SECONDARY EDUCATION
(SCOTLAND)

LEAVING CERTIFICATE EXAMINATION

(INCLUDING DAY SCHOOL CERTIFICATE
(HIGHER) GENERAL PAPER)

EXAMINATION PAPERS
1937

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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 1937 it commenced on Monday, 15th 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 21st September, 1936. (Price 4*d*. ; post free 5*d*.)

EXAMINATION PAPERS

1937

DAY SCHOOL CERTIFICATE (HIGHER)

GENERAL PAPER

Monday, 15th 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 subjects :—

(*a*) The Legend of King Arthur and his Knights.
(*b*) A Jacobite survivor of the Forty-Five Rebellion describes his adventures.
(*c*) A visit to a Zoo *or* to a Menagerie *or* to a Circus.
(*d*) In what European country would you like to spend a holiday, and why ?
(*e*) The story of Samson *or* of Elijah *or* of Daniel.
(*f*) Give an account of any scientific experiment you have performed ; *or* describe how to cook and serve a three-course luncheon. **(35)**

2. Read the following passage carefully, and then answer the questions on it :—

The creaking which sounded all day from the wood was not the groaning of one bough against another in the wind, but the croaking of a carrion crow on her nest, brooding the eggs. It was a harsh, monotonous noise, and sounded sinister *among the pervading grace and lightness of spring*. *As indeed it was*, for, with the hatching of the young, increasing depredations were to be expected on my chicks. The crow haunted our buildings, like a vile omen; one would ever come round a corner to find her shadowing silently away with some small prey, or slinking only a little way off to await her further opportunity.

It became a duel of watchfulness and elusion. A single shot, well-aimed, would rid me of her and her brood, but the carrion crow is crafty. So I wore a green cap and a green coat, the less easily to be seen, but she saw me. To sit thus still in a wood may seem dull, but they were fascinating hours; *the wood came to life*. A fox padded about, *vaguely uneasy ;* pheasants strolled like fine gentlemen in a park ; a white owl swooped so close that I felt the beat of its wings in the air ; and in the dusk the white tails of rabbits fluttered like fairies' delicate wings.

I had her at last, though. One evening, as I stepped out of the wood, I found her flying straight towards me. She gave a cry, and veered sharply, but she was right above me, and she knew that *her hour had come*. I shot her full in the head ; she crashed into the wood like a stone, and never moved. She lay on her back, caught up in a bramble thicket, her wicked claws curled empty in the air, while a dead chick dropped from branch to branch to the ground.

    (*a*) (i) Describe the surroundings in which the crow had her nest.

        (ii) What do you gather from the passage about the nature and habits of the crow ?

        (iii) Tell in your own words the manner of the crow's death. **(20)**

    (*b*) Explain carefully the meaning of the following phrases, *as used in the passage :*—among the pervading grace and lightness of spring ; as indeed it was ; the wood came to life ; vaguely uneasy ; her hour had come. **(10)**

(c) Expand the following phrases into clauses, and say what kind of clause each is :—with the hatching of the young ; well-aimed ; the less easily to be seen. **(6)**

(d) What kind of movement is described by each of the following verbs :—slink, pad, stroll, swoop. **(4)**

(e) Give words that are opposite in meaning to each of the following :—monotonous, silently, crafty, dusk, delicate. **(5)**

3. (a) Combine the following statements into a complex sentence :—

The old man lifted the box—he showed me a swarm of bees—he jerked them on to the floor—they scattered in all directions. **(4)**

(b) Put into reported (or indirect) speech :—

" Now, boy," said Pew, " take me to the captain." " Sir," said I, " I dare not. The captain is not what he used to be." " Take me in straight," retorted the beggar, " or I'll break your arm." **(3)**

(c) Give the first person singular of the past indicative active of the following verbs :—lay, eat, slay, begin, sting, teach. **(3)**

4. (a) Construct sentences, each containing one of the following idioms correctly used :—as good as gold ; out of sorts ; touch and go ; the salt of the earth ; a thorn in the flesh ; the king of terrors. **(6)**

(b) Explain the following abbreviations :—P.T.O., R.A.F., G.P.O., CXV, via, do., i.e., etc. **(4)**

1937
LEAVING CERTIFICATE EXAMINATION
ENGLISH
(INCLUDING LITERATURE AND HISTORY)
(FIRST PAPER (a)—COMPOSITION)

Monday, 15th 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 :—

15

    (*a*) A visit to a museum, *or* to a shipyard, *or* to a factory.

    (*b*) Does a poem gain or lose by being written in dialect ?

20

    (*c*) " A little learning is a dangerous thing."   Discuss.

