British Colonies ;
   (iv) the causes and the effects of the Peninsular War (1808–1814).   **(15)**

8. Discuss the achievements of any *two* of the following :— Peel, Lord John Russell, W. E. Gladstone, Dr. Livingstone, Cecil Rhodes, Garibaldi, Bismarck, President Lincoln, Faraday, Nansen, Pasteur.   **(15)**

9. Explain the importance of (*a*) the British North America Act (1867) ;   (*b*) the Australian Commonwealth Act (1900) ;   (*c*) the Union of South Africa (1909).   **(15)**

10. Either—(*a*) Trace the relations between Great Britain and Ireland from 1886 to 1921.

Or (*b*) Explain the origin of the Entente Cordiale between Great Britain and France and estimate its results.   **(15)**

11. Indicate some of the chief (*a*) industrial and (*b*) social changes that have taken place in Scotland since the Great War.   **(15)**

LATIN

LOWER GRADE

Monday, 1st April—9.30 A.M. to 12 NOON

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

1. Translate into English :—

    (*a*) *A Roman defeat is retrieved by a Roman victory*.

Aestate ea, qua haec in Africa gesta sunt, P. Sempronius consul in agro Crotoniensi cum Hannibale in itinere proelium commisit. agminibus magis quam acie pugnatum est. Romani pulsi, et tumultu verius quam pugna mille et ducenti de exercitu consulis interfecti ; in castra trepide reditum, neque oppugnare tamen ea hostes ausi. ceterum silentio proximae noctis profectus inde consul, praemisso nuntio ad P. Licinium proconsulem, ut suas legiones admoveret, copias coniunxit. ita duo duces, duo exercitus ad Hannibalem redierunt ; nec mora dimicandi facta est, cum consuli duplicatae vires, Poeno recens victoria animos faceret. in primam aciem suas legiones Sempronius induxit ; in subsidiis locatae P. Licinii legiones. consul principio pugnae aedem Fortunae vovit, si eo die hostes fudisset ; composque eius voti fuit. fusi ac fugati Poeni ; supra quattuor milia armatorum caesa, paulo minus trecenti vivi capti et equi quadraginta et undecim militaria signa. perculsus adverso proelio Hannibal Crotonem exercitum reduxit.   **(30)**

(b) An African King's respect for a temple of Juno.

Insula est Melita, satis lato a Sicilia mari diiuncta, in qua est eodem nomine oppidum. ab eo oppido non longe in promuntorio fanum est Iunonis antiquum, quod tanta religione fuit ut illis Punicis bellis, quae in his locis gesta sunt, semper inviolatum sanctumque fuerit. quin etiam (sic enim memoriae proditum est), classe quondam Masinissae regis ad eum locum adpulsa, praefectus regius dentes eburneos[1] incredibili magnitudine e fano sustulit, et eos in Africam portavit Masinissaeque donavit. rex primo delectatus est munere ; post cum audivisset unde essent, statim certos homines misit qui eos dentes reponerent. itaque in iis scriptum est litteris Punicis regem Masinissam imprudenter accepisse, re cognita reportandos reponendosque curasse.   (20)

[1] ebur, -oris = ivory.

2. Translate into Latin :—

    (1) How many books will you be able to read in a month ?

    (2) I was told that the queen had been buried at Athens.

    (3) Do not ask me the depth of this lake.

    (4) Since he hates horses, Marcus will not become a cavalryman.

    (5) Do you not remember that Alexander wished to found a new city ?

    (6) Warn them not to send him more money.

    (7) If the sea is calm to-morrow, we shall reach Africa before sunset.

    (8) We are afraid that few of the judges believed that witness.   (23)

3. (a) Give the first person singular of the perfect indicative active of quaero, reddo, fallo, sentio.

    (b) Give the nominative singular masculine of the perfect participle passive of sumo, servo, debeo, veho.

    (c) Give (1) the meaning, (2) the genitive singular, of rupes, metus, scelus, origo, grex, ventus.   (7)

LATIN

HIGHER GRADE—(FIRST PAPER)

Monday, 1st April—9.30 A.M. to 12 NOON

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

Translate into English the following passages :—

1. *Cicero, who is denouncing Verres, describes what happened during his own visit to Syracuse.*

> Repente ad me venit Heraclius, qui tum magistratum Syracusis habebat. agit mecum et cum fratre meo, ut, si nobis videretur, adiremus ad eorum senatum ; frequentes esse in curia ; se iussu senatus a nobis petere ut veniremus. primo nobis dubium fuit quid ageremus ; deinde cito venit in mentem non esse vitandum illum nobis conventum et locum, itaque in curiam venimus. honorifice consurgitur ; nos rogatu magistratus adsedimus. incipit is loqui qui et auctoritate et aetate et, ut mihi visum est, usu rerum antecedebat, Diodorus quidam, cuius omnis oratio hanc habuit sententiam : senatum et populum Syracusanum moleste graviterque ferre quod ego, cum in ceteris Siciliae civitatibus senatum populumque docuissem quid iis utilitatis, quid salutis adferrem, in illa civitate nihil eius modi facerem. respondi neque Romae in conventu Siculorum, cum a me auxilium communi omnium legationum consilio petebatur causaque totius provinciae ad me deferebatur, legatos Syracusanos adfuisse, neque me postulare ut quicquam contra C. Verrem decerneretur in ea curia, in qua C. Verris statuam viderem.   **(35)**

2. *Cadmus, exiled from his father's country, consults the oracle of Apollo concerning his future home.*

> " Bos tibi," Phoebus ait, " solis occurret in arvis,
> nullum passa iugum, curvique immunis aratri ;
> hac duce carpe vias, et, qua requieverit herba,
> moenia fac condas, Boeotiaque[1] illa vocato."

    [1] Boeotius, adjective = Boeotian, Theban.

vix bene Castalio Cadmus descenderat antro,
incustoditam lente videt ire iuvencam,
nullum servitii signum cervice gerentem ;
subsequitur pressoque legit vestigia gressu,
auctoremque viae Phoebum taciturnus adorat.
iam vada Cephisi Panopesque[2] evaserat[3] arva :
bos stetit, et tollens speciosam cornibus altis
ad caelum frontem mugitibus impulit auras ;
atque ita respiciens comites sua terga sequentes
procubuit, teneraque latus submisit in herba.
Cadmus agit grates, peregrinaeque oscula terrae
figit, et ignotos montes agrosque salutat.

[2] Cephisus is a river, and Panope a town, in Greece.
[3] evado is followed by the accusative here.

Scan the first two lines, marking the caesura in each.

(**30**)

3. *King Perseus of Macedon, though defeated and in exile, seems not to realise his position when dealing with the consul.*

Paullus Aemilius consul, cum litteras a rege Perseo per tres legatos allatas accepisset, illacrimasse dicitur sorti humanae, quod qui paulo ante, non contentus regno Macedoniae, Dardanos Illyriosque oppugnasset, is tum amisso exercitu, extorris regno, in parvam insulam compulsus, non viribus suis tutus esset.   sed postquam " Rex Perseus consuli Paullo salutem " legit, miserationem omnem stultitia ignorantis fortunam suam exemit.   itaque, quamquam in reliqua parte litterarum minime regiae preces erant, tamen sine responso ea legatio dimissa est.   sensit Perseus cuius nominis obliviscendum victo esset.   itaque alterae litterae cum privati nominis titulo missae et petiere et impetravere ut aliqui ad eum mitterentur cum quibus loqui de condicione suae fortunae posset.   nihil ea legatione perfectum est, Perseo regium nomen omni vi amplectente, Paullo ut se suaque omnia in fidem populi Romani permitteret contendente. (**25**)

LATIN

HIGHER GRADE—(SECOND PAPER)

Monday, 1st April—1.0 P.M. to 3.0 P.M.

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

1. Translate into Latin prose :—

When returning from the country on February 17th, the King resolved to climb some hills near the road and, leaving his companion, set off alone. These hills are low but steep, and, if one were to slip, death would be certain. Some hours later, as he had not come back, his companion in great alarm sent word to the palace that he had disappeared. When this message was received, the Queen at once gave orders that soldiers should be despatched to search for him. On the following day his body was found among some trees and was brought to the city. The whole nation mourned for the dead king. Not only had he ruled wisely in times of peace, but he had shown himself an intrepid leader in the field. Though his army was small, he had preferred resistance to submission when the German legions invaded his country, and when the war was over he had laboured to repair his shattered realm. No king was ever dearer to his people, none ever deserved better to be called Father of the Fatherland. **(35)**

2. Translate into Latin :—

(1) When were you told that Caesar's daughter had married Pompey ?

(2) Though what you say is true, even your friends will not be able to save you.

(3) Provided that she does not speak to me, your sister may remain here.

(4) Twice this morning I bade my children beware of that dog.

(5) He never makes a speech without exhorting us to build warships as soon as we can.

(6) Suddenly such a storm arose as I had never seen before. I pretended not to be afraid of the huge waves. **(20)**

3. (*a*) Give the first person singular of the perfect indicative, active, and passive, of torqueo, tero, agnosco, occulo, mordeo, adimo.

(*b*) Give the genitive singular, and the meaning, of portus, agger, nepos, anceps.   (5)

GREEK

LOWER GRADE

Friday, 29th March—9.30 A.M. to 12 NOON

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

1. Translate into English :—

(*a*) *The Voyagers land on the Moon.*

Ἑπτὰ δὲ ἡμέρας καὶ τὰς ἴσας νύκτας ἀεροδρομήσαντες ὀγδόῃ καθορῶμεν γῆν τινα μεγάλην ἐν τῷ ἀέρι, καθάπερ νῆσον. προσενεχθέντες δὲ αὐτῇ ἀπέβημεν, ἐπισκοποῦντες δὲ τὴν χώραν εὑρίσκομεν οἰκουμένην τε καὶ γεωργουμένην. ἡμέρας μὲν οὖν αὐτόθεν οὐδὲν καθεωρῶμεν, νυκτὸς δὲ ἐπιγενομένης ἐφαίνοντο ἡμῖν καὶ ἄλλαι πολλαὶ νῆσοι πλησίον, αἱ μὲν μείζους, αἱ δὲ μικρότεραι, καὶ ἄλλη δέ τις γῆ κάτω καὶ πολεῖς ἐν αὐτῇ καὶ ποταμοὺς ἔχουσα καὶ πελάγη καὶ ὕλας καὶ ὄρη. δόξαν δὲ ἡμῖν καὶ ἔτι πορρωτέρω προελθεῖν, συνελήφθημεν ὑπὸ τῶν Ἱππογύπων[1]· συλλαβόντες δὲ ἡμᾶς ἀνάγουσιν ὡς τὸν βασιλέα. ὁ δὲ θεασάμενος, Ἕλληνες ἄρα, ἔφη, ὑμεῖς, ὦ ξένοι ; συμφησάντων δέ, πῶς οὖν ἀφίκεσθε, ἔφη, τοσοῦτον ἀέρα διελθόντες ; καὶ ἡμεῖς τὸ πᾶν αὐτῷ διηγούμεθα. καὶ ὃς τὸ καθ' αὑτὸν ἡμῖν διεξήει, ὡς καὶ αὐτὸς ἄνθρωπος ὢν βασιλεύοι τῆς χώρας. εἶναι δὲ τὴν γῆν ἐκείνην ἔλεγε Σελήνην.   (25)

[1] = Vulture-dragoons.

(b) *Through one of his men Xenophon establishes good relations with the Macrones.*

Ἔνθα δὴ προσέρχεται Ξενοφῶντι τῶν πελταστῶν ἀνὴρ Ἀθήνησι φάσκων δεδουλευκέναι, λέγων ὅτι γιγνώσκοι τὴν φωνὴν τῶν ἀνθρώπων. καὶ οἶμαι, ἔφη, ἐμὴν ταύτην πατρίδα εἶναι· καὶ εἰ μή τι κωλύει, ἐθέλω αὐτοῖς διαλεχθῆναι. ἀλλ' οὐδὲν κωλύει, ἔφη, ἀλλὰ διαλέγου καὶ μάθε πρῶτον τίνες εἰσίν. οἱ δ' εἶπον ἐρωτήσαντος ὅτι Μάκρωνες. ἐρώτα τοίνυν, ἔφη, αὐτοὺς τί ἀντιτεταγμένοι εἰσὶ καὶ χρήζουσιν ἡμῖν πολέμιοι εἶναι. οἱ δ' ἀπεκρίναντο ὅτι καὶ ὑμεῖς ἐπὶ τὴν ἡμετέραν χώραν ἔρχεσθε. λέγειν ἐκέλευον οἱ στρατηγοὶ ὅτι οὐ κακῶς γε ποιήσοντες, ἀλλὰ βασιλεῖ πολεμήσαντες ἀπερχόμεθα εἰς τὴν Ἑλλάδα, καὶ ἐπὶ θάλατταν βουλόμεθα ἀφικέσθαι. ἠρώτων ἐκεῖνοι εἰ δοῖεν ἂν τούτων τὰ πιστά. οἱ δ' ἔφασαν καὶ δοῦναι καὶ λαβεῖν ἐθέλειν. ἐντεῦθεν διδόασιν οἱ Μάκρωνες βαρβαρικὴν λόγχην τοῖς Ἕλλησιν, οἱ δὲ Ἕλληνες ἐκείνοις Ἑλληνικήν· ταῦτα γὰρ ἔφασαν πιστὰ εἶναι· θεοὺς δ' ἐπεμαρτύραντο ἀμφότεροι.   (25)

2. Translate into Greek :—
   (1) Take care not to write badly.
   (2) Do you not know that his father is dead ?
   (3) On hearing that, she immediately ran to the harbour.
   (4) He is so poor that he wishes to sell all his oxen.
   (5) I went on board the ship without the sailors seeing me.
   (6) Why do you think that Athens is more beautiful than your own city ?
   (7) I told him not to burn these books to-day.   (21)

3. (a) Give the first person singular of the future indicative active, and of the aorist indicative active, of εὑρίσκω, αἴρω, τίθημι, ἐλαύνω, στέλλω, ἀπόλλυμι.
   (b) Give the nominative plural and the dative plural of ναῦς, γένος, γέρων, ποιμήν, χρῆμα, γείτων.   (9)

GREEK

HIGHER GRADE—(FIRST PAPER)

Friday, 29th March—9.30 A.M. to 12 NOON.

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

Translate into English :—

1. *Callistratus tells how Olympiodorus behaved after the death of Conon.*

Ἦν γάρ, ὦ ἄνδρες δικασταί, Κόνων τις, οἰκεῖος ἡμέτερος. ἐτελεύτησε δ' ἄπαις ὀλίγον πάνυ χρόνον ἀρρωστήσας. καὶ ἐγώ, ἐπειδὴ ᾐσθόμην ὅτι οὐχ οἷός τε ἔσται περιγενέσθαι, μετεπεμψάμην τουτονὶ 'Ολυμπιόδωρον, ὅπως ἂν παρῇ καὶ συνεπιμελῆται μεθ' ἡμῶν πάντων ὧν προσῆκεν. καὶ 'Ολυμπιόδωρος, ἐπειδὴ ἦλθεν ὡς ἐμὲ καὶ τὴν ἀδελφὴν τὴν ἑαυτοῦ, ἐμὴν δὲ γυναῖκα, μεθ' ἡμῶν ἅπαντα διῴκει. ὄντων δ' ἡμῶν περὶ ταύτην τὴν πραγματείαν, ἐξαίφνης λόγον μοι προσφέρει, ὅτι καὶ ἡ μήτηρ αὐτοῦ προσήκουσα εἴη τῷ Κόνωνι τῷ τετελευτηκότι, καὶ ὅτι δίκαιον εἴη καὶ αὐτὸν τὸ μέρος λαβεῖν ἁπάντων ὧν ὁ Κόνων κατέλιπεν. καὶ ἐγὼ συνειδὼς ὅτι ἐψεύδετο καὶ ἀναισχυντεῖν ἐπεχείρει, καὶ ὅτι οὐδεὶς ἦν ἄλλος τῷ Κόνωνι γένει ἐγγυτέρω ἐμοῦ, τὸ μὲν πρῶτον ὡς οἷόν τε μάλιστα ὠργίσθην, καὶ ἠγανάκτησα ἐπὶ τῇ ἀναισχυντίᾳ τοῦ λόγου· ἔπειτα δ' ἐλογισάμην πρὸς ἐμαυτὸν ὅτι οὐκ ἐν καιρῷ ὀργιζοίμην, καὶ τούτῳ ἀπεκρινάμην ὅτι ἐν μὲν τῷ παρόντι προσήκει ποιεῖν τὰ νομιζόμενα, ἐπειδὰν δὲ τούτων ἁπάντων ἐπιμεληθῶμεν, τόθ' ἡμῖν αὐτοῖς διαλεξόμεθα.   **(35)**

2. *Athenian and Spartan naval operations ; carelessness of the Athenian commanders.*

Οἱ δὲ Ἀθηναῖοι ἅμα τῷ ἡλίῳ ἀνίσχοντι ἐπὶ τῷ λιμένι παρετάξαντο ὡς εἰς ναυμαχίαν. ἐπεὶ δὲ οὐκ ἀντανήγαγε Λύσανδρος, καὶ τῆς ἡμέρας ὀψὲ ἦν, ἀπέπλευσαν πάλιν εἰς τοὺς Αἰγὸς ποταμούς. Λύσανδρος δὲ τὰς ταχίστας τῶν νεῶν ἐκέλευσεν ἕπεσθαι τοῖς Ἀθηναίοις, ἐπειδὰν δὲ ἐκβῶσι, κατιδόντας ὅ τι ποιοῦσιν ἀποπλεῖν καὶ αὐτῷ ἐξαγγεῖλαι. καὶ οὐ πρότερον ἐξεβίβασεν ἐκ τῶν νεῶν πρὶν αὗται ἧκον. ταῦτα δ᾽ ἐποίει τέτταρας ἡμέρας· καὶ οἱ Ἀθηναῖοι ἐπανήγοντο. Ἀλκιβιάδης δὲ κατιδὼν ἐκ τῶν τειχῶν τοὺς μὲν Ἀθηναίους ἐν αἰγιαλῷ ὁρμοῦντας καὶ πρὸς οὐδεμιᾷ πόλει, τὰ δ᾽ ἐπιτήδεια ἐκ Σηστοῦ μετιόντας πεντεκαίδεκα σταδίους ἀπὸ τῶν νεῶν, τοὺς δὲ πολεμίους ἐν λιμένι καὶ πρὸς πόλει ἔχοντας πάντα, οὐκ ἐν καλῷ ἔφη αὐτοὺς ὁρμεῖν, ἀλλὰ μεθορμίσαι εἰς Σηστὸν παρῄνει πρός τε λιμένα καὶ πρὸς πόλιν· οὗ ὄντες. ναυμαχήσετε, ἔφη, ὅταν βούλησθε. οἱ δὲ στρατηγοί, μάλιστα δὲ Τυδεὺς καὶ Μένανδρος, ἀπιέναι αὐτὸν ἐκέλευσαν· αὐτοὶ γὰρ νῦν στρατηγεῖν, οὐκ ἐκεῖνον.

(30)

3. **Either** (*a*) **or** (*b*)—

(*a*) *A Trojan envoy brings certain proposals to the Greeks.*

Ἠῶθεν δ᾽ Ἰδαῖος ἔβη κοίλας ἐπὶ νῆας.
τοὺς δ᾽ εὗρ᾽ εἰν ἀγορῇ Δαναούς, θεράποντας Ἄρηος,
νηῒ πάρα πρύμνῃ Ἀγαμέμνονος· αὐτὰρ ὁ τοῖσι
στὰς ἐν μέσσοισιν μετεφώνεεν ἠπύτα κῆρυξ,
"᾽Ατρεΐδη τε καὶ ἄλλοι ἀριστῆες Παναχαιῶν,
ἠνώγεον Πρίαμός τε καὶ ἄλλοι Τρῶες ἀγαυοὶ
εἰπεῖν, αἴ κέ περ ὔμμι φίλον καὶ ἡδὺ γένοιτο,
μῦθον Ἀλεξάνδροιο, τοῦ εἵνεκα νεῖκος ὄρωρε.