    (*d*) Given ample means and leisure to travel abroad, what foreign country more than any other would you prefer to visit, and how would you plan to spend your time there ?

2

    (*e*) " The simple life "—do modern conditions make it possible or, if possible, desirable ?

(35)

3

ENGLISH

(INCLUDING LITERATURE AND HISTORY)

(FIRST PAPER (*b*)—INTERPRETATION AND LANGUAGE)

Monday, 15th 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. The question of compulsory education is settled so far as Nature is concerned. Her bill on that question was framed and passed long ago. But, like all compulsory legislation, that of Nature is harsh and wasteful in its
5 operation. Ignorance is visited as sharply as wilful disobedience—incapacity meets with the same punishment as crime. Nature's discipline is not even a word and a blow, and the blow first ; but the blow without the word. It is left you to find out why your ears are boxed.
10   The object of what we commonly call education—that education in which man intervenes and which I shall distinguish as artificial education—is to make good these defects in Nature's methods ; to prepare the child to receive

Nature's education, neither incapably nor ignorantly, nor
15 with wilful disobedience ; and to understand the pre-
liminary symptoms of her displeasure, without waiting for
the box on the ear. In short, all artificial education ought
to be an anticipation of natural education. And a liberal
education is an artificial education which has not only
20 prepared a man to escape the great evils of disobedience to
natural laws, but has trained him to appreciate and to
seize upon the rewards which Nature scatters with as free
a hand as her penalties.

That man, I think, has had a liberal education, who
25 has been so trained in youth that his body is the ready
servant of his will, and does with ease and pleasure all the
work that, as a mechanism, it is capable of ; whose intellect
is a clear, cold, logic engine, with all its parts of equal
strength, and in smooth working order ; ready, like a steam
30 engine, to be turned to any kind of work, and spin the
gossamers as well as forge the anchors of the mind ; whose
mind is stored with a knowledge of the great and funda-
mental truths of Nature and of the laws of her operations ;
one who, no stunted ascetic, is full of life and fire, but whose
35 passions are trained to come to heel by a vigorous will,
the servant of a tender conscience ; who has learned to
love all beauty, whether of Nature or of art, to hate all
vileness, and to respect others as himself.

T. H. Huxley.

Read the above passage carefully, and then answer
the following questions :—

(*a*) State briefly in your own words (i) the distinction
here made between a *natural* and an *artificial*
education, and (ii) how the one ought to be
related to the other.

(*b*) What, stripped of metaphor, are (i) the *physical*,
(ii) the *mental*, (iii) the *moral* characteristics, as
here defined, of the liberally educated man ?
Summarise them briefly in the order just given.

(*c*) Under what figure is (i) *Nature* represented in
lines 1–5, and (ii) the *intellect* in lines 27–31, and
how, in each case, is the figure carried out ?

(*d*) Make a general analysis into clauses of the sentence
" That man, I think . . . capable of " (lines 24–27).

(*e*) Explain the following :— *compulsory legislation* (lines 3–4), *preliminary symptoms* (lines 15–16), *fundamental truths* (lines 32–33), *stunted ascetic* (line 34), *tender conscience* (line 36).

(*f*) Give the derivation of any *five* of the following words :—compulsory, disobedience, crime, intervenes, preliminary, symptoms, mechanism, logic, gossamers, tender, beauty.   **(40)**

2. (*a*) Punctuate the following passage correctly, and rewrite it, without altering the words or their order, as two stanzas of rhyming verse :—

Four voices of four hamlets round from far and near on mead and moor swell out and fail as if a door were shut between me and the sound each voice four changes on the wind that now dilate and now decrease peace and goodwill goodwill and peace peace and goodwill to all mankind.

(*b*) Put the following sentence into reported speech :— " There is some hope," replied the doctor, " and where there is hope there is life—although," he added with a smile, " many people prefer the reverse form of that proverb."

(*c*) What is the origin of the following idioms ?— To kill the fatted calf, a Judas kiss, a Herculean task, to cross the Rubicon, the Slough of Despond.   **(15)**

3. Explain and exemplify : heroic couplet, inversion, malapropism, colloquialism, rhetorical question.   **(10)**

ENGLISH

(INCLUDING LITERATURE AND HISTORY)

(SECOND PAPER—LITERATURE)

Monday, 15th March—1.30 P.M. to 2.45 P.M.

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*) Consider to what extent any *one* of the following Shakespearean characters was morally responsible for the series of events which ended in his death :—Richard II, Brutus, Hamlet, King Lear.

Or (*b*) Relate the opening scene in any *one* of Shakespeare's plays and show its importance for the proper understanding of all that follows.

Or (*c*) Illustrate some of the ways in which a Shakespearean drama was more suitable for presentation in an Elizabethan than in a modern theatre.   (**16**)

2. Say what is *peculiarly* characteristic in Milton's **or** Wordsworth's **or** Browning's poetic style (*i.e.*, his way of writing) and choice of subject. If possible, illustrate your reply by quotation from the writer's poems.

Or

Write a short appreciation of *one* of the following :— Spenser's *Epithalamion*, Dryden's *Alexander's Feast*, Burns's *The Cotter's Saturday Night*, Scott's *Marmion*, Keats's *Ode to a Nightingale*, Tennyson's *The Lady of Shalott*, Mr. Masefield's *The Everlasting Mercy*.   (**12**)

3. How do you account for the popularity of satire in the 18th century ? Illustrate your answer by reference to some famous examples of this kind of poem.   (**12**)

4. Describe any *one* humorous character in a work by any *one* of the following authors :—Addison, Goldsmith, Scott, Dickens, Jane Austen, George Eliot, G. K. Chesterton, P. G. Wodehouse.   (**12**)

5. Write briefly on any *one* of the following :—
    (*a*) Dr. Johnson as a man of letters ;
    (*b*) Carlyle as a historian and writer of English ;
    (*c*) Thomas Hardy as a novelist.

Or

Summarise any piece of literary criticism by *either* Macaulay *or* Matthew Arnold of which you strongly approve or disapprove, giving reasons for your view.   (**12**)

6. What do you regard as the essential features of a good lyric poem ? Illustrate, if you can, by quotation.

Or

Write an appreciation of the historical novel with which you are most familiar. **(12)**

ENGLISH

(INCLUDING LITERATURE AND HISTORY)

(THIRD PAPER—HISTORY)

Monday, 15th 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 brief, and not more than 15 minutes should be devoted to the whole question.

1. Show *briefly* the historical significance of *five* of the following :—Peace of Wedmore (878) ; Death of Alexander III ; Battle of Bosworth ; Petition of Right ; Secret Treaty of Dover (1670) ; Battle of Culloden ; Berlin Decree ; The Catholic Emancipation Act (1829) ; Jameson Raid ; Locarno Pact. **(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. **Either** (*a*) Give an account of the Roman Occupation of Britain ;

Or (*b*) Estimate the influence of the Crusades on European civilisation. **(15)**

3. (*a*) Do you think that Henry II or Edward I has the better claim to be called "the greatest of the Plantagenets" ? Give your reasons.

Or (*b*) Do you agree with the view that James I (1406–37) was the greatest of the Stewarts ? Give your reasons.

Or (*c*) What were the most striking effects of the Italian Renaissance on European society, art and general culture ? **(15)**

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

4. **Either** (*a*) Explain the parts played in the Age of Discovery by Portugal, Spain and England before 1558.

Or (*b*) Explain the social and economic changes of the sixteenth century in England and show what steps Elizabeth took to remedy the grievances to which they gave rise. **(15)**

5. Do you think that the Revolution of 1688 effected greater changes in England or in Scotland ? Give your reasons. **(15)**

6. Discuss the historical importance of *two* of the following :—Cardinal Wolsey ; Andrew Melville ; Sir Walter Raleigh ; Henry IV of France ; Thomas Wentworth, Earl of Strafford ; Sir Isaac Newton ; James, first Earl Stanhope (d. 1721) ; Duncan Forbes of Culloden. **(15)**

SUB-SECTION (3). MODERN PERIOD (1763–1937).

7. Do you consider that the elder or the younger Pitt rendered the greater services to his country ? Give reasons for your view. **(15)**

8. **Either** (*a*) Explain the importance of the Turkish problem in Europe between 1815 and 1878.

Or (*b*) Trace the steps by which the franchise has been extended in Britain in the years subsequent to 1832. **(15)**

9. **Either** (*a*) Explain the causes and note the principal events of the American Civil War.

Or (*b*) " The policy of Mr. Gladstone showed him to be a true disciple of Sir Robert Peel." To what extent and on what grounds do you agree with this statement ? **(15)**

10. Discuss the historical importance of *two* of the following :—Charles James Fox ; the first Duke of Wellington ; the first Earl of Durham ; Cardinal Newman ; Thomas Huxley ; General Gordon ; Joseph Chamberlain ; Lord Kelvin ; Marshal Joffre.   **(15)**

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

(*a*) Reasons for the abandonment of democratic government in some continental countries since the war.

(*b*) The system of mandates under the League of Nations, illustrating your answer from the history of any one mandated territory since 1919.