κτήματα μὲν ὅσ' Ἀλέξανδρος κοίλης ἐνὶ νηυσὶν
ἠγάγετο Τροίηνδ' — ὡς πρὶν ὤφελλ' ἀπολέσθαι —
πάντ' ἐθέλει δόμεναι, καὶ ἔτ' οἴκοθεν ἄλλ' ἐπιθεῖναι ·
κουριδίην δ' ἄλοχον Μενελάου κυδαλίμοιο
οὔ φησιν δώσειν · ἦ μὴν Τρῶές γε κέλονται.
καὶ δὲ τόδ' ἠνώγει εἰπεῖν ἔπος, αἴ κ' ἐθέλητε
παύσασθαι πολέμοιο δυσηχέος, εἰς ὅ κε νεκροὺς
κήομεν · ὕστερον αὖτε μαχησόμεθ', εἰς ὅ κε δαίμων
ἄμμε διακρίνῃ, δώῃ δ' ἑτέροισί γε νίκην.''

Scan the fifth and sixth lines, marking the caesura
in each.   (30)

(b) *Andromache, realising that her young son may be put
to death, is willing to die in his stead.*

Τί δῆτ' ἐμοὶ ζῆν ἡδύ ;   πρὸς τί χρὴ βλέπειν ;
πρὸς τὰς παρούσας ἢ παρελθούσας τύχας ;
εἷς παῖς ὅδ' ἦν μοι λοιπὸς ὀφθαλμὸς βίου ·
τοῦτον κτενεῖν μέλλουσιν οἷς δοκεῖ τάδε.
οὐ δῆτα τοὐμοῦ γ' εἴνεκ'[1] ἀθλίου βίου ·
ἐν τῷδε μὲν γὰρ ἐλπίς, εἰ σωθήσεται,
ἐμοὶ δ' ὄνειδος μὴ θανεῖν ὑπὲρ τέκνου.
ὦ τέκνον, ἡ τεκοῦσά σ', ὡς σὺ μὴ θάνῃς,
στείχω πρὸς ''Αιδην · ἢν δ' ὑπεκδράμῃς μόρον,
μέμνησο μητρός, οἷα τλᾶσ' ἀπωλόμην,
καὶ πατρὶ τῷ σῷ διὰ φιλημάτων ἰὼν
δάκρυά τε λείβων καὶ περιπτύσσων χέρας
λέγ' οἷ' ἔπραξα.   πᾶσι δ' ἀνθρώποις ἄρ' ἦν
ψυχὴ τέκν' ·   ὅστις δ' αὐτ' ἄπειρος ὢν ψέγει,
ἧσσον μὲν ἀλγεῖ, δυστυχῶν δ' εὐδαιμονεῖ.

[1] εἴνεκα = so far as depends on.

Scan the lines beginning καὶ πατρὶ and δάκρυα, marking
the caesura in each.   (30)

GREEK

HIGHER GRADE—(SECOND PAPER)

Friday, 29th March—1.0 P.M. to 3.0 P.M.

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

1. Translate into Greek :—

When I arrived, my friend received me kindly and asked me what I should like to see. I replied that I was very desirous of seeing their city, of which I had heard so much. On the next day he took me there. In the midst of the city there were many tall trees, beneath the shade of which philosophers were talking about the gods and virtue, and matters of that sort. The rest of the citizens, said he, often envy them, and sometimes hate them, but many entrust their sons to them to be educated. At this I marvelled exceedingly, and observed to him that in my country parents themselves educate their children. Then I asked him which he thought the better way, but he refused to answer. **(35)**

2. Translate into Greek :—
   (1) I fear that they will not use their freedom wisely.
   (2) We ought to wait here until he returns with food and wine.
   (3) Do not tell anybody that her horse ran much faster than mine.
   (4) When she hears you singing, she always begins to laugh.
   (5) We asked them many questions, but it was evident that they knew nothing about the affair. **(14)**

3. (*a*) Give the first person singular of the aorist indicative active of
        πίνω, περιβάλλω, ἐφορῶ, ἄγω, ἀποπλέω.
   (*b*) Give the first person singular of the aorist indicative of
        οἴομαι, μάχομαι, ὑπισχνοῦμαι.
   (*c*) Give the genitive singular of
        αἰδώς, τέλος, πρόφασις, συμφορά. **(6)**

FRENCH

Lower Grade

Thursday, 28th March—9.30 a.m. to 12 noon

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

Translate into English :—

1. *Margot s'en va à Paris.*

Margot grimpa dans la voiture, et le cheval allait partir, lorsqu'on entendit un si gros sanglot que tout le monde se retourna. On aperçut alors un petit garçon de quatorze ans à peu près, auquel on n'avait pas fait attention. Il s'appelait Pierrot, et son métier n'était pas bien noble, car il était gardeur de dindons ; mais il aimait passionnément Margot. Margot aimait aussi ce pauvre petit diable ; elle lui avait donné maintes fois une poignée de cerises ou une grappe de raisin pour accompagner son pain sec. Comme il ne manquait pas d'intelligence, elle se plaisait à le faire causer et à lui apprendre le peu qu'elle savait, et, comme ils étaient tous deux presque du même âge, il était souvent arrivé que, la leçon finie, la maîtresse et l'écolier avaient joué ensemble à cache-cache[1]. En ce moment, Pierrot portait une paire de sabots que Margot lui avait donnée, ayant pitié de le voir marcher pieds nus. Debout dans un coin de la cour, entouré de son modeste troupeau, Pierrot regardait ses sabots et pleurait de tout son cœur. Margot lui fit signe d'approcher et lui tendit sa main ; il la prit et la porta à son visage, comme s'il eût voulu la baiser, mais il la posa sur ses yeux ; Margot la retira toute baignée de larmes. Elle dit une dernière fois adieu à sa mère, et la voiture se mit en marche.

<div align="right">*A. de Musset.* (25)</div>

[1] cache-cache = hide and seek.

2. *L'Enfance de Geneviève.*

Notre père était trop pauvre pour donner une servante à ma mère, et j'étais trop petite pour faire toute seule le ménage. Les voisins venaient bien de bon cœur, quand je les priais, tirer pour nous le seau du puits et mettre la grosse

bûche[1] au feu ; mais ma mère et moi nous faisions tout le reste ; et moi, j'étais fière, toute petite que j'étais, de me sentir utile comme une grande personne à la maison.   Cela m'avait rendu attentive, sérieuse, raisonnable avant l'âge de huit ans.   Elle me disait : " Geneviève, il me faut cela, il me faut ceci ; apporte-moi ta petite sœur Josette sur mon lit, remporte-la dans son berceau et berce-la du bout de ton pied jusqu'à ce qu'elle dorme ; va me chercher mon bas, va couper un chou-fleur au jardin, va au poulailler tâter s'il y a des œufs chauds dans le nid des poules ; hache des choux pour faire la soupe à ton père, bats[2] le beurre, mets du bois au feu, étends la nappe, rince les verres, descends à la cave chercher une bouteille de vin."

Tous les jours se passaient ainsi ; je me levais la première, je me couchais la dernière.   Je ne respirais l'air que par la fenêtre, je ne voyais le soleil que sur le seuil de la porte, et voilà pourquoi j'avais le visage blanc.

Lamartine.   (**25**)

[1] bûche = log.   [2] battre = to churn.

3. Translate into French :—

While the old woman was sleeping, the two children left the house and set off to look for the lake. . Soon they came to a large wood, where there were many beautiful flowers. Little Nell gathered some, but they withered[1] very quickly, and she threw them into a hole beneath the trees.

They had been walking for an hour, when Nell said : " I am thirsty."   " So am I," said George, " but I do not see any stream, and there is nothing to drink."   As they were speaking, they saw a peasant, who was carrying fruit in a basket.   They asked him for some cherries, and George gave him in exchange[2] one of his pieces of silver.   (**20**)

[1] to wither = se faner.   [2] in exchange = en échange.

4. Translate into French :—
   (1) We always spend the summer with friends at the sea-side.
   (2) Shut the door, please.   The window is open, and it is cold.
   (3) When I take the letters to the post, I will buy some post-cards.
   (4) Tell us what you want, and we shall give it to you.
   (5) I am not satisfied with the books I bought last week.
(**10**)

FRENCH

HIGHER GRADE—(FIRST PAPER)

Thursday, 28th March—9.30 A.M. to 11.30 A.M.

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

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

1.   *La Révolution française et l'Europe.*

La France fit mieux que de vaincre l'Europe ; elle la convertit. La civilisation française, qui avait préparé les victoires des armées, y survécut. Elle avait percé les avenues par lesquelles les armées s'élancèrent en Europe ; les armées, en se retirant, ouvrirent à la Révolution française des routes plus larges et plus profondes. Victorieux jusque dans leur défaite, les Français gagnèrent à leurs idées les nations mêmes qui s'étaient révoltées contre leur domination. Ils ne cessèrent de bouleverser par leur politique les vieilles frontières que pour transformer par leurs principes les anciennes lois. Les princes les plus hostiles, les plus ardents à refouler la Révolution en France, afin de l'y écraser d'un seul coup, virent, en revenant de cette croisade, cette révolution germer, pour ainsi dire, dans le sol de leurs Etats, labouré si longtemps par les armées françaises et fécondé de leur sang. La Révolution française ne cessa d'être une cause de lutte entre la France et l'Europe, que pour engendrer sur le continent une révolution politique et sociale qui a changé, en moins d'un demi-siècle, la face du monde européen.

                                        Albert Sorel.   **(25)**

2.   *Sommeil à Deux.*

　　　Dans un grand fauteuil, l'aïeule est assise,
　.　Et l'humble foyer flambe en pétillant.
　　　Près d'elle, accroupie, une chatte grise
　　　Fixe sur la flamme un œil scintillant.

La dame médite un verset biblique :
Sur ses deux genoux, le livre est ouvert.
La chatte, plissant sa paupière oblique,
Près de s'endormir, cligne son œil vert.

Et l'aïeule aussi, d'idée en idée,
Vers la sainte page, après maint effort,
Penche lentement sa tête ridée,
La lève en sursaut, puis cède, et s'endort.

La dame sourit, la chatte frissonne ;
Chacune a son rêve et remue un peu :
La chatte au grenier guerroie[1] et moissonne,
La dame est au ciel et cause avec Dieu.

Et la vieille horloge au mur se balance,
Mesurant chaque heure au sommeil humain ;
Et seule, au milieu du profond silence,
Avec un bruit sec poursuit son chemin.

<div align="right">*E. Manuel.*   (25)</div>

[1] cf. la guerre.

3.   *Une Promenade champêtre.*

Un jour, c'était vers la fin d'avril, je quittai la ville de
bonne heure et m'en allai seul, au hasard, me promener sur
les grandes routes.   Les ormeaux n'avaient point encore de
feuilles, mais ils se couvraient de bourgeons ; les prairies
ne formaient qu'un vaste jardin fleuri de marguerites ; les
haies d'épines étaient en fleur ; le soleil, vif et chaud, faisait
chanter les alouettes et semblait les attirer plus près du ciel,
tant elles pointaient[1] en ligne droite et volaient haut.   Il y
avait partout des insectes nouveau-nés que le vent balançait
comme des atomes de lumière à la pointe des grandes herbes,
et des oiseaux qui, deux à deux, passaient à tire-d'aile et
se dirigeaient soit dans les foins, soit dans les blés, soit dans
les buissons, vers des nids qu'on ne voyait pas.   De loin en
loin se promenaient des malades ou des vieillards que le
printemps rajeunissait ; et dans les endroits plus ouverts au
vent, des troupes d'enfants lançaient des cerfs-volants[2] à
longues banderoles frissonnantes, et les regardaient à perte
de vue, fixés dans le clair azur comme des écussons[3] blancs,
ponctués de couleurs vives.

<div align="right">*E. Fromentin.*   (20)</div>

[1] pointer = to soar.   [2] cerfs-volants = kites.
[3] écusson = shield.

FRENCH

Higher Grade—(Second Paper)

Thursday, 28th March—1.0 p.m. to 1.30 p.m.

This Paper must not be seen by any candidate.
To be read out by the Teacher at 1.0 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. *Inform the candidates that they may not ask for the repetition of any word or phrase.*
2. *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.*
3. *Then dictate the passage slowly, saying each group of words (as indicated by vertical lines) twice, and pronouncing every word very distinctly. The punctuation should be indicated thus :—(.) 'un point,' (,) 'virgule,' (;) '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.*

DICTATION

En revenant de nos promenades | à la campagne, | notre mère nous conduisait | dans les pauvres maisons | des malades | ou des‿indigents du village. | Elle s'approchait de leurs lits ; | elle leur donnait | quelques conseils | et quelques remèdes. | Je l'ai vue souvent debout, | assise ou à genoux | au chevet des grabats de chaumière, | ou dans les‿étables | où les paysans couchent | quand ils sont devenus vieux. | Je l'ai vue | essuyer de ses mains | la sueur froide des pauvres mourants, | les retourner sous leurs couvertures, | leur réciter | les prières du dernier moment, | et attendre patiemment | des‿heures‿entières | que leur âme eût passé à Dieu, | au son de sa douce voix. | Elle faisait de nous‿aussi | les ministres de ses‿aumônes. |

Nous étions sans cesse occupés, | moi surtout | comme le plus grand, | à porter au loin | dans les maisons isolées de la montagne, | tantôt un peu de pain blanc, | tantôt une bouteille de vin vieux | et des morceaux de sucre, | tantôt un peu de bouillon fortifiant | pour les vieillards | épuisés faute de nourriture. | **(10)**

FRENCH

HIGHER GRADE—(SECOND PAPER)

Thursday, 28th March—1.45 P.M. to 3.45 P.M.

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

1. Translate into French :—

" And what then should I do ? " asked the professor.

" Take exercise ; work less," said the doctor. " Don't stop all the time in your study[1] among your books ; enjoy nature, which you hate so much, and take walks in the open air."

The professor appeared to be extremely annoyed. " It is your fresh air," he said, " of which our ancestors knew nothing, that kills all our modern scholars. They are its slaves for a few years, and expose their bodies to it for two or three hours a day, in all weathers, in snow and rain—and then they catch cold, and finally die. It's idiotic."

" Then go into society," replied the doctor. " Go to the theatre, enjoy yourself, play golf, but at all costs do not shut yourself up in your study all day long, and don't overwork."

The professor rose, stood in front of his friend, and looked at him for a long time with wide open eyes, without saying a word : he could find no words to express the contempt he must have felt. At last he turned round quickly, and, sitting down at his table, proceeded to arrange his papers, and appeared to be busy looking for something. Not finding it, he walked up and down[2] the room, and then, as if struck by a sudden thought, emptied out the basket and searched anew.   **(35)**

[1] le cabinet.   [2] up and down = de long en large.

2. Translate into French :—

    (1) He speaks several languages, but he has difficulty in making himself understood in Paris.

    (2) She thought she was too clever to be deceived, but she was wrong.

    (3) After spending several years in Germany, he came back to England and settled in London.

    (4) Whatever you do, do it well.   It is not worth while working badly.

    (5) If our friends had not arrived so late, we might have thought of going to the concert.   **(15)**

3. Write in French a continuous story based on the following summary. The story should be about one and a half times the length of your answer to question 1 and should on no account exceed twice that length. **Failure to comply with this instruction may lead to a loss of marks :—**

    Old lady has tame jackdaw (*un choucas*)—arranging jewels one day with favourite servant—both leave room— jackdaw flies in at window, steals a necklace (*un collier*), and drops it into a well—lady suspects servant—finally dismisses her — later, well goes dry — necklace found by lady's grandson—

        (*Complete the story in your own way.*)   **(20)**

GERMAN

Lower Grade

Tuesday, 2nd April—9.30 a.m. to 12 noon

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing. Failure to use the German script in the answers to questions 3 and 4 will lead to a loss of marks.

1. Translate into English :—

A Youthful Fugitive.

Da dachte Edgar an seine Großmutter, diese alte, gute Frau, die ihn von Kindheit an innig geliebt hatte, und der Wunsch sie wieder zu sehen wurde immer größer. Aber wie sollte er die weite Reise nach Berlin bezahlen? Schnell öffnete er seine kleine lederne Börse, die er immer bei sich trug. Gott sei Dank, darin lag noch das goldene Zwanzigmarkstück, das ihm sein Onkel zum Geburtstag geschenkt hatte. Nie hatte er sich entschließen können es auszugeben. Aber fast täglich hatte er nachgesehen, ob es noch da sei, und hatte dann immer die Münze sorgfältig mit seinem Taschentuch geputzt, bis sie glänzte wie eine kleine Sonne. Aber—der Gedanke erschreckte ihn—würde das genug sein? Schüchtern schlich er an die Kasse und fragte leise, damit niemand ihn hören könne, wieviel eine Fahrkarte nach Berlin koste. „Sechs Mark!" „Bitte!" Froh legte er das geliebte Stück hin und erhielt Silber zurück. Nun, da er das Billett in der Hand hatte, das ihm die Freiheit verschaffen würde, fühlte er sich reich und glücklich. Man sagte ihm, der Zug werde in zwanzig Minuten ankommen. Er setzte sich auf eine Bank. Ein paar Leute standen auf dem Bahnsteig, unbeschäftigt und ohne Gedanken. Aber dem Knaben war, als sähen alle nur ihn an und wunderten sich, daß so ein Kind schon allein fahre; und als wäre ihm die Flucht auf der Stirne geschrieben. (25)

2. Translate into English :—

A Memorable Day in School.

Es war in schwüler Julizeit; die Gassen
Im Städtchen draußen lagen stumm verlassen,
Und schläfrig klang vom Turm das Glockenspiel
Ins Schulgemach, wo schmal wie goldener Duft
Ein Sonnenstreif[1] ans Wandgetäfel[2] fiel.

[1] = sunbeam.
[2] = wainscoting.

Die Fliegen summten müde durch die Luft,
Und müde lag es auf der Knaben Lidern,[3]
Die auf des alten Römers Weisheit tief
Herniedernickten, nur ein Flüstern lief
Verstohlen rund, ein Blick, ein kurz Erwidern,
Und alles still, und selbst der Lehrer schlief.
Die Blicke aller aber streiften scheu
Den Platz zur Rechten mir, der leer heut war;
Dort saß mein Nachbar sonst; wir hielten treu
Zusammen stets in Not und in Gefahr.
Und langsam von der Wand herniedersank
Der Sonnenstreifen[1] auf die leere Bank,
Es war der Zeiger[4] der erharrten Stunde;
Wir ließen Cäsar mitten in der Schlacht,
Der Lehrer schloß, fast eh' wir's noch gedacht,
Das Buch und blickte flüchtig in die Runde
Und sagte: „Heinrich Wolf ist heute Nacht
Verschwunden."

[1] = sunbeam.
[3] das Lid (plur. Lider) = eyelid.
[4] = hour-hand. **(25)**

3. Translate into German :—
   (1) Will you come with me to the theatre to-night ?
      I shall buy the tickets.
   (2) As the weather was so fine, we decided to climb
      the hill.
   (3) He walked slowly along the street till he reached
      the station.
   (4) He bought ten cigars at threepence each and also
      a pound of chocolates for the children.
   (5) I should like to know if you can meet me to-morrow
      morning at 10 o'clock. **(15)**

4. Translate into German :—
   The river we see on the picture is the Rhine not far from
the town of Cologne. On the left bank are trees and a few
houses, which form part of a very pretty village. An island
lies in the middle of the stream. On the right side are hills,
and on one of them stands an old castle. In summer many
steamers are seen on the river. It is very pleasant to spend
a few hours on one of these steamers. **(15)**

GERMAN

Higher Grade—(First Paper)

Tuesday, 2nd April—9.30 A.M. to 11.30 A.M.

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

N.B.—Begin the answer (or fair copy of an answer) to each
question on a fresh page. Write legibly and neatly,
and leave a space of half an inch between the lines.
Marks may be deducted for bad or crowded writing.