(*c*) The chief industrial changes in Britain since 1910.
          (15)

LATIN

LOWER GRADE

Monday, 22nd 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*) *Henna, where Dis carried off Proserpina, daughter of Ceres.*

Insula Sicilia tota est Cereri et Liberae consecrata. credunt enim Siculi ipsi et ceterae gentes raptam esse Liberam, quam Proserpinam vocant, ex Hennensium silva, qui locus in media est insula situs. quam cum investigare[1] et conquirere Ceres vellet, dicitur inflammasse taedas[2] ex iis ignibus, qui ex Aetnae vertice erumpunt ; quas sibi cum ipsa praeferret, orbem omnem peragrasse terrarum. Henna autem, ubi ea gesta esse memorantur, est loco altissimo, quo in summo est aequata agri planities et aquae perennes ; circa eam lacus silvaeque sunt atque laetissimi flores omni tempore anni. locus ipse raptum illum virginis, quem iam

[1] investigo = trace.   [2] taeda = torch.

a pueris accepimus, videtur declarare. nam prope est spelunca quaedam infinita altitudine, qua Ditem ferunt repente cum curru exstitisse([1]), abreptamque ex eo loco virginem secum asportasse, et subito non longe a Syracusis penetrasse sub terras. **(30)**

([1]) exsisto = emerge.

(b) *The suspected treachery of Volux.*

Ubi diei vesper erat, repente Volux incerto vultu pavens ad Sullam accurrit ; dicit se a speculatoribus certiorem esse factum, Iugurtham haud procul abesse ; ut noctu secum profugeret, hortatur. ille animo feroci negat se totiens fusum Iugurtham pertimescere. ceterum ab eodem monitus, ut noctu proficisceretur, consilium approbat ; statim milites cenatos iubet esse in castris, ignesque quam plurimos facere, dein prima vigilia silentio egredi. iamque nocturno itinere fessis omnibus Sulla pariter cum ortu solis castra ponebat, cum equites nuntiant Iugurtham circiter duum milium intervallo ante eos consedisse. quod postquam auditum est, tum vero ingens metus nostros invadit ; credunt se proditos a Voluce et insidiis circumventos. at Sulla, quamquam eadem existimabat, tamen ab iniuria eum prohibet. **(20)**

2. Translate into Latin :—

   (1) I shall never be able to swim unless you teach me.

   (2) Do you believe that good men always forgive their enemies ?

   (3) Let us leave home in the morning and not return before sunset.

   (4) When he heard the shouting, he ran into the middle of the camp.

   (5) Few understand why we became Roman citizens.

   (6) As you wish to reach Italy to-day, you must start now.

   (7) Tell me why you forbade the sentries to open the gates.

   (8) Though he is often lazy, he worked for ten hours yesterday. **(23)**

3. (a) Give the first person singular of the perfect indicative active, and the first supine, of diripio, surgo, respondeo, exquiro, sepelio, divido, sedeo, adimo.

   (b) Give the genitive plural of caput, imber, fons, genus, ignis, agger, rapax. **(7)**

LATIN

HIGHER GRADE—(FIRST PAPER)

Monday, 22nd 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 the following passages :—

1. *Cicero tells how he came to champion the Sicilians against Verres.*

Quaestor in Sicilia fui ; ita ex ea provincia discessi, ut Siculis omnibus iucundam diuturnamque memoriam quaesturae nominisque mei relinquerem. qui nunc populati atque vexati ad me publice saepe venerunt, ut suarum fortunarum defensionem susciperem. me saepe esse pollicitum dicebant, si quod tempus accidisset, quo tempore aliquid a me requirerent, commodis eorum me non defuturum. venisse tempus aiebant, non iam ut commoda sua, sed ut vitam salutemque totius provinciae defenderem : sese iam ne deos quidem in suis urbibus, ad quos confugerent, habere, quod simulacra sanctissima C. Verres ex delubris religiosissimis sustulisset ; orare, ne illos supplices aspernarer, quos, me incolumi, nemini supplices esse oporteret. tuli graviter et acerbe in eum me locum adduci, ut aut eos homines spes falleret, qui opem a me atque auxilium petissent, aut ego, qui me ad defendendos homines ab ineunte adulescentia dedidissem, officio coactus ad accusandum traducerer. adductus sum, iudices, officio, fide, vetere consuetudine maiorum, ut onus huius laboris mihi suscipiendum putarem. **(35)**

2. *Though painful to recall, Diomede relates the hardships*
   of the Greeks returning from Troy.