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

1.   *Oh to be a Goose-herd !*

Ich war acht, er etwa zehn Jahre alt, ich war das
Töchterlein vom Herrenhause, er der Sohn unseres Schmieds.

Am Morgen, wenn ich mit Mama auf dem Balkon
Kaffee trank, pflegte er mit seinen Gänsen unten vor=
beizuziehen und nach der Heide hin zu verschwinden. Wie
er aussah? Noch steht er lebendig vor mir: die schlichten,
blonden Haare hingen ihm wie ein gelbes Strohdach auf
die gebräunten Wangen hernieder, schlau und lustig guckten
die blauen Augen darunter hervor ; die zerrissenen Bein=
kleider hatte er bis über die Knie aufgeschlagen, und in der
Hand hielt er eine schlanke Weidengerte,[1] in deren grüne
Rinde er mit kunstgeübter Hand eine spiralige Reihe weißer
Ringe hineingeschnitten hatte. An diese Gerte[1] heftete sich
zuerst meine kindliche Begehrlichkeit. Ich fand es entzückend,
ein solches Wunderwerk, das so ganz anders geartet war
als all mein Spielzeug, in der Hand zu halten, und wenn
ich mir noch ausmalte, Gänse damit jagen und barfuß
gehen zu dürfen, so war der Gipfel irdischer Glückseligkeit
für mich erreicht. Mit neiderfülltem Herzen schaute ich ihm
nach. Er durfte Gänse hüten, ich aber mußte hinauf zu
Mademoiselle, französische Vokabeln lernen. Ja, das Glück
ist ungerecht verteilt auf dieser Welt ! Ich sah ihn auf der

    [1] Weidengerte ⎱
        Gerte   ⎰ = switch.

sonnigen Heide im Grase liegen und seine Flöte[2] blasen, während ich mich mit scheußlichen Vokabeln quälte, und immer stärker wurde die Sehnsucht in mir, jenes Glückes, das sich Gänsehüten nennt, teilhaftig zu werden.   **(25)**

[2] Flöte = flute, pipe.

2.   *Nightfall in the Country.*

Glocken über die Fluren
Hör' ich vom Lande her wehn
Und kann schon die Konturen[1]
Der runden Türme nicht mehr sehn.

Die Nacht, das Meer, zwei blaue Bänder,
Durchflickt mit Sternengold,
Haben die Ränder
Der Insel in ihre Falten gerollt.
Alles wird Ferne und
Sinkendes Schweigen.
Wortlos neigen
Die Winde sich nahe an meinen Mund.

Weit und wie ohne Wiederkehr
Scheint dies alles, das mir entgleitet,
Die braunen Hügel, das blinkende Meer,
Die Bäume, die winkend im Hafen stehn,
Die Glocken, die über die Wasser wehn.
Und ich bin schon bereitet
Ins Dunkel, das sich drohend verbreitet,
Mit ihnen zu gehn.

Da weht von den späten
Gehöften[2] zwischen den Hügeln, die
Mit leisem Schritt in den Abend treten,
Noch eine schüchterne Melodie.
Und süß ergriffen höre ich, wie
Kinder zu Gott in das Dunkel hinein
Um Schlaf und gütige Träume beten.

[1] Konturen = Umrisse (contours, outlines).
[2] Gehöft = Bauernhof.   **(25)**

3.   *The Retreat from Moscow.*

Tag für Tag kamen sie jetzt auf der Landstraße heran, in der Regel, sobald die Abenddämmerung und der eisige Winternebel über den Häusern lag. Dämonisch erschien das lautlose Erscheinen der schrecklichen Gestalten, entsetzlich die Leiden, welche sie mit sich brachten. Die Kälte in ihren Leibern sei nicht fortzubringen, ihr Hunger sei nicht zu stillen, behauptete das Volk. Wurden sie in ein warmes Zimmer geführt, so drängten sie mit Gewalt an den heißen Ofen, als wollten sie hineinkriechen. Vergebens mühten sich mitleidige Hausfrauen sie von der verderblichen Glut zurückzuhalten. Gierig verschlangen sie das trockene Brot. Einzelne vermochten nicht aufzuhören, bis sie starben. Überall in den Städten wurden für die Heimkehrenden Lazarette eingerichtet, und sogleich waren alle Krankenstuben überfüllt. Giftige Fieber verzehrten dort die letzte Lebenskraft der Unglücklichen, und auch der Bürger mußte sich hüten, daß die Ansteckung nicht in sein Haus drang. Die wenigen Fremden, die noch einen Rest von Kraft hatten, schlichen nach notdürftiger Ruhe müde und hoffnungslos der Heimat zu.   (20)

GERMAN

HIGHER GRADE—(SECOND PAPER)

Tuesday, 2nd April—1.0 P.M. to 1.30 P.M.

This paper must not be seen by any candidate.

To be read out by the Teacher at 1.0 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. *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.*

2. *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.*

3. *Then dictate the passage slowly, saying each group of words (as indicated by vertical lines) twice, and pronouncing every word very distinctly. The punctuation should be indicated thus—(,) 'Komma', (;) 'Semifolon', (:) 'Doppelpunkt', (!) 'Ausrufungszeichen', (.) 'Punkt'.*

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

The Saxon Duke Widukind.

In Deutschland war Winter. | Scharf pfiff der Nordwind | über die sächsischen Wälder; | die Zweige des Eichwaldes | zitterten und froren. | Sterne blickten über leerem Lande; | blasses Schneelicht, | soweit der Gedanke flog! | An einem Baume am Waldrande | lehnte ein hoher Krieger: | in den Mantel gehüllt, | die Arme über der Brust gekreuzt, | das buschige Auge | regungslos hinausgerichtet | auf einen fernen Punkt. | Tief dort | im Dämmer der Mondnacht | funkelte König Karls Heerlager. | Eine Welt war in Aufruhr | im Herzen dieses einsamen Mannes; | eine Welt | voll Schmerz und Weh. | Aber keinen Seufzer | fand er | in dieser entscheidenden Nacht; | die Zähne biß er zusammen, | in keinem Laute | gab er seinem Herzweh Luft. | Starr und kalt stand er, | eine Eiche unter Eichen. | Das war der Sachsenherzog Widukind.   **(10)**

GERMAN

HIGHER GRADE—(SECOND PAPER)

Tuesday, 2nd April—1.45 P.M. to 3.45 P.M.

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing. German script must be used in the answer to question 1 ; in the other questions the use of it is optional.

1. Translate into German :—

    I soon went again to the palace, and the princess gave me her hand, which I was allowed to kiss ; and then she brought me her children, the young princes and princesses, and we played together as if we had known each other for years. Those were happy days, when after school hours— for I already went to school—I might go up to the palace to play. There we had all that our hearts could desire— all sorts of playthings, which my mother had shown me in the shop windows, and which she told me were so dear that poor people could live a whole week on the money they cost. If I asked the princess, she would let me take them home to show to my mother ; sometimes indeed she gave me them to keep. Beautiful picture-books which I had seen at the bookseller's, but which were only for very good children—these I could study for hours. All that belonged to the young princes belonged to me. **(35)**

2. (*a*) Translate into German :—

    (1) "Hamelin Town's in Brunswick
        By famous Hanover city."

    (2) I am looking forward to my visit to Germany next summer.

    (3) The higher we climbed up the hill the steeper the path became.

(*b*) Translate into English :—

    (1) Er fährt mit der Elektrischen, und der Schaffner zeigt ihm die Haltestelle wo er umsteigen muß.

    (2) Nach dem Konzert wurde das Grammophon ange=stellt, und wir hatten schöne Platten mit Walzern und Bauerntänzen.   **(10)**

3. Write in German a continuous story based on the following summary. The story should be about one and a half times the length of your answer to question 1 and should on no account exceed twice that length. **Failure to comply with this instruction may lead to a loss of marks :—**

    Scene, a country cottage—large garden in front—beautiful flowers—old lady sitting at breakfast—sees postman at gate—meets him—a chat—receives three letters—one from son in India—another from neighbour on holiday—third ?

(*Expand the summary and complete the story as you think fit.*)

(25)

GAELIC

. Lower Grade

Tuesday, 2nd April—9.30 A.M. to 12 NOON

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing and for bad spelling.

1. Translate into English, paying careful attention to idiom :—

Bha bothan beag tighe an oir na coille mu thuaiream dà mhìle dh' astar uainn.   C' arson a thogadh am bothan so an tùs chan fhios domh, ach aig an ám air a bheil mi 'g iomradh, bha sinn a' dèanamh tigh-sgoile dheth.   A réir coltais, cha do thogadh òrd no inneal iaruinn sam bith air clachan an teampuill so ; ni mò a chaidh aol no làthach a thogail a bhallachan.   Bha toll trì-chearnach air gach balla-taoibh dheth a bha dèanamh gnothaich air son uinneagan ; ach uinneag de sheòrsa 'sam bith cha deach riamh a chur annta, is bha iad mar sin fosgailte ris na siantan.   Bha toll eile am mullach an tighe, coltach gu leòir air son luidheir ; ach chan fhiosrach mi gun d' amais an toit riamh air dol a mach an rathad sin.   Cha robh de dhorus air an fhàrdaich so ach sgathach bheithe nach cumadh a mach aon chuid gaoth no uisge.   'Nuair a bhiodh an sneachd 'ga chur 's 'ga chathadh chuireamaid sgroth 'san uinneig taobh na gaoithe, ach bha cho beag dìon anns an sgathaich 's gum biodh an sneachd cho domhain air ùrlar an tighe 's a bhiodh e air a' bhlàr a muigh.   Bha am bothan so air a thughadh aon uair, ach bha e 'san ám so air cinntinn thairis le feur dosrach, uaine.   A réir no chuimhne-sa air a' ghnothach, chan urrainn domh ràdh gum b'e tigh-sgoile comhfhurtachail a bha 'n so ; ach biodh sin 's a roghainn da, 's ann ann a fhuair mise a' mhór-chuid de 'n fhòghlum leis an do chuir mi m'aghaidh ris an t-saoghal.   *D. MacEacharn.*   (20)

2. Translate into English, paying careful attention to idiom :—

Marbhrann Coilich.

B 'e sud an coileach ceutach,
Bha coslach ris a' pheucaig ;
   'S an uair a chaidh a reubadh
B 'e an déisinn leam bhith 'g a fhaicinn.
   Cha léighiseadh léigh e,
'S a chreuchdan a' dol am braisead,
   Tonnan d' a fhuil chraobhaich
A' taomachadh as a chraiceann ;
   An t-sealg a rinn na daoine
Gun saothrachadh fada air astar,
   Gun uchdach a dhìreadh,
Ach eadar a' ghrìosach 's an stairsneach.

'S an dithis thug am binne,
'S a dh'fhàg e an sin 'n a shìneadh,
    B 'e am breitheamh rinn a dhìteadh,
'S b' e an gìomanach rinn a leagadh ;
    'S chan fhàgadh iad sìos e
Nam faigheadh e fìrinn is ceartas :
    Cha d' rinn e riamh eucoir,
'S deagh bheusan aige mar fhasan.
    Theannadh e ri éigheach
Gu h-éifeachdach is sinn 'n ar cadal,
    Is dhùisgeadh e gu léir sinn,
'S gun éireamaid anns a' mhaduinn.

Donnchadh Mac an t-Saoir. (**20**)

3. Translate into Gaelic :—

A herd-boy at the farm near my house puts his dog to a curious use. A great part of his flock are sent to pasture on the carse-ground[1] across the river, and when the boy does not want to go across to count them and see that they are all right, deterred from doing so by the water being flooded, or from any other reason, he sends his dog to swim across and collect the sheep on the opposite bank, where he can see them all distinctly. Though there are other sheep on the carse belonging to different people, the dog only brings his own flock. After they are counted and pronounced to be all right by the boy, the dog swims back again to his master. *C. St. John.* (**20**)

[1] carse = faiche, f.

4. Write in Gaelic a continuous story, based on the following summary, and complete it in your own way. Give it a title. The story should be about one and a half times the length of your answer to question 1, and should on no account exceed twice that length. **Failure to comply with this instruction may lead to a loss of marks.**

A blacksmith in a remote Highland village slew accidentally a near relative of the chief. The blacksmith was taken before the judge and condemned to death. The chief peasants and clansmen of the village joined together and begged the judge that the blacksmith should not suffer —he was necessary to the place, to shoe horses, mend

wheels, sharpen swords, etc. But the judge said : " How then can justice be done ? " The peasants answered that there were two weavers in the village—for so small a place one would be enough— (20)

(Complete the story in your own way.)

GAELIC

HIGHER GRADE—(FIRST PAPER)

Tuesday, 2nd April—9.30 A.M. to 11.30 A.M.

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing and for bad spelling.

1. Translate into idiomatic English :—

Bha na h-Eileanan an-iar a' snàmh an teas-ghathan soillseach na gréine, is an cuan anns an robh an cuilbh-stéidh air an suidheachadh mar loch boillsgeach de sheudan leaghte, a' dealradh is a' crònan le aiteas, bho'n ionad anns an robh fairge is adhar a' coinneachadh a chéile gu ruig gob gach rudha a bha 'gan tilgeadh féin mar bheò-chreutairean am buillsgein na fairge gu faochadh a thoirt dhoibh bho'n ain-teas a bha a' sìor dhòrtadh mu an cinn.

Bha duine is ainmhidh aig fois, is phaisg an eunlaith féin an sgiathan siùbhlach, is leig iad dhiùbh an ceilear gu fionnarachd an tràth-fheasgair ; cha robh deò á adhar, is bha eadhon Nàdur a' leigeil ris, mar mharbh na h-oidhche, gu bheil fois air a ceadachadh an teas a' mheadhon-là. B' e an cuan féin an aon chreutair, oir is creutair e da rìreadh am beachd a' Ghàidheil, nach robh aig fois, ach cha do ghabh an cuan làn fhois riamh bho an là a thugadh fuasgladh dha bho cheanglaichean is a leigeadh ruith dha air aghaidh a' chruinne-ché. Tha e an diugh mar a bha e

air an là àillidh ud a' taomadh is a' plosgail ris gach rudha
is ris gach geodha air cladach Eilearaig, mar a bha is mar
a tha e ris gach rudha is geodha eile a bhàrr orra eadar sin
is taobh eile an t-saoghail.

E. MacDhughaill. **(25)**

2. Translate into idiomatic English :—

Cumha Chailein Ghleann Iubhair.

'S e do chadal gu sìorruidh
A dh' fhàg m'aigne cho tiamhaidh ;
Is tric smaointeana dìomhain
    A' tighinn gu dian orm as ùr ;
Is trom a dh' fhàs orm an iargainn,
Is goirte t'àr-sa na 'm fiabhras :
Mo chomhdhalta àluinn deas ciatach
    An déis a reubadh gu dlùth.

Mìle mallachd do'n làimh sin
A ghabh cothrom is fàth ort,
A thug an comas do'n làmhach,
    'N uair chuir e 'n Spàinteach r'a shùil ;
Sgeula soilleir a b'àil leam
Gun cluinnte am follais aig càch,
E bhith dol ri cromaig le fàradh,
    Gus am miosa dhàsan na dhùinn.

Ge b'e neach a rinn *plot* ort
Le droch dhùrachd o thoiseach,
Bu dàna a' chùis dha tighinn ortsa,
    Na do lotadh as ùr ;
Bha 'n a rùn bhith gu h-olc dhuit,
'S gun de chridhe aig aodann a nochdadh :
'S ann a thàin' e sàmhach mu 'n chnocan,
    'S a ghabh ort socair o d' chùl.

'S e mo dhiùbhail a thachair
An am do 'n fhùdar ud lasadh,
Nach robh de d'chàirdean an taic riut
    Na bheireadh aicheamhail diùbh ;
'S a liuthad fiùran deas tlachdmhor,
Nach gabhadh cùram roimh bhagradh,
A chuireadh smùid ris an Apuinn,
    A chionn gum faiceadh iad thù.

Donnchadh Mac an t-Saoir. **(25)**

3. Translate into English, *or* turn carefully into Scottish Gaelic :—

Sgeul air Domhnall mac Eoin Mhùideartaich.

Do éirigh Alasdair mac Colla agus ráinig an lóisdín ina raibhe Domhnall, agus do ráidh ris : " A Dhomhnaill, a mhic, déan ullmhughadh ar do mhuinntir do chum creach do thabhairt do'n champa, agus ní racha leat acht do mhuinntir féin agus lucht eóluis do'n tír am bi ar n-ordughadh." Tugadar creacha móra do'n champa a n-aimsir athghoirid. Do thaitin sin le Muntrós agus leis an arm uile, ionnus gur b'é Domhnall agus a mhuinntir is mó do rinn de chreachuibh d'a raibh 'san arm uile. Do bhiodh móran de Ghaoidhealuibh eile do churthaoi do thogbháil chreach ag imtheacht leis na creachuibh do-nídís d'ionnsaigh a dtíortha féin, gan chead d'an *giniral*. Ní dhéanadh mac Eoin Mhúideartaigh an ní sin, oir ní léigfeadh neach d'a mhuinntir le creich nó le cobhartach uadha. Agus adhbhar eile, nár bh'urusda do mhuinntir d'fhearuibh na n-oiléan teacht le creachuibh d'ionnsaigh a dtíortha féin ó'n mhachaire ghallda. Tug sé creach ó Mhachair Aonghuis, agus is é do chreach an Mhaoirne. Tarla sean duine onórach dhóibh agus iad ar an chreich sin, agus a gceann gach sgéil eile dar innis dóibh, adubhairt nár chreachadh an Mhaoirne ó'n aimsir do creachadh le Domhnall a h-Íle an bhliadhain tug sé cath Gairbheach do Dhiúc Murchadh, " agus saoilim, a ógánaigh, gur ar sliocht na ndaoine sin atá sibhse, masa sibh Caipdín Chloinn Raghnaill."

The Book of Clan Ranald. (15)

GAELIC

HIGHER GRADE—(SECOND PAPER)

Tuesday, 2nd April—1.0 P.M. to 1.30 P.M.

This paper must not be seen by any candidate.

To be read out by the Teacher at 1.0 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 Gaelic Paper is distributed.

DIRECTIONS FOR TEACHER

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

2. *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.*

3. *Then dictate the passage slowly, saying each group of words (as indicated by vertical lines) twice, 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

Gun teagamh tha dlùth-cheangal | aig faireachdaidhean chreutairean | ri an càil-aigne, | ach air a shon sin | bidh sinn ag gabhail tlachd | ann a bhi ag creidsinn | gu bheil a' chuid as miosa air ar cùl. | Cha tig dìobradh | air a' ghealladh | tha an cois imeachd Nàduir, | ged bhios na siantan greannach. | Thig a' ghaoth an ear | bho chrìochan Ruisia | cho geur is cho nimheil | 's a bha i an uiridh, | agus ar leinn gun giùlain i | air a sgiathan | saighead na's nimheile, | ann an seagh eile, | na rinn i riamh ; | oir tha aice ri séideadh | thairis air a' Ghearmailt | mun ruig i sinn. | Ach cumaidh sinn ar sròn dìreach 'n a h-aghaidh | gu neo-sgàthach. | Bidh luchd nam bailtean móra | ag gearain gun cuir fuachd na gaoithe an ear | crith troimh an com, | ged bhios éideadh blàth | air a shuaineadh umpa ; | ach ciod e an coimeas | a tha aig an staid | ri cor chroitearan | air latha reothairt, | a' buain feamann ; | am bogadh gus na cruachanan, | trang a' deanamh an ràtha deiseil | mun tig an lìonadh ?

D. Mac-a-Phi. **(10)**

GAELIC

HIGHER GRADE—(SECOND PAPER)

Tuesday, 2nd April—1.45 P.M. to 3.45 P.M.

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing and for bad spelling.

1. Write an essay in Gaelic, of not more than two pages in length, on any *one* of the following subjects :—

   (*a*) Am baile againn fhéin.