Admonitu quamquam luctus renoventur amari,
perpetiar memorare tamen.   postquam alta cremata est
Ilios, et Danaas paverunt Pergama flammas,
spargimur, et ventis inimica per aequora rapti
fulmina, noctem, imbres, iram caelique marisque
perpetimur Danai, cumulumque Capharea[1] cladis.
neve morer referens tristes ex ordine casus,
Graecia tum potuit Priamo quoque flenda videri.
me tamen armiferae servatum cura Minervae
fluctibus eripuit.   patriis sed rursus ab agris
pellor, et antiquo memores de vulnere poenas
exigit alma Venus ; tantosque per alta labores
aequora sustinui, tantos terrestribus armis,
ut mihi felices sint illi saepe vocati,
quos communis hiems importunusque Caphareus
mersit aquis, vellemque horum pars una fuissem.

[1] The Greek fleet suffered a crowning disaster in being wrecked on
Cape Caphareus.   Capharea is accusative.

Scan the last three lines, marking the caesura in each.

(30)

3. *Ambassadors come to Hannibal, recalling him to Carthage.*

Vix lacrimis temperans dicitur Hannibal legatorum verba
audisse.   postquam edita sunt mandata, " iam palam,"
inquit, " revocant, qui, vetando supplementum et pecuniam
mitti, iam pridem retrahebant.   vicit ergo Hannibalem non
populus Romanus toties caesus fugatusque, sed senatus
Carthaginiensis.   neque hac deformitate reditus mei tam
P. Scipio exsultabit quam Hanno, qui domum nostram,
quando alia re non potuit, ruina Carthaginis oppressit."
iam hoc ipsum praesagiens animo praeparaverat ante naves.
raro quemquam alium patriam exsilii causa relinquentem
magis maestum abisse ferunt quam Hannibalem hostium
terra excedentem ; respexisse saepe Italiae litora et, deos
hominesque accusantem, in se quoque esse exsecratum, quod
non cruentum ab Cannensi victoria militem Romam
duxisset : Scipionem ire ad Carthaginem ausum, qui consul
in Italia Poenum non vidisset ; se, centum milibus arma-
torum ad Trasimenum ac Cannas caesis, circa Casilinum
Cumasque et Nolam consenuisse.   **(25)**

LATIN

HIGHER GRADE—(SECOND PAPER)

Monday, 22nd 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 Latin prose :—

Though Servius's mother was a slave, he married the
daughter of King Tarquinius, who often entrusted important
business to him. Indignant that he was thus favouring
Servius, the sons of Ancus resolved to kill Tarquinius. They
sent two men with fictitious complaints, and while he was
listening to the one, the other struck him with a sword.
A great tumult arose when the citizens learned what had
happened, and they flocked to the palace. The Queen
ordered the gates to be shut, and announced that the King
was not dead but only wounded, and had commanded that
Servius should rule until he recovered. Servius began to
conduct affairs as the King was wont to do. When it
became known after some days that Tarquinius had died,
Servius did not resign the royal power, but persuaded the
people to choose him as their King. He ruled with clemency
and justice ; he loved peace and waged no wars, and with the
Latins he made a treaty that the Romans and they should
always live in friendship with each other.   **(35)**

2. Translate into Latin :—
    (1) If it rains to-morrow morning, the river will be too
        deep for us to cross.
    (2) Do not believe that anyone is a prudent leader until
        you have compared him with Fabius.
    (3) All the time I was delivering that speech, I was in
        doubt where you had gone.
    (4) It is said that wealthy men at Rome were less careful
        in choosing their friends than in buying their
        horses.
    (5) We gave each of you three fields and a cow : why do
        you all complain that you are poor ?
    (6) Though the forest is not so thick as you supposed, we
        must take care not to fall into an ambush.   **(20)**

3. (a) Give the nominative singular masculine of the future
participle of ordior, cunctor, ulciscor, molior,
morior, metior.

(b) Give *one* Latin word for each of these :—ten times ;
from both sides ; whence ; at the same time.   (5)

GREEK

LOWER GRADE

Friday, 19th 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 death of Drimacus, head of a band of runaway
slaves. He levied toll on the Chians, but in
a reasonable way.*