   (*b*) The attractions of the Highlands *or* Islands as tourist resorts.

   (*c*) Describe as vividly as you can any scene from Highland History.

   (*d*) Life in a Highland School Hostel.   **(30)**

2. Translate into Gaelic :—

In Glen Sligachan, Skye.

While I was brooding, the riders and their guide were getting well ahead. The ponies were little shaggy rascals, with short stumpy legs twisted like sticks of blackthorn, knees stiff as rusty hinges, and never on any account to be coaxed into a trot ; small eyes, where drowsiness and mischief met ; their invariable pace was a walk, slow but steady ; and when left entirely to themselves, they could be relied on to pass safely where the most cautious foot-traveller stumbled. The little fellows seldom erred. They planted their feet alike on the rolling stone and the slippery rock, choosing sometimes the most unlikely passages, and avoiding by instinct the peat bog and the green morass. Only when the unskilled rider, in his human vanity, fancied to improve matters by using the rein, and guiding the beast into what looked the right way, did rider and steed seem in danger of getting into trouble.

Robert Buchanan.   **(25)**

3. Translate into Gaelic :—

    (1) They suspect me of having stolen the eggs.

    (2) It is all the same to us whether you come or go.

    (3) It is hard to believe you, in view of the many lies you have told already.

    (4) When half way up the rock, he became dizzy.

    (5) Edinburgh is one of the most beautiful cities in Europe.

    (6) Ask the man sitting opposite you for a match.

    (7) I think four pence halfpenny too much for that loaf.

    (8) In the early evening I met an old man who asked me the time.

    (9) Well, did you manage to catch any fish today?

    (10) Though I have only one eye, I see well with the eye I have. **(20)**

SPANISH

LOWER GRADE

Wednesday, 3rd April—9.30 A.M. to 12 NOON

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

1. Translate into English :—

    Una de las habilidades en que Fresnedo había sobresalido de niño, y que mucho le enorgullecía, era la de pescar truchas a mano. Ahora le acometió el deseo de proporcionar un placer a su hijo y dárselo a sí mismo.

    — Verás, Chucho, voy a sacarte una trucha. ¿ Quieres ?

    ¡ Ya lo creo que quería !

Fresnedo hizo una larga aspiración y se sumergió, dejando a su hijo maravillado ; registró los huecos de algunas piedras del fondo, y sólo pudo tocar con los dedos la cola de una trucha, sin lograr cogerla.   Como le faltase el aliento, subió a respirar.

Otra vez aspiró el aire con fuerza y se lanzó al fondo.   La muerte, feroz y traidora, le aguardaba allí abajo.   Metió el brazo en un agujero bastante estrecho, y cuando intentó sacarlo no pudo.   La sangre se le agolpó toda al corazón. Perdió la serenidad para buscar la postura en que había entrado.   Luchó en vano algunos momentos.   Abrió la boca al fin, falto de aliento, y en pocos segundos quedó asfixiado el infeliz.

La luz de la luna rielaba en el agua.   Atraídos sus ojos hacia ella, Chucho se acordó de pronto de que su papá se había metido en el río a sacarle una trucha.   Y entre sollozos que le rompían el pecho y lágrimas que le cegaban, gritó reiteradamente :

— ¡ Sal, papá ; sal, mi papá !   ¡ Tengo miedo !

En vano esperó su salida.   El padre no obedeció, y la voz del niño resonaba tristemente en la oscura campiña silenciosa.   Rendido, ronco de tanto gritar, no pudiendo ya gritar más, Chucho se dejó caer sobre el césped dormido, y así le hallaron los que habían salido en su busca.   **(30)**

2. Translate into English :—

En la plaza de la villa se celebraba el mercado semanal los lunes.   Allí se congregaban las campesinas de los contornos con sus cestas repletas de huevos y frutas y manteca. Gritaban las aldeanas ofreciendo sus mercancías, gritaban más alto aún las obreras y domésticas de la villa ofreciendo por ellas precios irrisorios, piaban las gallinas, gruñían los cerdos, mugían las vacas, relinchaban los caballos.   Todos estos ruidos envueltos llegaban hasta mí como un sordo rumor que me producía somnolencia.   En casa no querían que saliese a la calle, por miedo a los coches, a los borrachos, a los gitanos.   Tampoco querían retenerme dentro de ella, porque molestaba con mis juegos ruidosos.   Adoptaba yo un justo medio : me acercaba a la ventana, apoyaba los codos en el alféizar, y miraba cruzar a los transeúntes.   **(20)**

3. Translate into Spanish :—

That morning, before the others had got up, John left the house quietly. The sun was already shining, the birds were singing, and John felt that this was the best part of the day. He didn't want to go to school ; he wanted to bathe in the river, to read, to do nothing. In school he had to spend hours in a small room with a lot of other boys, and learn things he didn't like, and keep quiet. In the fields he was free. John was still bathing when suddenly he saw his father. " I've been looking for you," said his father severely. " Have you forgotten about school ? "   (20)

4. Translate into Spanish :—

    (1) Spaniards dine very late, and often do not go to bed before 1 a.m.

    (2) Don't take off your hat in this heat.

    (3) I may see you to-morrow morning, about 9.30.

    (4) Her youngest sister has been in the top class since Christmas.

    (5) He likes her, but it seems she doesn't like him.   (10)

SPANISH

Higher Grade—(First Paper)

Wednesday, 3rd April—9.30 a.m. to 11.30 a.m.

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

**N.B.—Begin the answer (or fair copy of an answer) to each
question on a fresh page. Write legibly and neatly,
and leave a space of half an inch between the lines.
Marks may be deducted for bad or crowded writing.**

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

1. " ¡ Las cuatro ! ¡ La comida ! " me dijo una voz de criado, una voz de entonación servil y sumisa ; en el hombre que sirve hasta la voz parece pedir permiso para sonar. Esta palabra me sacó de mi estupor, e involuntariamente iba

a exclamar como don Quijote : " Come, Sancho hijo, come,
tú que no eres caballero andante y que naciste para comer ; "
porque al fin los filósofos, es decir, los desgraciados, podemos
no comer, pero ¡ los criados de los filósofos !   Una idea más
luminosa me ocurrió :   era día de navidad.   Me acordé de
que en sus famosas saturnales los romanos trocaban los
papeles y que los esclavos podían decir la verdad a sus amos.
Costumbre humilde, digna del cristianismo.   Miré a mi
criado y dije para mí :   " Esta noche me dirás la verdad."
Saqué de mi gaveta unas monedas, mi paga de periodista ;
tenían el busto de los monarcas de España ;   pero para mí
no representaban ni retratos ni monedas, sino artículos de
periódico.   Las miré con orgullo :   " Come y bebe de mis
artículos," añadí con desprecio ;   " sólo en esa forma, sólo
por medio de esa estratagema se pueden meter los artículos en
el cuerpo de ciertas gentes."   Una risa estúpida se dibujó en
la fisonomía de aquel ser que los naturalistas han tenido la
bondad de llamar racional sólo porque lo han visto hombre.

Larra.   **(25)**

2.   *Acaso.*

Como atento no más a mi quimera,
no reparaba en torno mío, un día
me sorprendió la fértil primavera,
que en todo el ancho campo sonreía.

Brotaban verdes hojas
de las hinchadas yemas del ramaje,
y flores amarillas, blancas, rojas,
variolaban la mancha del paisaje.

Y era una lluvia de saetas de oro
el sol sobre las frondas juveniles ;
del amplio río en el caudal sonoro
se miraban los álamos gentiles.

— Tras de tanto camino, es la primera
vez que miro brotar la primavera —
dije ; y después, declamatoriamente :

—¡ Cuán tarde ya para la dicha mía ! —
Y luego, al caminar, como quien siente
alas de otra ilusión :

— Y todavía
¡ yo alcanzaré mi juventud un día !

Antonio Machado.   **(20)**

3. *La policía perfecta, que sospecha mucho y calla más.*

Príncipe : ¿ Y a qué debo el placer de veros por aquí, señor ?

Prefecto : El difícil cargo que desempeño, por complacer al príncipe nada más, podéis creerlo, me obliga a molestias desagradables.

Príncipe : A mí no me molestáis nunca.

Prefecto : No, el molestado soy yo. Figuráos que en Suavia se observa con recelo que os halláis aquí reunidos los dos príncipes, posibles herederos de la corona imperial.

Príncipe : Por no ser emperador hubiera yo conspirado toda mi vida. ¿ Creéis que puede cambiarse mi libertad por un Imperio ?

Prefecto : No insistáis. ¿ Os hubiera yo advertido si no estuviéseis seguro ? El gobierno de Suavia sueña con conspiraciones. Un día es un atentado, otro día una sublevación.

Príncipe : Y de algo debéis enteraros.

Prefecto : ¡ Poseo la clave de tantos sucesos inexplicables ! La mayor parte de la gente conoce de la vida, como del teatro, la escena nada más ; y la verdadera comedia está entre bastidores.

Príncipe : Vos sí que sois insubstituible.

Prefecto : ¿ Verdad que sí ? Insubstituible. Quisiera yo ver esta torre de Babel, donde todo parece tranquilo, amable, en manos de cualquiera. . . . Porque lo difícil de mi cargo no es enterarse de lo que conviene, sino dejar de enterarse de lo que no conviene. Alteza, a vuestras órdenes ; y perdonad por haber tenido que sospechar de vos.

Príncipe : Estáis perdonado.

Benavente. (20)

SPANISH

HIGHER GRADE—(SECOND PAPER)

Wednesday, 3rd April—1.0 P.M. to 1.30 P.M.

This Paper must not be seen by any candidate.

To be read out by the Teacher at 1.0 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. *Inform the candidates that they may not ask for the repetition of any word or phrase.*

2. *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.*

3. *Then dictate the passage slowly, saying each group of words (as indicated by vertical lines) twice, and pronouncing every word very distinctly. The punctuation should be indicated thus :—(,) ' coma,' (.) ' punto,' (—) ' raya,' (¡) ' principio de admiración,' (!) ' fin de admiración,' (¿) ' principio de interrogación,' (?) ' fin de interrogación.'*

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

Una tarde, | a eso de las seis, | los ladrones regresaron al campamento, | llevando consigo | a un pobre paisano | cuyas lamentaciones | partían el alma. |

— ¡ Dadme mis veinte duros ! | — decía. | — ¡ Si supierais | con qué afanes | los he ganado ! | ¡ Todo un verano segando | bajo el fuego del sol, | lejos de mi pueblo, | de mi mujer | y de mis hijos ! | Y cuando ya voy de vuelta, | deseando abrazarlos | y pagar las deudas | que para comer hayan hecho | aquellos infelices, | ¿ cómo he de perder | ese dinero, | que es para mí | un tesoro ? | ¡ Piedad, señores ! |

— No seas loco, | — exclamó un bandido, | dirigiéndose al segador. | — Haces mal | en pensar en tu dinero | cuando tienes cuidados mayores | en que ocuparte. |

— ¡ Cómo ! | — dijo el segador, | sin comprender | que hubiese desgracia más grande | que dejar sin pan | a sus hijos. |

— Pues, amigo mío, | has de saber | que todo el que cae | en nuestro poder | es preciso que muera. | Así, pues, | haz testamento | en dos minutos | y encomienda el alma | en otros dos. | Tienes cuatro minutos. | **(10)**

SPANISH

HIGHER GRADE—(SECOND PAPER)

Wednesday, 3rd April—1.45 P.M. to 3.45 P.M.

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

N.B.—Begin the answer (or fair copy of an answer) to each question on a fresh page. Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

1. Translate into Spanish :—

"And now I must tell you," added the man rather quickly, " that my name is Peter.   Well, this lady came up to me and said, ' Why, Peter, we never thought you would come ! ' She did not seem greatly surprised, but it was clear that I had come earlier than she had expected.   ' I will get Philip,' she said.   ' You remember Philip ? '   Here I had another little trouble with my memory : I did remember that there was a Philip, but I could not place him. That was odd, you know.   As for her, oh, I knew *her* as well as the colour of the sky : it was her name my brain missed, as it might have missed my own name or my mother's.

" The last thing I heard as I dropped asleep was her voice calling to Philip in the corridor.   I could have told the very place.   I knew that corridor so well.   We used to play there when we were children.   We used to play at travelling, and we used to invent the names of railway stations for the various doors.   Remembering this and smiling at the memory, I fell at once into a blessed sleep.

" When I woke up I was in a third-class carriage ; the light was that of late afternoon, and a man had wakened me by tapping my shoulder and telling me that the next station was Chartres . . .   That's all."   **(40)**

2. Translate into Spanish :—

   (1) She felt ill, and asked me to send for the doctor.
   (2) Scarcely was the war over when people began to talk about the next one.

(3) Don't let him go before the post comes.   There may be something to answer.

(4) There have been too many accidents of late.

(5) I'm sorry for all who are born on the twenty-ninth of February.   **(15)**

3. Write in Spanish a continuous story, based on the following summary.   The story should be about one and a half times the length of your answer to question 1, and should on no account exceed twice that length.   **Failure to comply with this instruction may lead to a loss of marks.**

City boy goes to country for first time—helps farmer to look after animals—likes driving cows best—one day goes for walk through fields alone—thinks he sees a cow in wrong field and goes to drive it—it is a bull, and comes angrily towards him.

(*Complete the story in your own way.*)   **(20)**

MATHEMATICS

LOWER GRADE—(FIRST PAPER)

Tuesday, 26th March—9.30 A.M. to 11.30 A.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 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 other two sides.   **(12)**

2. Prove that the medians of a triangle are concurrent, and meet at a point of trisection of each.   **(12)**

3. Prove that the angles made by a tangent to a circle with a chord drawn from the point of contact are equal to any angles in the alternate segments.   **(12)**

4. Show that, if two chords of a circle meet at a point either within or without the circle, the rectangles contained by their segments are equal.   **(13)**

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. A straight line XY cuts a second straight line AB at right angles at a point other than A or B. If P is a point on XY, prove that the difference between the square on AP and the square on BP is constant for all positions of P. (Section I, 1.)   **(17)**

6. Make a triangle ABC of sides $AB = 3''$, $BC = 2 \cdot 5''$, $CA = 4''$, and take a point D on the side AB, $2''$ from A.

Construct a triangle ADE on AD, of area equal to the given triangle, and having an angle $EAD = 100°$; state your construction clearly and prove that it is correct.   **(17)**

7. The three altitudes AP, BQ, CR of a triangle ABC meet at the point O. (You may assume they are concurrent.)
Prove that—

$$AO \cdot OP = BO \cdot OQ = CO \cdot OR,$$

and that—

$$AR \cdot AB = AQ \cdot AC.$$

(Section I, 4.)   **(17)**

8. X is a point lying within an angle POQ.

OX is joined and produced to R, so that XR is twice OX. The line RY through R, parallel to OQ, meets OP in Y, and YX produced meets OQ in Z. Prove that X is a point of trisection of YZ **(17)**

9. In the accompanying figure (*which need not be copied in your examination book*) AB is a common tangent to the two unequal circles shown, AD and BE are chords of the circles meeting in the point C, the line DE meets the circles again in the points F and G, and FA and GB meet in the point H.

Prove—

$$A\hat{C}B = F\hat{H}G.$$

(Section I, 3.)   (17)
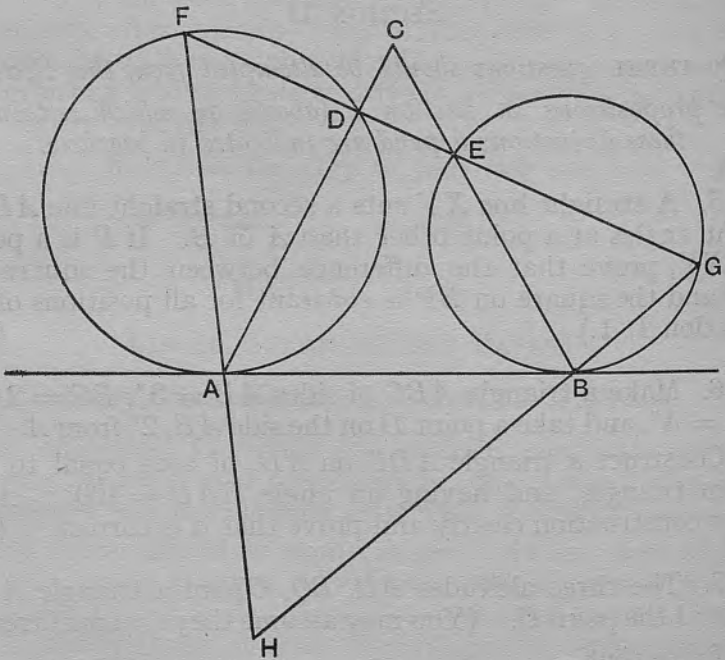
MATHEMATICS

Lower Grade—(Second Paper)

Tuesday, 26th 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 clearly indicated.

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. A bookseller buys six dozen copies of a book and marks them at the price of 7s. 6d., which gives him a profit of 25 per cent. on his outlay.
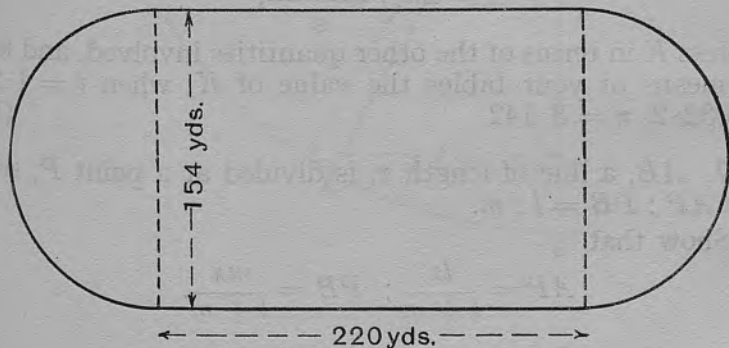
He sells four-fifths of his stock at the price marked, and then sells the remainder at a reduction of 20 per cent. on the marked price.   What percentage of profit does he make over all ?   **(13)**

2. The figure below shows a racing track, with semi-circular ends.

Find   (1) the total length round the track ;
       (2) the area enclosed in acres.

(Take $\pi = \dfrac{22}{7}$.   An acre = 4,840 sq. yd.)   **(13)**

3. Solve the equations—

$$(a) \quad 3x - y - z = 2,$$
$$2x + 6y + 8z = 3,$$
$$5y + 7z = 0.$$

$$(b) \quad 3x^2 - 5x + 1 = 0$$

(correct to two decimal places).   (**13**)

4. Tabulate the values of y corresponding to integral values of x from -5 to 5, given by the two equations—

(i) $2y = x^2$.

(ii) $3x - 4y + 14 = 0$.

Draw on one diagram graphs of the two equations between the limits stated, using two small squares of your book as units for x and y. From the intersections of the two graphs, find, as closely as you can, the roots of the equation—

$$2x^2 - 3x - 14 = 0$$

and verify your results by solving this equation.   (**13**)

Section II

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

5. (a) Simplify—

$$\frac{(a + b)^3 + (a - b)^3}{(a + b)^2 + (a - b)^2 - (a^2 - b^2)};$$

(b) Factorize—

(i) $4a^2 x^2 - 2b^2 y + 8a^2 y - b^2 x^2$;

(ii) $6x^3 - 13x^2 + 4x + 3$, given that $(x - 1)$ is a factor.   (**16**)

6. If

$$\iota = 2\pi\sqrt{\frac{1 + K^2}{g}},$$

express K in terms of the other quantities involved, and find by means of your tables the value of K, when $t = 1 \cdot 25$, $g = 32 \cdot 2$, $\pi = 3 \cdot 142$.   (**16**)

7. AB, a line of length x, is divided at a point P, such that $AP : PB = l : m$.

Show that

$$AP = \frac{lx}{l + m}; \quad PB = \frac{mx}{l + m}.$$

If, further, AP and PB are divided at the points Q and R respectively, such that $AQ : QP = PR : RB = l : m$, show that

$$AQ = \frac{l^2x}{(l+m)^2}\,;\ QP = PR = \frac{lmx}{(l+m)^2}\,;\ RB = \frac{m^2x}{(l+m)^2}.$$

(16)

8. Prove that, if θ be any acute angle,
$$\cos^2\theta + \sin^2\theta = 1.$$

If
$$x = a\cos\theta\cos\varphi$$
$$y = a\cos\theta\sin\varphi$$
$$z = a\sin\theta$$

find the value of $x^2 + y^2 + z^2$.   **(16)**

9. The figure below shows a clock pendulum, OA, $10''$ long, suspended from the point O. The arc AB is the path traced out by the end A, and OB is the vertical through O. If AC, the perpendicular distance of A from OB, is $4\cdot9''$ long, *calculate* the angle θ, made by the pendulum with the vertical, and the lengths of OC and CB.

Find what angle the pendulum makes with the vertical, when its lower end is on a level with the middle point of BC.

(16)
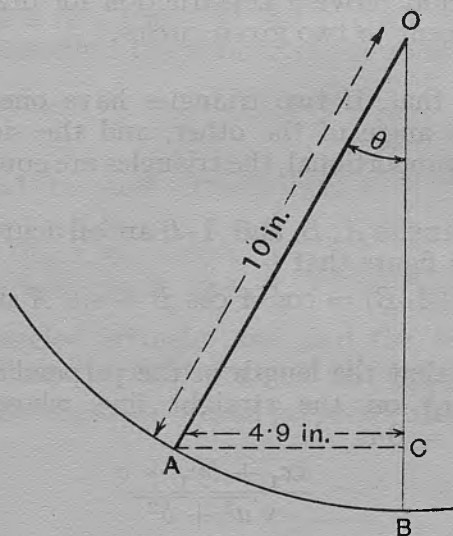
MATHEMATICS

HIGHER GRADE—(FIRST PAPER)

Tuesday, 26th March—9.30 A.M. to 11.30 A.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 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.

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

All the questions in this Section should be attempted.

1. State and prove a construction for drawing a direct common tangent to two given circles. (12)

2. Prove that, if two triangles have one angle of one equal to one angle of the other, and the sides about the equal angles proportional, the triangles are equiangular. (12)

3. If the angles A, B, and $A-B$ are all acute and positive, prove from a figure that
$$\cos (A-B) = \cos A \cos B + \sin A \sin B. \qquad (12)$$

4. Prove that the length of the perpendicular from the point (x_1, y_1) on the straight line whose equation is $ax + by + c = 0$ is
$$\frac{ax_1 + by_1 + c}{\sqrt{a^2 + b^2}}$$
and show how the sign of this expression determines on which side of the line the point (x_1, y_1) lies. (13)

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. AB and CD are parallel straight lines, and E is the middle point of CD. AD and BE meet at P, and AE and BC meet at Q. Prove that PQ is parallel to AB. (Section I, 2.) **(17)**

6. Two circular discs of radii 3 inches and 1 inch are laid on a table side by side in contact, and a taut string is tied round them. Prove that the length of the string is $\dfrac{14\pi}{3} + 4\sqrt{3}$ inches. (Section I, 1.) **(17)**

7. The bisector of the angle A of a triangle ABC meets the base BC in X and the circumference of the circumscribed circle in Y. The bisector of the angle B meets AY in I. Prove that

(i) $YI = YB$; (ii) square on YI = rect.$YX.YA$. **(17)**

8. ABC is a triangle whose area is F square feet, and the base BC is a feet long. If this triangle revolve about BC as axis, prove that the volume of the solid generated is $\dfrac{4}{3}\pi\dfrac{F^2}{a}$ cubic feet. **(17)**

9. Show that the three straight lines—

$$5x - 3y - 17 = 0$$
$$3x + 5y - 17 = 0$$
$$4x - 3y + 2 = 0$$

form a right-angled triangle, and find the length of the perpendicular from the right angle on the hypotenuse.

Find also the equation of this perpendicular. **(17)**

MATHEMATICS

HIGHER GRADE—(SECOND PAPER)

Tuesday, 26th 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 clearly indicated.

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. A landlord owns 654 acres, divided into three farms, A, B, and C, of 128 acres, 362 acres, and 164 acres respectively. He pays a tax of 12s. 6d. in the pound on a supposed income of £5 per acre. Owing to bad crops, he is able to collect only £4 5s. 6d. per acre on farm A, £3 12s. per acre on farm B, and £3 7s. 6d. per acre on farm C. Find his total net income from the land.   (12)

2. Water is brought to irrigate a field of 4 acres in a pipe of 8 in. diameter, and flows through it at the rate of 80 ft. per minute. How long will it take to deliver enough water to flood the field to a depth of an inch? ($\pi = \frac{22}{7}$, 1 acre = 4,840 sq. yd.)   (12)

3. Solve the equations—

(i) $\dfrac{x}{a} + \dfrac{x-3}{a-2} = a + 2.$

(ii) $\dfrac{1}{x-3} + \dfrac{1}{y-2} = 2,$

$2x - y = 5.$ (12)

4. (i) Factorize—

    (a) $x^2 - 6xy + 9y^2 - 6x + 18y + 8$.

    (b) $p^3 (3p - 4q) + 4pq (p^2 - 6q^2)$.

(ii) Simplify—

$$\frac{\dfrac{2ab}{a+b} - a}{\dfrac{1}{b} + \dfrac{1}{a-2b}} + \frac{\dfrac{2ab}{a+b} - b}{\dfrac{1}{a} + \dfrac{1}{b-2a}}.$$

    (12)

5. If in a triangle ABC the sides b, c, and the angle B are given, and if $c > b > c \sin B$, show that there are two triangles that will satisfy the given conditions and explain how you would find the unknown side and angles for each of the two triangles.

Find the unknown angles in the case in which $b = 7$, $c = 12$, $B = 28°$.   (12)

6. Prove that

    $\sin \alpha + \sin \beta = 2 \sin \frac{1}{2} (\alpha + \beta) \cos \frac{1}{2} (\alpha - \beta)$,

and write down the similar formulae for $\sin \alpha - \sin \beta$, $\cos \alpha + \cos \beta$ and $\cos \alpha - \cos \beta$.

Show that—

$$\frac{\cos 2A - \cos 4A}{\sin 4A - \sin 2A} = \tan 3A.$$

If A, B and C are the angles of a triangle, prove that

    $\sin A - \sin B + \sin C = 4 \sin \frac{1}{2} A \cos \frac{1}{2} B \sin \frac{1}{2} C$.   (12)

SECTION II

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

7. If $f(x)$ is a polynomial in x, prove that the remainder when $f(x)$ is divided by $x - a$ is $f(a)$.

If n is a positive integer, prove that $x^n - 1$ is always divisible by $x - 1$, and is divisible by $x + 1$ only when n is an even number.

State and prove similar theorems with regard to $x^n + 1$.   (14)

8. ABC is a triangle, right-angled at B, and from a point P in the hypotenuse perpendiculars PM, PN are drawn to AB and BC respectively. If $AB = 6$ in. and $BC = 3$ in., show that the area of the rectangle $PMBN$ is $\dfrac{x}{2}(6 - x)$ sq. in., where x is the length of AM in inches.

Plot the values of this area on your squared paper for the values 0, 1, 2, 3, 4, 5, 6 of x, and draw a smooth graph through these points.

For what value of x is the area of the rectangle greatest, and what is the corresponding position of P ? **(14)**

9. A carpet is laid in a rectangular room so as to leave a margin 2 ft. wide all round it. The area of the floor is 320 sq. ft., and the area of the margin is $\frac{2}{3}$ of the area of the carpet. Find the length and breadth of the room. **(14)**

10. Prove that the sum of n terms of the geometrical progression whose first term is a and whose common ratio is r is—

$$a \cdot \frac{r^n - 1}{r - 1}.$$

The first term of a G.P. is A, and the pth term is P. Show that—

(i) The common ratio is $\left(\dfrac{P}{A}\right)^{\frac{1}{p-1}}$

(ii) The nth term is $A^{\frac{p-n}{p-1}} \cdot P^{\frac{n-1}{p-1}}.$ **(14)**

ARITHMETIC

Tuesday, 26th March—9.30 A.M. to 11.30 A.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 legible and shown in its proper position in the answer, and, when necessary, the different steps should be clearly indicated.

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

1. A workman is paid 1s. 4d. an hour. He works 8 hours a day and $5\frac{1}{2}$ days a week. In the course of a year of 52 weeks he loses 16 days' work. How much does he earn in the year ?   (7)

2. I own £2,262 10s. 2d. of $3\frac{1}{2}$ per cent. India stock. From the interest is deducted income tax at 4s. 6d. in the pound. What, to the nearest penny, is my income from this source ?   (10)

3. What will it cost to carpet a room 35 ft. 4 in. long and 27 ft. wide with carpet 27 in. broad, costing 5s. $3\frac{1}{2}d.$ per yard ?   (10)

4. I make a journey of 160 miles by car. I leave home at 11.0 a.m., stop for 45 minutes at one place for lunch and for 20 minutes at another to see something of interest. I reach my destination at 3.55 p.m. Find the average speed at which I drive, when I am moving, in miles per hour to two decimal places.   (12)

5. A man's average expenditure for the five years, 1928–32, was £462 6s. per annum. He spent £335 10s. in 1928 and £589 in 1933. What was his average annual expenditure for the five years, 1929–33 ?   (13)

6. A stone kerb at the side of a road is 8 in. wide and 10 in. deep. If a cubic foot of the stone weighs 168 lb., how many tons of stone are required to edge both sides of the road for a mile ?   (14)

7. A town council, in order to improve a street, buys the houses on one side and the ground on which they stand, for a length of 352 ft. and a depth of 53 ft. The houses cost £87,700, and the ground costs £1 13s. 9d. per square yard. The road is widened by 9 ft. at a cost of 8s. per square yard, and the remaining ground is sold at £2 16s. 3d. per square yard. What is the net cost of the improvement ?   (14)

ELEMENTARY ANALYSIS

ADDITIONAL MATHEMATICAL SUBJECT
(Higher Grade)

Wednesday, 27th March—9.30 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.

Not more than FOUR questions should be attempted from Section I, and not more than TWO 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. Resolve $\dfrac{1}{(x - a)\,(x - b)}$ into partial fractions.

By substituting $x = \tan\theta$, $a = \tan A$, and $b = \tan B$ in the result prove that

$$\frac{\cos\theta\sin(A - B)}{\sin(\theta - A)\sin(\theta - B)} = \frac{\cos A}{\sin(\theta - A)} - \frac{\cos B}{\sin(\theta - B)}$$

(15)

2. Evaluate the determinants

$$\begin{vmatrix} 2 & 3 & -4 \\ 11 & -10 & 9 \\ -5 & 7 & 12 \end{vmatrix} \quad \text{and} \quad \begin{vmatrix} 3 & 3 & -4 \\ 21 & -10 & 9 \\ 9 & 7 & 12 \end{vmatrix}$$

and use the results to solve the equations

$$2x + 3y - 4z = 3$$
$$11x - 10y + 9z = 21$$
$$-5x + 7y + 12z = 9$$

and to find the value of

$$\begin{vmatrix} x & y \\ y & z \end{vmatrix}$$

(15)

3. Differentiate $(x + 1)^2/x$ from first principles.
Differentiate $e^x \log x$, $(1 + \sin x)^{-1}$.   **(15)**

4. Evaluate

$$\int_1^2 (x - 1)(x - 2)\,dx, \qquad \int xe^x\,dx, \qquad \int \frac{\sin 2x}{2 - \cos x}\,dx.$$

(15)

5. What is meant by saying that

(1) the series $1 + \dfrac{1}{2} + \dfrac{2}{4} + \dfrac{4}{8} + \dots.$ diverges,

(2) the series $1 + \dfrac{2}{3} + \dfrac{4}{9} + \dfrac{8}{27} + \dots$ converges ?

Prove that the series whose nth term is $\dfrac{1}{n}$ diverges, while

that whose nth term is $\dfrac{1}{n^2}$ converges.

For what values of x is the following formula true

$$\frac{1}{(1 - x)^2} = 1 + 2x + 3x^2 + 4x^3 + \dots ?$$

(15)

Section II

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

6. Write down the series for $\log (1 + x)$. For what values of x is it valid ?

If $a^2 b - 2a + b = 0$, and $a^2 < 1$, prove that

$$4 \left(a^2 + \frac{a^6}{3} + \frac{a^{10}}{5} + \dots \right) = b^2 + \frac{b^4}{2} + \frac{b^6}{3} + \dots$$

(20)

7. State de Moivre's Theorem and prove it for a positive integral exponent.

If $x = \cos \theta + i \sin \theta$ and $n = \dfrac{1 + \sqrt{1 - c^2}}{c}$,

prove that

$$1 + c \cos \theta = \frac{c}{2x} (1 + nx) \left(1 + \frac{x}{n} \right).$$

(20)

8. Prove that the sum of n terms of the series, whose rth term is $r\,(r+1)\,(r+2)\,(r+3)$, is

$$\tfrac{1}{5}n\,(n+1)\,(n+2)\,(n+3)\,(n+4).$$

Sum to n terms the series

    (i) $1.3 + 3.5 + 5.7 + \ldots$

    (ii) $1^2.4 + 2^2.5 + 3^2.6 + \ldots$ (20)

9. Prove that the curves given by the equations $\dfrac{x^2}{a^2} = \dfrac{y}{b}$ and $\dfrac{x}{a} = \dfrac{y^2}{b^2}$ divide the rectangle whose corners are $(0, 0)$, $(a, 0)$, $(0, b)$ and (a, b) into three equal parts.   (20)

GEOMETRY

ADDITIONAL MATHEMATICAL SUBJECT
(Higher Grade)

Wednesday, 3rd April—9.30 A.M. to 11.30 A.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 THREE questions should be attempted from Section I, and not more than TWO questions from Section II.

Square-ruled paper is provided.

20 marks are assigned to each question.

Marks will be deducted for careless or badly arranged work.

SECTION I

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

1. Prove that the tangent of the angle between the two straight lines represented by the equation

$$ax^2 + 2hxy + by^2 = 0 \text{ is } \pm\,\frac{2\,\sqrt{h^2 - ab}}{a + b},$$

and explain the double sign.

Show that the straight lines represented by the equation $6x^2 + 5xy - 4y^2 = 0$ are respectively perpendicular to those represented by the equation $4x^2 + 5xy - 6y^2 = 0$.

2. Show that the two circles

$$x^2 + y^2 + 2gx + 2fy + c = 0, \quad x^2 + y^2 + 2g'x + 2f'y + c' = 0$$

cut orthogonally if

$$2gg' + 2ff' = c + c'.$$

Prove that the equation

$$4(x^2 + y^2 + 2x + 2y + 1)^2 = (x^2 + y^2 - 4)^2$$

represents two circles, and that they cut orthogonally.

3. Verify that the point whose co-ordinates are $(am^2, 2am)$ lies on the parabola $y^2 = 4ax$, for all values of m, and write down the equation of the tangent at that point.

If the tangents at two points on the parabola are at right angles, prove that the locus of their point of intersection is the straight line $x + a = 0$, and that the chord joining the points meets the axis of the parabola in a fixed point.

4. Chords of the ellipse $\dfrac{x^2}{a^2} + \dfrac{y^2}{b^2} = 1$ are drawn parallel to the straight line $y = mx$. Prove that the locus of their mid points is the straight line $\dfrac{x}{a^2} + \dfrac{my}{b^2} = 0$.

If C is the centre of the ellipse, and the line $y = mx$ meets the ellipse in P and the locus of mid points meets the ellipse in D, prove that $CP^2 + CD^2 = a^2 + b^2$.

5. Trace the shape of the hyperbola $xy = c^2$, examining specially its relation to the axes of co-ordinates, its points of nearest approach to the origin and the existence of straight lines about which it is symmetrical.

Prove that the equation of the tangent at the point (x', y') is $\dfrac{x}{x'} + \dfrac{y}{y'} = 2$.

If perpendiculars are drawn from any point on the curve to the two lines of symmetry, prove that the difference of their squares is constant.

Section II

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

6. Prove that the median centre, the ortho-centre, and the centre of the circumscribing circle of a triangle are in a straight line.

If G, P, and O are respectively the median centre, the ortho-centre, and the centre of the circumscribing circle of the triangle ABC, if D is the foot of the perpendicular from O on BC and N is the middle point of OP, prove that DN bisects AP.

7. If D, E, F are points on the sides BC, CA, AB of a triangle ABC such that AD, BE, CF meet in a point, prove that

$$AF \cdot BD \cdot CE = FB \cdot DC \cdot EA.$$

If the circle DEF cuts the sides BC, CA, AB again at the points D', E', F', prove that AD', BE', CF' meet in a point.

8. Define a harmonic pencil, and prove that every transversal is cut in a harmonic range.

If OA, OB are two fixed straight lines, S a fixed point, and a variable straight line through S meets OA, OB in the points P and Q, prove that the locus of a point R on the line SPQ which satisfies the condition

$$\frac{1}{SP} + \frac{1}{SQ} = \frac{1}{SR}$$

is a straight line.

9. If a straight line is perpendicular to each of two intersecting straight lines at their point of intersection, prove that it is perpendicular to the plane of the intersecting lines.

If A, B, C, D are four points which are not in the same plane and AB is at right angles to CD and AC to BD, prove that AD is at right angles to BC.

DYNAMICS

Additional Mathematical Subject
(Higher Grade)

Friday, 29th March—1.0 P.M. to 3.0 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.

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

In the answers to arithmetical examples units must be stated.
$g = 32 \ ft./sec.^2$

Section I

All the questions in this Section should be attempted.

1. Find the resultant of two unequal parallel forces acting on a body in opposite directions.

Two parallel forces act in opposite directions at two points A and B, whose distance apart is 1 foot, and their resultant is a force of 4 lb. weight acting at a point on the line AB at a distance 5 feet 9 inches from the point of action of the smaller force.   Find the forces.   **(15)**

2. Show that three coplanar forces in equilibrium must pass through one point, and state what other law they must obey.

A rectangular door ABCD of weight W is 6 feet 6 inches high and 3 feet broad, AB being the bottom edge.   It is supported by two small hinges on the vertical side AD, one 1 foot above A and the other 1 foot below D.   If the force exerted by the upper hinge is horizontal, find its value, and find the magnitude and direction of the force exerted by the lower hinge.   **(15)**

3. Prove the formula—
$$S = ut + \tfrac{1}{2}ft^2$$
for the distance S moved in time t by a body under a constant acceleration f, with initial velocity u.

Find u and f if the distances traversed in the 4th and 10th seconds are 176 feet and 272 feet respectively.   **(15)**

4. A solid is immersed in a liquid. Prove that the resultant pressure on the solid is equal to the weight of the liquid displaced and acts vertically upward.

A rectangular block of a substance of specific gravity 0·43 and of dimensions 20 cm. by 16 cm. by 5 cm. is totally immersed in water and kept there by a string attached to the bottom. Find the tension of the string in grammes weight. **(15)**

SECTION II

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

5. Explain the term *relative velocity* and show how to find it in the case of two moving points when the actual velocities of the points are known.

Two points, A and B, are describing in the same direction concentric circles of radii 80 and 100 yards respectively with uniform velocities. If A and B take the same time, 3 minutes, to describe the circles and the angle AOB is 60°, where O is the common centre of the circles, find in feet per second the magnitude of the velocity of B relative to A. **(20)**

6. Describe the barometer and explain how to use it to determine heights.

A tube of uniform cross section is closed at one end; the length of the tube is 2 feet, and it contains mercury which occupies 15 inches of its length. If the tube is inverted and immersed vertically in a basin of mercury to a depth of 2 inches, no air being allowed to escape, find the length of the tube now occupied by the air. **(20)**

[Barometer reading 30 inches.]