Ἐκήρυξε μὲν οὖν ἡ τῶν Χίων πόλις χρήματα δώσειν
πολλὰ τῷ τὸν Δρίμακον λαβόντι ἢ τὴν κεφαλὴν κομίσαντι·
οὗτος δὲ ὁ Δρίμακος, πρεσβύτερος γενόμενος, καλέσας τὸν
ἑαυτοῦ δοῦλον, λέγει αὐτῷ ὅτι ''ἐγώ σε πάντων ἀνθρώπων
ἠγάπησα μάλιστα, καὶ σύ μοι εἶ καὶ παῖς καὶ υἱὸς καὶ τὰ
ἄλλα πάντα· ἐμοὶ μὲν οὖν χρόνος ἱκανὸς βεβίωται, σὺ δὲ
νέος εἶ καὶ ἀκμὴν ἔχεις τοῦ ζῆν. τί οὖν ἐστίν; ἄνδρα σὲ
δεῖ γενέσθαι καλὸν καὶ ἀγαθόν. ἐπεὶ γὰρ ἡ πόλις τῶν Χίων
δίδωσι τῷ ἐμὲ ἀποκτείναντι χρήματα πολλὰ καὶ ἐλευθερίαν
ὑπισχνεῖται, δεῖ σε ἀφελόντα μου τὴν κεφαλὴν εἰς
Χίον ἀπενεγκεῖν καὶ λαβόντα τὰ χρήματα εὐδαιμονεῖν.''
ἀντιλέγοντος δὲ τοῦ νεανίσκου, πείθει αὐτὸν τοῦτο ποιῆσαι·
καὶ ὅς, ἀφελόμενος αὐτοῦ τὴν κεφαλήν, λαμβάνει παρὰ τῶν
Χίων τὰ ἐπικηρυχθέντα χρήματα. ὕστερον δὲ οἱ Χίοι, πάλιν
ὑπὸ τῶν οἰκετῶν ἀδικούμενοι, μνησθέντες τῆς τοῦ Δριμάκου
ἐπιεικείας,[1] ἡρῷον[2] ἱδρύσαντο κατὰ τὴν χώραν.   (25)

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[1] reasonableness.
[2] temple (dedicated to a hero).

(b) *Panthea, who has been captured by Cyrus, and her husband are re-united.*

Ἡ δὲ Πάνθεια πρὸς τὸν Κῦρον εἶπε, "μὴ λυποῦ, ὦ Κῦρε, ὅτι Ἀράσπας οἴχεται· ἦν γὰρ ἐμὲ ἐάσῃς πέμψαι πρὸς τὸν ἐμὸν ἄνδρα, ἐγώ σοι ἀναδέχομαι ἥξειν πολὺ Ἀράσπου πιστότερον φίλον." ἀκούσας ταῦτα ὁ Κῦρος ἐκέλευε πέμπειν. ὡς δ' ἔγνω ὁ Ἀβραδάτας τὰ παρὰ τῆς γυναικὸς σύμβολα,(1) ἄσμενος πορεύεται πρὸς τὸν Κῦρον. ὡς δ' ἦν πρὸς τοῖς τῶν Περσῶν σκοποῖς, πέμπει πρὸς τὸν Κῦρον εἰπὼν ὃς ἦν. ὁ δὲ Κῦρος εὐθὺς ἄγειν κελεύει αὐτὸν πρὸς τὴν γυναῖκα. ὡς δ' εἰδέτην ἀλλήλους ἡ γυνὴ καὶ ὁ Ἀβραδάτας, ἠσπάζοντο ἀλλήλους. ἐκ τούτου δὴ λέγει ἡ Πάνθεια τοῦ Κύρου τὴν ὁσιότητα καὶ τὴν σωφροσύνην. ὁ δὲ Ἀβραδάτας ἀκούσας εἶπε, "τί ἂν οὖν ἐγὼ ποιῶν χάριν Κύρῳ ὑπέρ τε σοῦ καὶ ἐμαυτοῦ ἀποδοίην;" "τί δ' ἄλλο," ἔφη ἡ Πάνθεια, "ἢ πειρώμενος ὅμοιος εἶναι περὶ ἐκεῖνον οἷόσπερ ἐκεῖνος περὶ σέ;"   (25)

(1) cipher-message.

2. Translate into Greek :—

    (1) Take care to be worthy of your freedom.

    (2) The doctor happened to be present when I hurt my foot.

    (3) He was so foolish that he chose war instead of peace.

    (4) I ran home lest the dog might bite me.

    (5) No citizen ought to do harm to the State.

    (6) If we conquer these barbarians, we shall be safe.

    (7) Whenever I see a lion, I am much frightened.   (21)

3. (a) Give the first person singular of the aorist indicative active of βάλλω, ἀφίημι, φυλάττω, ἀμύνω, φαίνω, ἐπαινῶ, φεύγω, θαυμάζω.