7. Explain the term *limiting angle of friction.*

A body which weighs 8 lb. rests on a rough plane which makes an angle of 30° with the horizontal. A force of 1 lb. weight acting up the plane and parallel to it is just sufficient to prevent the body from slipping down. Find the least force in the same direction which will cause the body to begin to move up the plane. **(20)**

BOOKKEEPING

Friday, 29th March—1.0 P.M. to 4.0 P.M.

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

1. " A.B. accepted C.D.'s draft for £100 at 3 months." Draw up the accepted bill of exchange.   (**5**)

2. State three kinds of errors which a trial balance would not reveal.   (**5**)

3. On 1st January, 1935, P. Egan and J. Moore entered into partnership with a capital of £500 each in cash which was paid into bank. On the same day they took over the business of F. Young as a going concern for £300 in cash and two bills of £100 each at two months and three months respectively. The assets and liabilities taken over were— stock, £277 2s. 2d.; debtor, E. Gray, £171 15s. 9d.; creditor, R. Thomas, £169 7s. 11d.; bill for £50 due by S. Johnson on January 23rd; furniture and fittings, £120 10s. The premises were rented at £60 per annum payable monthly.

Transactions for the month of January were as follows :—

Jan. 1. Paid F. Young by cheque £300 and accepted his drafts according to contract.
Drew from bank for office cash, £20.
2. Paid fire insurance premium, £3 10s.
4. Sold W. Jones goods value £278 16s. 5d.
5. Paid R. Thomas by cheque £168 10s., discount 17s. 11d.
7. Received from W. Jones his acceptance for £250 at one month and cheque for balance of his account less £1 10s., allowance for damaged goods.
9. Purchased from R. Watson goods value £173 4s. 1d.
10. Received cheque for £170 from E. Gray in settlement of his account.
12. Returned to R. Watson goods value £34 18s. 5d. not up to sample.
15. Sold to E. Scott goods value £119 13s. 4d.

Jan. 17. Sent to R. Watson our cheque for amount of his account less £3 9s. 2d. discount.

19. E. Scott accepted our draft for £100 at 30 days.

23. S. Johnson renewed his bill due to-day for three months plus 5 per cent. interest.

26. Purchased from Morgans, Ltd., a job line of goods for £175 ; paid by cheque.

28. Partners' drawings from bank to date, P. Egan, £10 ; J. Moore, £8.

30. Drew for office cash, £40.

31. Paid month's rent by cheque.
Sundry cash expenses for month, £39 4s. 3d.
Cash sales for month, £73 10s. 9d., paid into bank.

Record the above in the necessary books of account, and post to the ledger.

All payments were made by cheque, except where otherwise stated, and all cash and cheques received were paid into bank the same day. **(50)**

4. The following were the balances in the books of William Finlay at 30th June, 1934 :—

Cash, £80 ; bank overdraft, £45 9s. 8d. ; bills receivable, £270 ; stock (1st January, 1934), £1,103 7s. 6d. ; debtors, £2,997 13s. 4d. ; creditors, £3,000 17s. 11d. ; goodwill, £1,000 ; investments, £900 ; purchases, £12,017 3s. 11d. ; premises (leasehold), £7,000 ; machinery, £3,000 ; furniture and fittings, £600 ; sales, £21,706 12s. 7d. ; carriage inwards, £400 9s. 10d. ; trade expenses, £704 17s. 8d. ; wages, £2,293 4s. 1d. ; salaries, £1,050 13s. 6d. ; rates and taxes, £393 19s. 7d. ; interest on investments, £45 ; returns inwards, £283 1s. 8d. ; discounts allowed, £496 4s. 7d. ; bank charges, £7 3s. 2d. ; repairs, £200 1s. 4d. ; capital, £10,000.

The stock at 30th June, 1934, was valued at £984 17s. 9d.

Make up a Trial Balance and prepare Trading Account, Profit and Loss Account and Balance Sheet. Provide for depreciation of machinery at 15 per cent. per annum and of premises at 5 per cent. per annum. Also create a bad debts reserve of 2½ per cent. on debtors. **(40)**

COMMERCIAL ARITHMETIC

(First Paper)

Friday, 29th March—9.30 A.M. to 10.0 A.M.

This paper will be taken up at the end of half an hour, when the second 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.

1. Add, down and across :—

£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1,357	19	9	384	7	11	827	13	5			
896	7	4	942	14	7	379	9	8			
754	14	3	675	9	4	2,945	7	3			
9,360	13	7	838	16	5	287	9	4			
271	2	11	1,419	4	3	658	18	7			
3,769	10	6	564	8	10	1,196	4	11			
958	17	8	397	15	8	370	10	8			
1,649	5	2	7,756	7	4	534	19	2			
597	13	5	729	3	5	3,752	7	9			
781	2	4	953	19	6	669	8	7			

£ : :   £ : :   £ : :

(8)

2. Subtract :—

£	s.	d.	£	s.	d.	£	s.	d.
57,491	15	3	24,357	4	3	88,254	19	7
38,329	17	7	15,267	14	1	57,953	19	11

£ : :   £ : :   £ : :

(3)

3. State the number of—

(a) pence in £4   12s. 5d. ....

(b) inches in 7 yards 2 feet 8 inches ....

(c) lbs. in 2 cwts. 3 qrs. 7 lbs. ....

(5)

COMMERCIAL ARITHMETIC

(SECOND PAPER)

Friday, 29th March—10.0 A.M. to 11.30 A.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.*

Four-place logarithmic tables are provided.

*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. Marks will be deducted for careless or
badly arranged work.*

1. If a cubic centimetre of lead weighs 11 grams, find
the weight in kilograms of a sheet of lead $4 \cdot 5$ metres long,
$1 \cdot 5$ metres broad and $1 \cdot 5$ centimetres thick. (6)

2. At what price must $3\frac{1}{2}$ per cent. Conversion Stock
be purchased to give an income at the rate of 5 per cent.
on the money invested ? (Ignore stamp and brokerage.)
(8)

3. When income tax was 5s. in the £ a man received
from his investments a net income of £500. The rate of
tax was reduced to 4s. 6d. By how much was his net
income increased ? (8)

4. A contractor undertook to do a piece of work in
90 days. After working with 48 men for 70 days he
had completed only two-thirds of the work. How many
additional men must he employ to complete the work
in the contract time ? (10)

5. A farmer sent 35 tons of potatoes to market. Freight
charges amounted to £7 13s. 9d. The potatoes were sold
at £2 10s. per ton, less commission of $2\frac{1}{4}$ per cent. If the
cost of producing the potatoes was £1 15s. per ton, what
was the amount of the farmer's profit ? (10)

6. If coffee beans lose 4 per cent. of their weight in roasting and grinding, how much per lb. must be charged for coffee prepared from beans purchased at 11*d*. per lb. to make a profit of 40 per cent., the cost of roasting and grinding being 1*d*. per lb. of beans ?   **(10)**

7. Find the sum of money which in 7 years at $4\frac{1}{2}$ per cent. per annum compound interest would amount to £680 6*s*.   (Use logarithms.)   **(12)**

SCIENCE

HIGHER GRADE—(BOTANY)

Tuesday, 2nd April—1.45 P.M. to 3.45 P.M.

FIVE questions in all should be attempted.

Answers should, wherever possible, be illustrated by diagrams.

20 *marks are assigned to each question.*

N.B.—Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

1. From what external sources does a plant obtain (1) water and mineral salts, (2) carbon dioxide ?
State, in each case, by what part of the plant the substance is taken in, and describe the process by which the substance passes into the plant.
Give an account of the uses to which each is put in the life of the plant.

2. Make a large-scale detailed drawing to illustrate the structure of a leaf as seen in transverse section under a microscope.
Name the parts and briefly describe the function of each.

3. The fern is said to show "alternation of generations."
Explain this and illustrate your answer by reference to the life-history of the fern.

4. Write an account of the life of three of our native insectivorous plants, giving a named drawing in each case to illustrate the trap mechanism.

What deficiency in their food supply have these plants to contend with ?

5. What are the principal food substances stored by plants for their own use ? Select *five* examples from the following list, and state in each case (*a*) what part of the plant is used for storage, and (*b*) what kind of food material is stored : apple, banana, bean, crocus, hazel-nut, iris, onion, orange, potato, wheat-grain.

6. Name two flowers well known to you, of which one is wind-pollinated and the other insect-pollinated.

Draw and describe each of them, carefully pointing out the main differences between them, due to the different ways in which they ensure pollination.

7. **Either** (*a*) Give some account of the general characteristics of plants found in one of the following situations—seashore, moor, meadowland—and show how these characteristics contribute to their permanent and healthy settlement there.

Or (*b*) Describe, with carefully named diagrams, a set of experiments to illustrate the response of plants to (1) gravity and (2) light.

SCIENCE

HIGHER GRADE—(CHEMISTRY)

Wednesday, 3rd April—1.45 P.M. to 3.45 P.M.

Not more than **FIVE** questions should be attempted. Full marks will not be awarded unless the answers are illustrated by carefully drawn diagrams of reasonable size and supplemented by equations wherever possible.

$N = 14$, $O = 16$, $Na = 23$, $Cl = 35 \cdot 5$, $Ca = 40$.

20 *marks are assigned to each question.*

Mathematical tables will be supplied to those who desire them.

N.B.—Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

1. Explain the meaning of the following terms used in classifying chemical reactions : *combination, decomposition, displacement,* and *double decomposition.*   Illustrate each with an example.

Show how you would fit the following reactions into this classification :—

(a) Neutralisation of hydrochloric acid by lime water.

(b) Action of heat on calcium carbonate in a closed vessel.

(c) Action of bromine on a solution of potassium iodide. Write equations.

2. Define (a) *valency* and (b) *equivalent,* and from your definitions show how the one depends on the other, illustrating your answer by referring to compounds that may be formed from (i) calcium and oxygen, and calcium and chlorine, (ii) hydrogen and oxygen, and hydrogen and chlorine.

On treating $0 \cdot 447$ gm. tin with nitric acid, evaporating to dryness and heating strongly, a residue weighing $0 \cdot 567$ gm. is obtained.   On treating the same weight of tin with hydrochloric acid the volume of hydrogen liberated at N.T.P. is 84 c.cm.   Calculate the equivalent of tin from these two experiments and write a short note on your answers.

3. How would you prepare a pure dry specimen of carbon monoxide ?   Outline experiments which you would carry out with carbon monoxide and hydrogen to demonstrate those properties in which carbon monoxide (a) resembles hydrogen, (b) differs from hydrogen.   Write a note on the part played by carbon monoxide in the blast furnace.

4. Describe the method you would follow in estimating the percentage of ammonia in an ammonium salt.   Note carefully the important experimental details that are necessary to ensure an exact result.

40 c.cm. of a solution of caustic soda are diluted to 1,000 c.cm. with water.   25 c.cm. of the dilute solution are neutralised by 20 c.cm. of $0 \cdot 12 \, \overline{\text{N}}$ acid.   Calculate the normality of the original caustic soda solution and find the weight of ammonia which one litre of it would liberate from a solution containing an excess of ammonium chloride.

5. Starting from common salt how would you prepare and collect (*a*) chlorine and (*b*) hydrochloric acid gas ? Write a note explaining the reaction in each case. Give three chemical tests by which you could distinguish these gases from one another.

Calculate the weight of common salt required to prepare 11·2 litres of each gas at N.T.P.

6. Write equations for the action of—

      (*a*) hydrochloric acid on sodium sulphite,
      (*b*) heat on potassium nitrate,
      (*c*) slaked lime on ammonium sulphate,
      (*d*) heat on ammonium nitrate.

Name the resulting substances, and in the cases where they are gaseous indicate how you would prove their identities.

7. **Either** (*a*) Describe a series of experiments which you would carry out to investigate fully the conditions under which iron rusts. State clearly the conclusions that you draw from *each* experiment.

Or (*b*) Write brief notes on the contributions made to chemistry by *any four* of the following :—

      Black, Boyle, Madame Curie, Moseley, Ramsay, Scheele.

In each case state the century in which the scientist lived.

SCIENCE

HIGHER GRADE—(ENGINEERING)

Wednesday, 3rd April—1.45 P.M. to 3.45 P.M.

FIVE questions should be attempted, viz., **THREE** questions from Section A, and at least **ONE** question from Section B. The fifth question may be taken from either Section B or Section C.

20 *marks are assigned to each question.*

When candidates use a formula they must explain each symbol. Units must always be stated.

Take $\pi = \dfrac{22}{7}$, *and* $g = 32$ *ft. per sec. per sec.*

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

N.B.—Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

SECTION A

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

1. A uniform beam weighing 200 lb. is acted upon by two forces, A and B, as shown in Figure 1. It rests at one end upon a stone column, where the reaction R is vertical, and is supported at the other end by two rods from an overhead fixture, the joints of the rods being hinge pins.

Determine—

    (*a*) the vertical reaction R (analytically) ;

    (*b*) the forces in the two rods supporting the beam (graphically).

FIGURE 1.
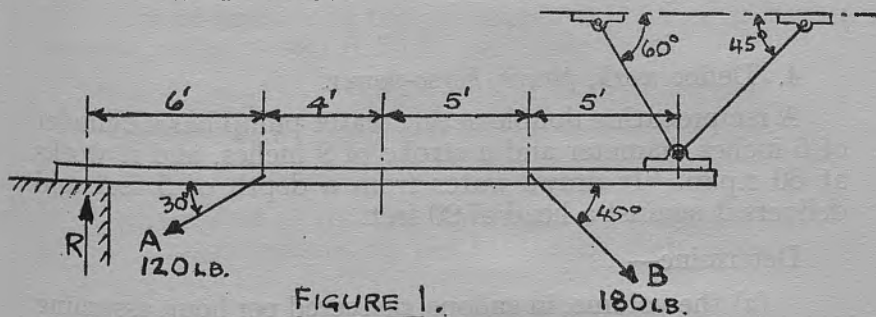
2. A cage in the shaft of a mine starts from rest at the pit bottom and ascends with a uniform acceleration of 5 ft. per sec. per sec. After 10 seconds the acceleration ceases and the cage ascends with uniform velocity for 30 seconds. The brakes then operate and the cage is subjected to a uniform retardation of 10 ft. per sec. per sec. until it comes to rest at the surface.

Find—

(*a*) the depth of the shaft ;

(*b*) the total time of the wind.

If the weight of the cage and its load is $1\frac{1}{2}$ tons, what is the total work done in winding the cage from the bottom to the surface ?

3. A steel stay bar, $1\frac{1}{4}$ inches diameter and 12 feet long, is subjected to a tensile load of 9 tons, and under the action of this load it increases in length $0 \cdot 079$ inches.

Find the modulus of the steel.

The rod passes through a furnace for the middle 6 feet of its length, and it is found advisable to limit the stress in that portion of the rod to 6,000 lb. per sq. inch.   This may be done by increasing the diameter of the rod for that 6-foot length.

Determine—

(*a*) the diameter to which it should be increased so that the stress may be limited in that portion to the desired figure ;

(*b*) the increase in length of the whole length of the rod when under load, the effects of temperature being neglected.

4. Define *work, power, horse-power.*

A reciprocating double-acting water pump has a cylinder of 6 inches diameter and a stroke of 9 inches, and it works at 60 r.p.m.   It draws water from a depth of 5 feet and delivers it against a head of 90 feet.

Determine—

(*a*) the volume, in gallons, delivered per hour, assuming that 12 per cent. of the water slips back ;

(*b*) the horse-power required to deliver the water ;

(*c*) the horse-power of the motor driving the pump if the pump efficiency is 70 per cent.

1 cubic foot of water weighs $62 \cdot 5$ lb.
1 gallon of water weighs 10 lb.

SECTION B

Not more than TWO *questions may be attempted from this Section.* (*See General Instructions at the head of the paper.*)

5. Define the terms *boiler efficiency, engine efficiency, calorific value.*

In a power house an electrical generator has an output of 12,000 kilowatts for an hour. Assuming that the overall efficiency from boilers to generator is 15 per cent., determine—

(*a*) the heat equivalent of the power generated ;

(*b*) the quantity of coal that will be burned per hour if its calorific value is 12,500 B.Th.U. per lb.

(1·34 H.P. = 1 kilowatt.)

6. What is meant by the hit-and-miss type of governing gas engines ?

A gas engine working on the four-stroke cycle and governed on this system has a cylinder diameter of 12 inches and a stroke of 18 inches ; it runs at a normal speed of 200 r.p.m.

On a particular load it makes 68 explosions per minute and is then taking 10·6 cubic feet of gas per minute. The mean effective pressure is found to be 96 lb. per sq. inch, and from an analysis of the gas supply it is found to have a calorific value of 480 B.Th.U. per cubic foot.

Determine—

(*a*) the I.H.P. developed ;

(*b*) the indicated thermal efficiency ;

(*c*) the cost of running the engine for 8 hours when the gas costs 1*s*. 2*d*. per 1,000 cubic feet.

7. What is meant by the term—26-inch vacuum, and what is the corresponding absolute pressure in lb. per sq. inch, the barometric pressure being 30 inches of mercury ?

With reference to any form of steam plant, give the reasons for operating the engine under vacuum conditions.

Give a sketch of the piece of plant that is used for condensing the exhaust steam from an engine. Name the various parts.

SECTION C

Only ONE *question may be attempted from this Section.* (*See General Instructions at the head of the paper.*)

8. Define the *ohm*, and state *Ohm's law*.

A telegraph line is made of iron wire having a resistance of 4·3 ohms per mile. The battery that provides the operating current consists of cells each of 1·04 volt e.m.f. and each with a resistance of 25 ohms. The resistance of the line instruments is 80 ohms, and they require a current of 8 milli-amperes to work them.

Determine—

    (*a*) the total external resistance ;

    (*b*) the number of cells required for a line 150 miles long.

9. Define a *B.O.T. unit*.

A metal filament lamp takes 1·5 watts per candle power. It is proposed to install in a factory one hundred 40-c.p. lamps and fifteen 100-c.p. lamps. Calculate—

    (*a*) the horse-power required to supply the lighting ;

    (*b*) the energy in B.O.T. units taken from the mains per hour.

SCIENCE

HIGHER GRADE—(TECHNICAL DRAWING)

Wednesday, 3rd April—9.30 A.M. to 12 NOON.

Question 1 should be attempted, and *either* **Question 2** *or* **Question 3. The Figures are on a separate paper. Both sides of the drawing paper may be used.**

50 *marks are assigned to each question.*

1. Figure 1 shows an assembled view, half in section, and half an outside elevation, of a metal cap insulator for high tension electric cables. It consists of a porcelain insulator A which is cemented into the galvanized cast iron hood or cap B ; a mild steel spindle C is cemented into the hole in the porcelain part A.

Do *not* draw the assembled view given.

FIGURE 1.

FIGURE 2.

FIGURE 5

FIGURE 3

FIGURE 4

Make a full-size drawing of each component part taken separately, each drawing to consist of an elevation with the left-hand half in section and the right-hand half in outside view.

Dimension each drawing and give each part its name.

The drawings should be made in bold outline and the section lining in lighter outline.

Either

2. (a) Figure 2 shows the section of a bracket used to support a canopy.

Draw this section (full size) showing clearly how the centres of all arcs are obtained.

Mark all tangent points by a heavy dot and show clearly by construction lines how they are obtained.

Do not give dimensions.

(b) Figure 3 shows a sectional elevation of a north-light roof with a hexagonal air shaft passing through it.

Draw (to a scale of 1 inch represents 1 foot)—

(1) the elevation given ;

(2) a true shape of the roof surface AB showing the hole to be cut for the shaft ;

(3) a development of the sheet lead covering for that portion of the shaft above the roof surface.

Or

3. (a) The section of a steel rail is shown in Figure 4.

Draw this section (full size) showing clearly how the centres of all arcs are obtained.

Mark all tangent points by a heavy dot and show clearly by construction lines how they are obtained.

Do not give dimensions.

(b) Figure 5 shows two elevations of a sheet metal funnel.

Draw (half size)—

(1) the two elevations given showing the lines of interpenetration of the flat plates with the circular trunk ;

(2) a development of the circular pipe.

SCIENCE

LOWER GRADE—(GEOGRAPHY)

Wednesday, 27th March—9.30 A.M. to 12 NOON

Seven 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, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

SECTION A

The whole of this Section should be attempted.

N.B.—*Section A consists of* THREE *questions.*

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

 (*a*) Name the Chiltern Hills, the River Nith, Lake Windermere, Salisbury Plain, the Carse of Gowrie, the Weald, and the island of Islay.

 (*b*) Show, without boundaries, the position of the counties of Selkirk, Leicester, and Surrey ; mark and name the towns of Derby, Dumfries, Oxford, and Perth.

 (*c*) By inserting the more important lines radiating from it, show that Crewe is a great railway centre.

 (*d*) Write the word *chalk* over a large area where the rocks are of chalk, and the word *limestone* over a large area where they consist of limestone.

 (*e*) Mark and name the Manchester Ship Canal, the Severn Tunnel, the Forth Bridge, and the Menai Bridge.

 (*f*) Write *iron* over two places in England where iron-ore is mined in large quantities. **(15)**

2. On the accompanying map of the Indian Ocean—

(*a*) Name the Pamirs, the Zambezi, the Philippine Islands, Lake Victoria, the Deccan, and the Suez Canal.

(*b*) Mark and name the towns of Aden, Cairo, Delhi, Melbourne, and Singapore, and show, without boundaries, the position of Palestine, Siam, and Abyssinia.

(*c*) Draw a bold line round *one* area of inland drainage.

(*d*) Shade by horizontal lines the monsoon region of Asia, and by vertical lines the desert area of Australia, and write the word *nomads* over a region in which the inhabitants are nomadic.

(*e*) Insert the names of four ports, one exporting coffee, one exporting silk, one exporting rubber, and one exporting mineral oil. Under each port write the name of the commodity exported. **(15)**

3. The sketch-map below shows the central part of an isthmus, 6 miles from north to south and 5 miles from east to west. On the west the land rises steeply from the sea to a plateau just over 800 feet high. This plateau slopes down gently to a plain which borders the east coast. A river with two tributaries (*see sketch map*) rises on the plateau and falls into the sea about half-way along the coast. Draw a contoured map of this region, the scale being one inch to one mile, and the vertical interval, 100 feet. (*Pencil may be used.*)   **(10)**
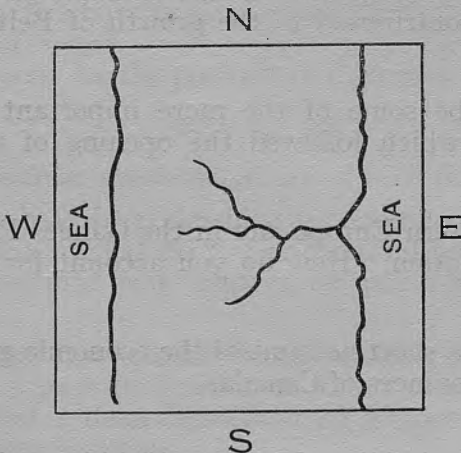
Section B

Two questions should be attempted from this Section.

4. Why is it that at the Equator the duration of daylight is constant throughout the year, while at the Arctic Circle it varies from twenty-four hours to zero ?   **(15)**

5. Describe two very different types of coast line, and say to what causes each is due.   **(15)**

6. How do you account for the existence of the Sahara Desert ?   **(15)**

7. What are the more important natural vegetation regions of *either* Australia *or* the Union of South Africa ? How do you account for each of the regions you mention ?
(15)

8. Write a short synopsis of any book of travel which you have recently read.   **(15)**

Section C

Two questions should be attempted from this Section.

9. Of the total population of Scotland, about 75 per cent. are in the Central Lowlands. What causes can you suggest for this distribution ?   **(15)**

10. What geographical factors have (*a*) determined the site, and (*b*) contributed to the growth of Belfast, Dublin, and Limerick ?   **(15)**

11. Describe some of the more important changes in ocean routes which followed the opening of the Panama Canal.   **(15)**

12. In western Europe and in the Ganges Plain there is a dense population. How do you account for the density in each case ?   **(15)**

13. Write a short account of the economic geography of the Prairie Provinces of Canada.   **(15)**

SCIENCE

HIGHER GRADE—(GEOGRAPHY)

Wednesday, 27th March—9.30 A.M. to 12 NOON

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, and leave a space of half an inch between the lines.   Marks may be deducted for bad or crowded writing.

SECTION A

The whole of this Section should be attempted.

1. The accompanying map is part of the one-inch Ordnance Survey map of England and Wales.

   (*a*) Describe the physical features of the region shown on the map, and in the course of your description explain the following lines from Tennyson :—

      " There twice a day the Severn fills,
       The salt sea water passes by
       And hushes half the babbling Wye,
       And makes a silence in the hills."

   (*b*) What illustrations does the map give of human occupation from very early times until the present day ?

   (*c*) Write a note on the routes followed by the road and by the railway respectively from Chepstow to the north-east.

   (*d*) Account for the position of Chepstow.   (**36**)

SECTION B

Two questions should be attempted from this Section.

2. Rivers have been classified as consequent, subsequent, and obsequent.   What do you understand by each of these terms ?   Illustrate your answer by reference to Scottish rivers.   (**16**)

3. Describe and account for the weather sequence which you would expect in Central Scotland after it had been broadcast that a deep depression off western Ireland was moving rapidly eastward.   (**16**)

4. In what ways may Australia be said to be peculiar in its native plants and animals ? Have these peculiarities any geographical significance ? **(16)**

5. Discuss the geographical factors that contributed to the early growth of civilisation in the eastern Mediterranean region. **(16)**

6. Write a short account of *one* of the following :—the Ordnance Survey, the Daily Weather Report, the Land Utilisation Survey. **(16)**

SECTION C

Two questions should be attempted from this Section.

7. Discuss the geographical conditions that have given importance since early times to any *two* of the following towns :—Stirling, Shrewsbury, Winchester, Dublin, Berwick-on-Tweed. **(16)**

8. What are the main divisions of the Alps ? Write a short description of each, and illustrate your answer by sketch maps. **(16)**

9. What do you understand by a natural region ? In the light of what you say, consider the claims of *one* of the following to be regarded as a natural region :—the Paris Basin, the rift valley of the Rhine, the plains of northern Italy. **(16)**

10. Contrast from a geographical point of view human activities in a monsoon country such as India with those in a region of the southern hemisphere with a Mediterranean type of climate such as the south-west of Cape Colony, or the south of South Australia. **(16)**

11. Compare *either* wheat cultivation in Canada with wheat cultivation in the Punjab, *or* cotton cultivation in the United States with cotton cultivation in Egypt. **(16)**

12. Select two regions of different types in which the seasonal migration of man (transhumance) is important, and in each case explain its character and the geographical circumstances to which it is due. **(16)**

SCIENCE

HIGHER GRADE—(PHYSICS)

Wednesday, 27th March—1.0 P.M. to 3.30 P.M.

Not more than FIVE questions should be attempted. One of these must be taken from Section I (Mechanics), and one from each of two other Sections. The remaining two questions may be selected from any part of the paper.

Answers should, wherever possible, be illustrated by carefully drawn diagrams of reasonable size.

20 *marks are assigned to each question.*

Mathematical tables will be supplied to those who desire them.

Before handing in their examination books candidates should enter in the space provided on the front cover the numbers of the questions they have attempted.

N.B.—Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

SECTION I (MECHANICS)

At least ONE *question from this Section must be attempted.*

1. Describe an experiment which you have performed to investigate the resultant of two unequal parallel forces acting in opposite directions. Discuss briefly the case in which these two forces are equal in magnitude.

Three parallel forces act at the collinear points A, B, C, such that AB = BC = 1 ft. The forces at A and C act in the same direction, that at B in the opposite direction. If the values of the forces are—at A 4 lb. weight, at B 6 lb. weight, and at C 1 lb. weight, find the resultant force and the point where it meets AC.

2. State the *triangle of forces*.

A body of weight 1 lb., resting on a smooth plane inclined at 30° to the horizontal, is kept in equilibrium by a horizontal force P. Employ the triangle of forces to find P and the reaction of the plane on the body.

Describe the experiment which you would carry out to verify these values.

3. Explain the terms *unit of acceleration* and *uniform acceleration*.

A body moving from rest with uniform acceleration *a* covers a distance *s* in time *t*. State the relation between *a*, *s*, and *t*, naming the units in which each of these quantities is measured. How would you verify the relationship experimentally?

A cricket ball is thrown vertically upward with a velocity of 80 ft. per sec. Find its height after 3 seconds.

4. How would you find, experimentally, the centre of gravity of a uniform thin sheet of metal? Explain carefully the principle on which your method depends.

Show, with sketches to illustrate, how the position of the centre of gravity affects the stability of a body.

A thin uniform circular disc of radius 10 cm. has a circular piece, radius 4 cm., cut from it. If the centres of the two circles are 5 cm. apart, find the centre of gravity of the metal which remains.

SECTION II (HEAT AND HYDROSTATICS)

5. State Boyle's Law.

You are provided with a fine glass tube 36 in. long, closed at one end, containing a thread of mercury 10 in. long, which, when the tube is horizontal, encloses a column of air 10 in. in length. Show that you could use this apparatus to verify Boyle's Law by holding the tube vertically (*a*) open end up, (*b*) open end down. What would be the length of the enclosed column of air in each case?

A diving bell consisting of a heavy, hollow cylinder, internal height 10 ft., open at its lower end, is held vertically and lowered into water by means of a chain until the water within the bell has risen 4 ft. What is the pressure of the air within the bell, and how far is the bottom of the bell below the surface of the water?

(Atmospheric pressure 30 in. mercury. Specific gravity of mercury 13·6.)

6. Describe the experiment you would perform to discover the variation in density of water as it is heated from 20° C. to 100° C.

An experiment yielded the following results in gm. per c.cm. :—

20°	30°	40°	50°	60°	70°	80°	100°
0·998	0·996	0·992	0·988	0·983	0·978	0·972	0·958

Plot a graph to show the variation of density with temperature.

The coefficient of expansion of aniline has a constant value, 0·00085, between 20° C. and 100° C. At 20° C. its density is 1·018 gm. per c.cm. Calculate its density at 100° C., and using the same axes as before, plot the corresponding graph for aniline from 20° C. to 100° C.

A small quantity of aniline is poured into a beaker of water at 20° C. Describe the behaviour of the aniline as the water is slowly heated to 100° C.

7. Write a note on the changes, if any, that take place in weight, volume, temperature, and state, of one gram of water at 100° C. when it receives 536 calories.

Sketch the apparatus you would employ to find the Latent Heat of evaporation of water. Tabulate the sources of error likely to interfere with the accuracy of the result and state how you would seek to eliminate them.

In modern refrigerating machines cold is produced by the evaporation of ammonia. What weight of ammonia would be evaporated in converting 4 lb. of water at 65·5° F. to ice at its melting point ?

L.H. Fusion of Ice, 144 B.Th.U.

L.H. Evaporation of Ammonia, 568 B.Th.U.

8. Describe and sketch the apparatus you would use to investigate the changes in pressure produced by heating a given mass of gas, its volume remaining constant.

Show how the apparatus could be used as a thermometer and state two advantages and two disadvantages such a thermometer has, when compared with the ordinary mercury thermometer.

A motor tyre is inflated to a pressure of 32 lb. per sq. in. when standing in a garage, temperature 15° C. What would be the pressure when the car is moved into bright sunshine, temperature 25° C. ? (Assume volume constant.)

SECTION III (SOUND AND LIGHT)

9. Explain as clearly as you can all that happens when you hear a sounding tuning fork.

What difference would you notice if the tuning fork was on a moving trolley, running (a) towards you, (b) away from you, with uniform velocity? Derive a formula for the changed frequency in each case, given n frequency of the fork, v velocity of the trolley, V velocity of sound in air.

Calculate the speed of a train if the note C (256) emitted by the whistle appears to an observer towards whom it is travelling to be C♯ (273).

What would be the frequency of the note received from the receding train?

(Velocity of sound in air, 1,120 ft. per sec.)

10. A smoked glass plate is allowed to fall so that a bristle attached to a vibrating tuning fork leaves a trace on the glass. Describe how you would perform this experiment and show clearly how you would use the trace to find the frequency of the fork.

In an experiment the distance between the two ends of the traced line AC was 35 cm. The number of crests between a point B (AB = 10 cm.) and the end point C was 25·5. Calculate the frequency of the tuning fork.

11. Account as clearly as you can for the fact that when a ray of light passes from air through a glass block it undergoes refraction.

Explain why a ray of light cannot always be refracted from one medium to another, and show how this affects the range of vision of a fish. To illustrate your answer draw a diagram showing the real path of rays of light that appear to a diver 4 ft. below the surface, to make angles of 60° and 30° respectively with the air-water surface.

(Index of refraction, air-water $\frac{4}{3}$.)

12. Describe the experiments you would perform to verify the formula giving the relative positions of the object and image for a concave mirror. How would you use your results to find the focal length of the mirror? How would you demonstrate that your answer was correct?

Distinguish between real and virtual images, and show by two diagrams the formation of one of each kind, using a concave mirror.

A concave mirror has a radius of curvature of 20 cm. Where must an object be placed to form (a) a real image, and (b) a virtual image, each 30 cm. from the mirror?

SECTION IV (MAGNETISM AND ELECTRICITY)

13. Define (a) *unit magnetic pole strength*, and (b) *unit strength (intensity) of magnetic field*.

You are given a deflection magnetometer and a bar magnet. Detail and explain the procedure you would adopt to compare the intensity of the field due to the earth's horizontal component with that of the field due to the magnet at a point on its axis distant 18 in. from its centre.

A long thin magnet is placed so that its north pole is directly above the centre of the needle of a deflection magnetometer. When the south pole of the magnet is 20 cm. east of the centre of the magnetometer needle, the latter is deflected through 45°. What will be the deflection when the south pole of the magnet is moved 10 cm. further east?

14. Describe any experiment in which you have used a potentiometer. Sketch the potentiometer and explain the principle of its use in the experiment you have described.

A battery of four cells is connected to 10 metres of uniform wire, the resistance of which is 0·26 ohm per metre. If the E.M.F. and internal resistance of each cell are respectively 1·8 volts and 0·6 ohm, find the fall of potential per metre of the wire.

15. Explain the following statement:—" The electro-chemical equivalent of copper is 0·000329 gm. per coulomb." Make a clear plan of the circuit and explain the method you would employ to compare the electro-chemical equivalents of copper and hydrogen.

A tangent galvanometer was joined in series with a battery and a copper voltameter. The galvanometer showed a steady deflection of 45°, and 0·184 gm. of copper was deposited in 30 minutes.

Calculate the reduction factor of the galvanometer.

16. Describe the electrophorus and explain its use to supply equal quantities of electricity to two hollow cans. If the two cans, one of which has twice the capacity of the other, rest on the plates of two exactly similar electroscopes, state and explain what is observed—

(a) when each can has received the same quantity of electricity,

(b) if the cans are now connected by a wire held by an insulating handle.

When the connecting wire has been withdrawn, how would you test whether the cans still hold equal quantities of electricity ? What result would you expect to obtain ?

SCIENCE

HIGHER GRADE—(PURE ZOOLOGY)

Friday, 29th March—1.0 P.M. to 3.0 P.M.

FIVE questions in all should be attempted.

Answers should, wherever possible, be illustrated by diagrams of reasonable size.

20 *marks are assigned to each question.*

N.B.—Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

1. Make a labelled drawing of an amoeba. How does amoeba obtain and digest its food, and what happens to that part of the food which is digested ?

Write an explanatory note on the contractile vacuole and its function.

2. **Either** (a) Describe the alimentary canal and the principal parts of the blood-vascular system of the earthworm, and write a note on the habits of the earthworm.

Or (b) Describe the feeding mechanism of the snail. Show how the snail aerates its blood, and briefly describe its heart.

3. Write an account of the life-history of the house-fly. (It is not necessary to describe the adult fly.)

4. Point out clearly the principal differences between a fish and an amphibian in external features, mode of respiration, and in the structure of the heart.

5. **Either** (*a*) State what you understand by *heredity* and by *variation*.

Or (*b*) State the principal characters of Coelenterates, Insects, Birds, and Mammals, and name an example of each group.

6. Write clear explanatory notes, including reference to the respective functions, of *four* of the following as seen in the rabbit :—

> Adrenal (supra-renal) body.
> Incisor teeth.
> Diaphragm.
> Mitral (bicuspid) valve.
> Pancreas.

7. The conditions of winter affect land animals in various ways. Illustrate this by reference to land animals found in Britain.

SCIENCE

HIGHER GRADE—(ZOOLOGY AND HUMAN PHYSIOLOGY)

Friday, 29th March—1.0 P.M. to 3.0 P.M.

FIVE questions in all should be attempted.

Answers should, wherever possible, be illustrated by diagrams of reasonable size.

20 *marks are assigned to each question.*

N.B.—Write legibly and neatly, and leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing.

Section I—Zoology.

1. Make a labelled drawing of an amoeba. How does amoeba obtain and digest its food, and what happens to that part of the food which is digested ?

Write an explanatory note on the contractile vacuole and its function.

2. Either (*a*) Describe the alimentary canal and the principal parts of the blood-vascular system of the earthworm, and write a note on the habits of the earthworm.

Or (*b*) Describe the feeding mechanism of the snail. Show how the snail aerates its blood, and briefly describe its heart.

3. Write an account of the life-history of the house-fly. (It is not necessary to describe the adult fly.)

4. Point out clearly the principal differences between a fish and an amphibian in external features, mode of respiration, and in the structure of the heart.

Section II—Human Physiology.

5. Describe the constitution and the functions of the blood. How is the pulse produced ?

6. Describe the position in the body and the functions of the kidneys.

7. Either (*a*) Explain carefully *the influence of environment on health*.

Or (*b*) Define the term *joint* and name three kinds of movable joints, giving an example of each. Explain the part played by the muscles in bending (flexing) and straightening (extending) the arm.

MUSIC

Lower Grade

Friday, 29th March—9.30 A.M. to 11 A.M.

N.B.—Candidates must write in ink, neatly and legibly, and they must leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing. Care must be taken to make the notation clear ; notes indistinctly placed will be regarded as wrong.

The answers to Section I must be written in the space provided on this examination paper, which must be given up with the examination book. The ruled pages in the examination book may be used for rough work on these questions.

The answers to Section II are to be written in the separate book provided.

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

SECTION I

ALL the questions in this Section should be attempted.

1. (*a*) What is the key of this passage ?   What other keys are suggested by the flow of the melody ?

(*b*) Rewrite the passage in the bass clef an octave and a fourth lower, adding the new key signature.
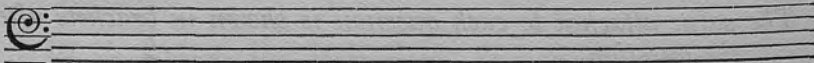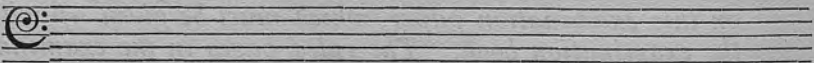

(*c*) Write the scale of F minor (melodic) ascending and descending, without key-signature, indicating the intervals as they occur by means of accidentals.

(10)
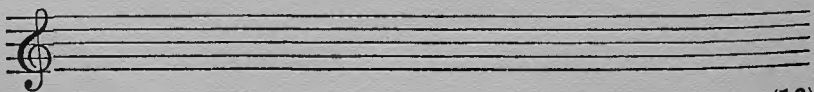
2. Write, in the key specified, the first *four* bars of *any two* of the following melodies :—

"A wee bird cam' " (F major), " Flora Macdonald's Lament " (G major), " The Harp that once thro' Tara's Halls " (E flat major), " Here's a Health unto His Majesty " (G major), " The hundred Pipers " (G major), " Let Erin remember " (F major), " O, my Love she's but a Lassie yet " (D major).