   (b) Give the accusative singular and genitive plural of πατήρ, σκιά, νεώς, ἱππεύς, δάκρυ.   (9)

GREEK

Higher Grade—(First Paper)

Friday, 19th 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. *When the Ambraciot herald enters the enemies' line, he is unaware that a second Ambraciot army has also been destroyed.*

Καὶ αὐτοῖς τῇ ὑστεραίᾳ ἦλθε κῆρυξ ἀπὸ τῶν καταφυγόντων ἐκ τῆς Ὄλπης Ἀμπρακιωτῶν, ἀναίρεσιν αἰτήσων τῶν νεκρῶν. ἰδὼν δὲ τὰ ὅπλα τῶν ἀπὸ τῆς πόλεως Ἀμπρακιωτῶν ἐθαύμαζε τὸ πλῆθος· οὐ γὰρ ᾔδει τὸ πάθος, ἀλλ' ᾤετο τῶν μετὰ σφῶν εἶναι. καί τις αὐτὸν ἤρετο ὅ τι θαυμάζοι καὶ ὁπόσοι αὐτῶν τεθνᾶσιν, οἰόμενος εἶναι τὸν κήρυκα ἀπὸ τῶν ἐν Ἰδομεναῖς. ὁ δ' ἔφη διακοσίους μάλιστα. ὑπολαβὼν δ' ὁ ἐρωτῶν εἶπεν, ''οὔκουν τὰ ὅπλα ταυτὶ φαίνεται διακοσίων, ἀλλὰ πλέον ἢ χιλίων.'' αὖθις δὲ εἶπεν ἐκεῖνος, ''οὐκ ἄρα τῶν μεθ' ἡμῶν μαχομένων ἐστίν.'' ὁ δ' ἀπεκρίνατο, ''εἴπερ γε ὑμεῖς ἐν Ἰδομενῇ χθὲς ἐμάχεσθε.'' ''ἀλλ' ἡμεῖς γε οὐδενὶ ἐμαχόμεθα χθές, ἀλλὰ πρῴην ἐν τῇ ἀποχωρήσει.'' ''καὶ μὲν δὴ τούτοις γε ἡμεῖς χθὲς ἀπὸ τῆς πόλεως βοηθήσασι τῆς Ἀμπρακιωτῶν ἐμαχόμεθα.'' ὁ δὲ κῆρυξ ὡς ἤκουσε καὶ ἔγνω ὅτι ἡ ἀπὸ τῆς πόλεως βοήθεια διέφθαρται, ἀνοιμώξας καὶ ἐκπλαγεὶς τῷ μεγέθει τῶν παρόντων κακῶν ἀπῆλθεν εὐθὺς ἄπρακτος, καὶ οὐκέτι ἀπῄτει τοὺς νεκρούς.   (30)

2. *Conon has been rewarded and honoured by other states for his services. Will Athens, to which he rendered a service even greater than did Themistocles, treat him unjustly ?*

Οὐ τοίνυν μόνων ὑφ' ὑμῶν ὁ Κόνων, ὦ ἄνδρες Ἀθηναῖοι, τότ' ἐτιμήθη, ἀλλὰ καὶ ὑπ' ἄλλων πολλῶν, οἳ δικαίως ὧν εὐεργέτηντο χάριν δεῖν ᾤοντ' ἀποδιδόναι. καὶ πολλὰ μέν ἐστι τῶν ὑπ' ἐκείνου πραχθέντων ἄξι' ἐπαίνου, δι' ἃ πάντα προσήκει μὴ λύειν τὰς ἐπὶ τούτοις δοθείσας δωρειάς, κάλλιστον δὲ πάντων ἡ τῶν τειχῶν ἀνάστασις. γνοίη δ' ἄν τις εἰ παραθείη⁽¹⁾ πῶς Θεμιστοκλῆς, ὁ τῶν καθ' ἑαυτὸν ἁπάντων ἀνδρῶν ἐνδοξότατος, ταὐτὸ τοῦτ' ἐποίησεν. λέγεται τοίνυν ἐκεῖνος τειχίζειν εἰπὼν τοῖς πολίταις, καὶ ἐὰν ἀφίκηταί τις ἐκ Λακεδαίμονος, κατέχειν κελεύσας, οἴχεσθαι πρεσβεύων αὐτὸς ὡς τοὺς Λακεδαιμονίους. λόγων δὲ γιγνομένων καί τινων ἀπαγγελλόντων ὡς Ἀθηναῖοι τειχίζουσι, ἀρνεῖσθαι καὶ πρέσβεις πέμπειν σκεψομένους κελεύειν, ἐπειδὴ δ' οὐχ ἧκον οὗτοι, πέμπειν ἑτέρους παραινεῖν. καὶ πάντες ἴσως ἀκηκόαθ' ὃν τρόπον ἐξαπατῆσαι λέγεται. φημὶ τοίνυν ἐγώ, ὅσῳ τὸ φανερῶς τοῦ λάθρᾳ κρεῖττον, τοσούτῳ κάλλιον Κόνωνα τὰ τείχη στῆσαι Θεμιστοκλέους· ὁ μὲν γὰρ λαθών, ὁ δὲ νικήσας τοὺς κωλύσοντας αὔτ' ἐποίησεν. οὐ τοίνυν ἄξιον τὸν τοιοῦτον ὑφ' ὑμῶν ἀδικηθῆναι.