Write also the first four bars of any *two* melodies, other than the above, remembered by you, giving the name of each. (*Melodies quoted in question* 6 *of this paper will not be accepted.*)   (22)
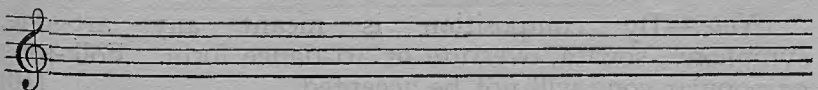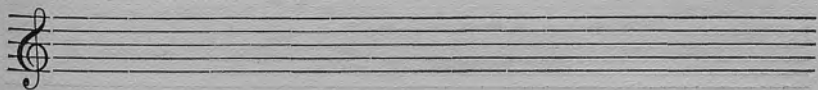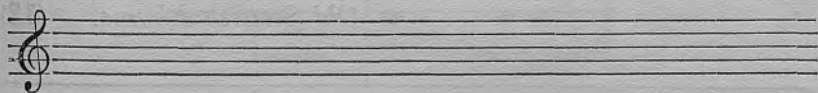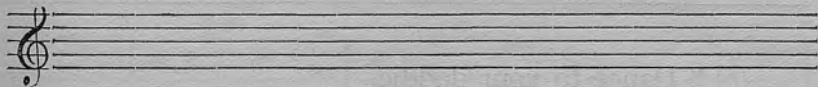
3. Write melodic phrases in Staff Notation suitable to and expressive of the poetic rhythms of the following lines. Key-signatures, time-signatures, bar-lines and musical terms or metronome marks to indicate the *tempo* must be added, and each syllable placed under the note or notes to which it is to be sung.
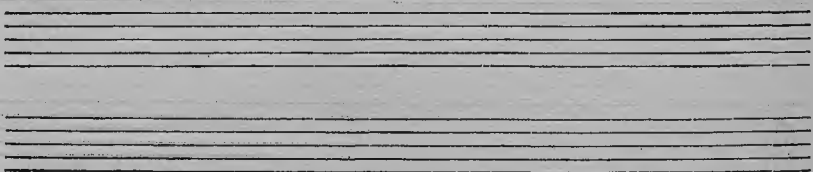
   (*a*) " When the voices of children are heard on the green
         And laughing is heard on the hill."

                                          William Blake.
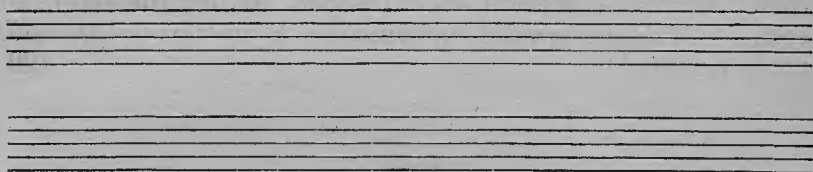
   (*b*) " Dance to your daddie,
         My bonnie laddie.
         Dance to your daddie, my bonnie lamb."

                                  Old Scottish Rhyme.   **(18)**

SECTION II

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

4. Name any five compositions you have heard. Give the name and nationality of the composer, mentioning the century in which he lived or naming any contemporary writer or composer. Select any two of the compositions mentioned by you and quote four bars from each.

   Note.—By composition is meant any art-song, symphony, sonata, overture or art-dance form. Folk-song or popular song will not be accepted.   **(10)**

5. Comment on any *five* of the following :—
polka, leading note, trombone, con sordini, adagio,
minuet, requiem, cantabile, string quartet.   **(10)**

6. Choose any *five* of the following themes and state by
whom each was composed and from what work it is taken.
Be careful to letter your answers correctly.   **(10)**

Allegro moderato.

Allegretto.

etc.

Andante.

Allegro.

Andante con moto.

E

etc.

Adagio sostenuto.

F

(horns)   (violins)   (horns)

(violins)   etc.

Andante.

G

etc.

Allegro.

H

etc.

Presto agitato.

Alla marcia.

MUSIC

HIGHER GRADE

Friday, 29th March—9.30 A.M. to 12 NOON

N.B.—Candidates must write in ink, neatly and legibly, and they must leave a space of half an inch between the lines. Marks may be deducted for bad or crowded writing. Care must be taken to make the notation clear; notes indistinctly placed will be regarded as wrong.

The answers to Section I must be written in the space provided on this examination paper, which must be given up with the examination book. The ruled pages in the examination book may be used for rough work on these questions.

The answers to Sections II and III are to be written in the separate book provided.

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

SECTION I

The THREE *questions in this Section should be attempted.*

1. (*a*) Add a bass to this melody. Harmonise in four vocal parts the cadences marked with an asterisk and the last four bars.

Moderato.

(*b*) Harmonise this sentence in four parts.

Tranquillo.

(20)

2. **Either** (*a*) Harmonise in short score, in *four parts* :—

Andante.

(15)

Or (*b*) Add a melodious treble part to this alto part. Rests may be used. (The rest in the treble part in the first bar is meant as an aid to candidates ; but its use is not obligatory.)

Andante.

(15)

3. **Either** (*a*) Continue the following for not less than eight bars in all. The melody must close in the key given :—

Moderato.

(15)

Or (*b*) Write a melody in staff notation suitable to the poetic rhythm and atmosphere of *either* of the following verses.   A key-signature and bar-lines must be added, and a musical term to indicate the *tempo*.   Place each syllable or word under the note or notes to which it is to be sung :—

> " Close thine eyes and sleep secure.
> Thy soul is safe, thy body sure.
> He that guards thee, He that keeps,
> Never slumbers, never sleeps."
>
> *Attributed to Charles the First.*

Alternatively :—

> " Three of us afloat in the meadow by the swing,
> Three of us aboard in the basket on the lea,
>> Winds are in the air, they are blowing in the spring
>> And waves are on the meadow like the waves there
>> are at sea."
>
> *R. L. Stevenson.*

SECTION II

Only ONE *question from this Section should be attempted.*

4. Write a brief description of a fugue. Quote the subject of any fugue known to you and name the composer. **(10)**

5. Comment briefly upon any four of the following :—

tarantella, invention, ayre, étude, whole-tone scale, organum, madrigal, polonaise.

Illustrate each part of your answer by reference to some musical example and, if possible, quote any phrase from the example referred to. **(10)**

SECTION III

Only ONE *question from this Section should be attempted.*

6. Choose *two* of the following works ; name the composer of each, indicate either by dates or by reference to contemporary composers, writers, painters, or events, the period at which he lived, and quote in staff notation a theme from each of the works you select :—

The Messiah, The Marriage of Figaro, Elijah, Carmen, The Seasons, Rigoletto.   **(15)**

7. Choose *one* of the following composers ; estimate his importance in the development of music, illustrating your answer by quoting in staff notation two themes from his works, and naming the works from which they are taken :—

Brahms, Gluck, Grieg, Purcell, Schumann.   **(15)**

8. Three British composers have died within the last two years—Edward Elgar, Frederick Delius, and Gustav Holst. Choose *one* of these and mention some of his characteristics as a composer, referring to any work or works of his that you yourself have heard.   **(15)**

9. Choose any *five* of the following themes and state by whom each was composed and from what work it comes. **Be careful to letter your answers correctly.**   **(15)**

Allegro molto moderato.

Allegro con brio.
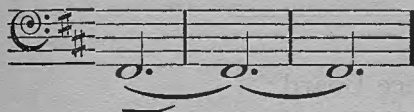

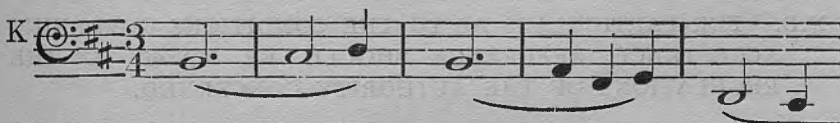*Allegro di molto.*

Moderato.

Presto.

J

etc.

Allegro moderato.

K

APPENDIX

———

LIST OF AUTHORITIES BY WHOM EVIDENCE OF SUCCESS AT THE LEAVING CERTIFICATE EXAMINATION IS CONDITIONALLY ACCEPTED IN LIEU OF PRELIMINARY EXAMINATIONS.

N.B.—FOR PARTICULARS AS TO THE CONDITIONS GOVERNING ACCEPTANCE REFERENCE SHOULD BE MADE TO THE REGULATIONS OF THE AUTHORITY CONCERNED.

———

Scottish Universities Entrance Board :
    University of Aberdeen.
    University of Edinburgh.
    University of Glasgow.
    University of St. Andrews.
University of Oxford.
University of Cambridge.
University of London.
University of Bristol.
University of Durham :
    Durham Colleges.
    Armstrong College, Newcastle-upon-Tyne.
    College of Medicine, Newcastle-upon-Tyne.
Northern Universities Joint Matriculation Board :
    University of Manchester.
    University of Liverpool.
    University of Leeds.
    University of Sheffield.
    University of Birmingham.
University of Wales.
The Queen's University of Belfast.
Girton College, Cambridge.
Imperial College of Science and Technology :
    Royal College of Science.
    Royal School of Mines.
    City and Guilds (Engineering) College.

Royal Holloway College, Englefield Green, Surrey.

Examiners of the General Council of Solicitors.

The Law Society.

The General Council of Medical Education and Registration of the United Kingdom.

The Dental Board of the United Kingdom.

The Joint Examinations held by :

> The Royal College of Physicians of Edinburgh.
>
> The Royal College of Surgeons of Edinburgh.
>
> The Royal Faculty of Physicians and Surgeons of Glasgow.

The Examining Board in England by the Royal College of Physicians of London, and the Royal College of Surgeons of England.

The Pharmaceutical Society of Great Britain.

The Chartered Accountants of Scotland.

The Institute of Chartered Accountants in England and Wales.

*The Society of Incorporated Accountants and Auditors.

*The Corporation of Accountants, Limited.

*The London Association of Certified Accountants.

*The Institute of Municipal Treasurers and Accountants (Incorporated).

The Institute of Company Accountants, Limited.

The Faculty of Actuaries in Scotland.

The Institute of Actuaries.

The Chartered Insurance Institute.

The Institute of Bankers.

The Institute of Bankers in Scotland.

The Chartered Institute of Secretaries.

The Royal Sanitary Institute and Sanitary Inspectors' Examination Joint Board.

*The Royal Sanitary Association of Scotland.

The Poor Law Examination Board for Scotland.

The Faculty of Surveyors of Scotland.

The Chartered Surveyors' Institution.

The Auctioneers' and Estate Agents' Institute of the United Kingdom.

The Royal Institute of British Architects.

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* Evidence of having obtained the Day School Certificate (Higher) is also accepted by these Authorities ; and by the

Air Ministry—for entry as Aircraft Apprentice and as Apprentice Clerk, Royal Air Force.

The Institution of Civil Engineers.
The Institution of Mechanical Engineers.
The Institution of Municipal and County Engineers.
The Institute of Chemistry of Great Britain and Ireland.
The National Froebel Union.
The Institute of Physics.
The Royal College of Veterinary Surgeons.
The British Optical Association.
The Chartered Institute of Patent Agents.
The Library Association.
The Textile Institute.
*The Institute of Transport.

Circular 94 (Day School Certificate (Higher) : Conditions of issue.) (December, 1934.) Price 1$d.$; post free, 1½$d.$

Circular 63 (Conditions of the award of Day School Certificates (Lower)). (January, 1924.) Price 1$d.$; post free, 1½$d.$ (*See also* Circulars 73 and 88.)

Circular 73 (Day School Certificate (Lower) ; Amending conditions of award of). (January, 1927.) Price 1$d.$; post free, 1½$d.$

Circular 88 (Day School Certificate (Lower) ; alteration of procedure for issuing certificate). (December, 1932.) Price 1$d.$; post free, 1½$d.$

Superannuation Scheme for Teachers (Scotland), 1926. S.R. & O., 1926, No. 363, S. 13. Price 3$d.$; post free, 3½$d.$

Amendment (1928) of the Superannuation Scheme for Teachers (Scotland), 1926. S.R. & O., 1928, No. 1044, S. 55. Price 1$d.$; post free, 1½$d.$

Amendment (1932) of the Superannuation Scheme for Teachers (Scotland), 1926. S.R. & O., 1932, No. 1073, S. 54. Price 1$d.$; post free, 1½$d.$

Amendment (1933) of the Superannuation Scheme for Teachers (Scotland), 1926. S.R. & O., 1933, No. 1169, S. 67. Price 1$d.$; post free, 1½$d.$

Teachers' Superannuation Rules (Scotland), 1926. S.R. & O., 1926, No. 356, S. 9. Price 3$d.$; post free, 3½$d.$

Teachers' Superannuation Rules (Scotland), 1926—Amendment of 1929. S.R. & O., 1929, No. 997, S. 69. Price 1$d.$; post free, 1½$d.$

Education (Scotland) Teachers' Superannuation Grant Regulations, dated 19th September, 1928. S.R. & O., 1928, No. 951, S. 49. Price 1$d.$; post free, 1½$d.$

Conditions as to Minimum National Scales of Salaries for Teachers in Scotland, 1934. S.R. & O., 1934, No. 630, S. 35. Price 2$d.$; post free, 2½$d.$

Education Authorities (Scotland) Grant Regulations, dated 7th June, 1934. S.R. & O., 1934, No. 832, S. 49. Price 2$d.$; post free, 2½$d.$

Education Authorities (Scotland) Grant Amendment Regulations, dated 12th July, 1934. S.R. & O., 1934, No. 910, S. 52. Price 1$d.$; post free, 1½$d.$

Education (Scotland) Grant Amendment Regulations, dated 12th July, 1934. S.R. & O., 1934, No. 911, S. 53. Price 1$d.$; post free, 1½$d.$

Central Institutions (Scotland) Grant Regulations, dated 3rd July, 1923. S.R. & O., 1923, No. 927, S. 57. Price 1$d.$; post free, 1½$d.$

Education (Scotland) Miscellaneous Grants Regulations, dated 31st July, 1925. S.R. & O., 1925, No. 882, S. 62. Price 2$d.$; post free, 2½$d.$

Recommendations to be followed in the Planning and Fitting Up of Schools, 1925. (*Reprinted* 1931.) Price 6$d.$; post free, 7$d.$

List of Approved Schools, 1933. Price 2$d.$; post free, 2½$d.$

Children and Young Persons (Scotland) Care and Training Regulations, 1933. S.R. & O., 1933, No. 1006, S. 55. Price 4$d.$; post free, 5$d.$

Circular 79 (Draws attention of Education Authorities to recommendations of Committees on Sexual Offences and Young Offenders). (January, 1929.) Price 1$d.$; post free, 1½$d.$

Circular 80 (Draws attention of Managers of Certified Schools to recommendations of Committees on Sexual Offences and Young Offenders). (January, 1929.) Price 1$d.$; post free, 1½$d.$

Circular 83 (Advisory Committees for Juvenile Employment). (October, 1930.) Price 1$d.$; post free, 1½$d.$

M.4. (1934).—Educational Appointments Overseas. Price 2$d.$; post free, 2½$d.$

SECONDARY EDUCATION
(SCOTLAND)

LEAVING CERTIFICATE EXAMINATION

(INCLUDING DAY SCHOOL CERTIFICATE
(HIGHER) GENERAL PAPER)

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1935

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6   4   2   0   2

56   56

54   54

52   52

50   50

8   4   2   0

English Miles   Scale 1: 2,750,000   Kilometres
0 10 20 30 40 50 60   Projection: Conical.   0   20   40   60

1375/35.
Ordnance Survey, 1935.

SKETCH - MAP OF THE INDIAN OCEAN

LEAVING CERTIFICATE EXAMINATION, 1935

SCIENCE.
LOWER GRADE—(GEOGRAPHY).

MAPS.

FILL THIS IN FIRST.

Name of School...
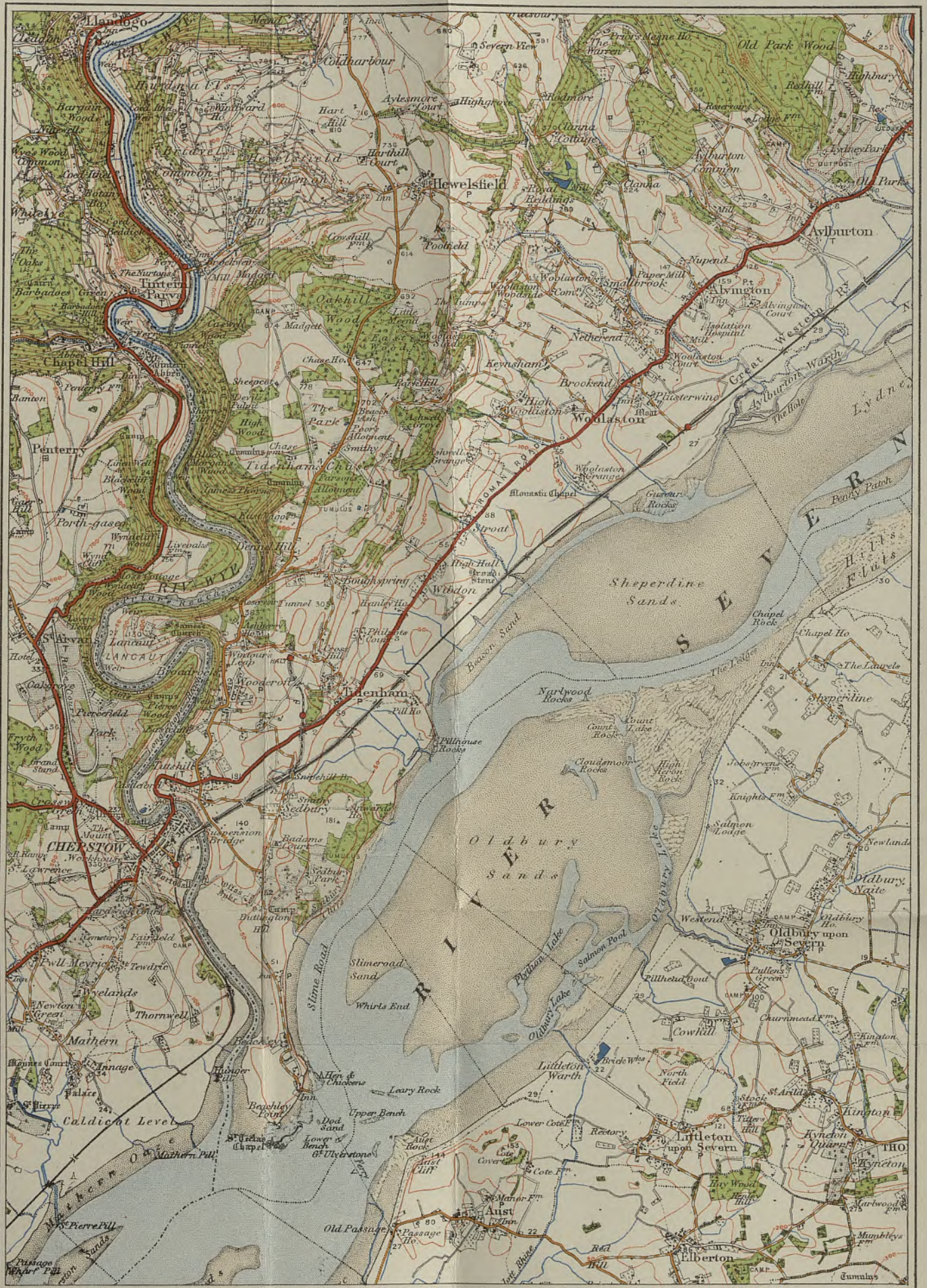
Name of Pupil...

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

[OVER.

1,675/35.

Scale of One Inch to One Statute Mile = $\frac{1}{63360}$

8 7 6 5 4 3 2 1 0   1   2   3   4   5 Miles

1000   0   1000   2000   3000   4000   5000   6000   7000   8000   9000 Yards

1   0   1   2   3   4   5   6   7   8 Kilometres

LEAVING CERTIFICATE EXAMINATION, 1935.

SCIENCE
HIGHER GRADE—(GEOGRAPHY)

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.

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