⁽¹⁾παρατίθημι = compare, contrast.   (35)

3. **Either** (*a*) **or** (*b*)—

(*a*) *After a long absence Polynices returns to his native city, stealthily and in fear of his brother, the king.*

> μῆτερ, φρονῶν εὖ κοὐ φρονῶν ἀφικόμην
> ἐχθροὺς ἐς ἄνδρας· ἀλλ' ἀναγκαίως ἔχει
> πατρίδος ἐρᾶν ἅπαντας· ὃς δ' ἄλλως λέγει,
> λόγοισι χαίρει τὸν δὲ νοῦν ἐκεῖσ' ἔχει.
> οὕτω δ' ἐτάρβουν ἐς φόβον τ' ἀφικόμην,
> μή τις δόλος με πρὸς κασιγνήτου κτάνῃ,
> ὥστε, ξιφήρη χεῖρ' ἔχων, δι' ἄστεως

κυκλῶν πρόσωπον[1] ἦλθον. ἐν δέ μ᾿ ὠφελεῖ,
σπονδαί τε καὶ σὴ πίστις, ἥ μ᾿ ἐσήγαγε
τείχη πατρῷα· πολύδακρυς δ᾿ ἀφικόμην,
χρόνιος ἰδὼν μέλαθρα καὶ βωμοὺς θεῶν
γυμνάσιά θ᾿ οἷσιν ἐνετράφην Δίρκης θ᾿ ὕδωρ·
ὧν οὐ δικαίως ἀπελαθεὶς ξένην πόλιν
ναίω, δι᾿ ὄσσων νᾶμ᾿[2] ἔχων δακρύρροον.
ἀλλ᾿ ἐκ γὰρ ἄλγους ἄλγος αὖ σὲ δέρκομαι
ἔχουσαν, οἴμοι τῶν ἐμῶν ἐγὼ κακῶν.

[1] πρόσωπον κυκλῶ = I look about me.
[2] νᾶμα = stream.

Scan the lines beginning τείχη and γυμνάσια, marking the caesura in each. **(30)**

(b) *The grief of Achilles on hearing of the death of Patroclus*.

Ἦος ὁ ταῦθ᾿ ὥρμαινε κατὰ φρένα καὶ κατὰ θυμόν,
τόφρα οἱ ἐγγύθεν ἦλθεν ἀγαυοῦ Νέστορος υἱός,
δάκρυα θερμὰ χέων, φάτο δ᾿ ἀγγελίην ἀλεγεινήν·
" ὤ μοι, Πηλέος υἱὲ δαΐφρονος, ἦ μάλα λυγρῆς
πεύσεαι ἀγγελίης, ἣ μὴ ὤφελλε γενέσθαι.
κεῖται Πάτροκλος, νέκυος δὲ δὴ ἀμφιμάχονται
γυμνοῦ· ἀτὰρ τά γε τεύχε᾿ ἔχει κορυθαίολος Ἕκτωρ."
ὣς φάτο, τὸν δ᾿ ἄχεος νεφέλη ἐκάλυψε μέλαινα·
ἀμφοτέρῃσι δὲ χερσὶν ἑλὼν κόνιν αἰθαλόεσσαν[1]
χεύατο κὰκ κεφαλῆς, χαρίεν δ᾿ ἤσχυνε πρόσωπον·
αὐτὸς δ᾿ ἐν κονίῃσι μέγας μεγαλωστὶ τανυσθεὶς
κεῖτο, φίλῃσι δὲ χερσὶ κόμην ἤσχυνε δαΐζων.
δμωαὶ δ᾿ ἃς Ἀχιλεὺς ληΐσσατο Πάτροκλός τε
θυμὸν ἀκηχέμεναι μεγάλ᾿ ἴαχον, ἐκ δὲ θύραζε
ἔδραμον ἀμφ᾿ Ἀχιλῆα δαΐφρονα, χερσὶ δὲ πᾶσαι
στήθεα πεπλήγοντο, λύθεν δ᾿ ὑπὸ γυῖα ἑκάστης.

[1] αἰθαλόεις = black.

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

GREEK

HIGHER GRADE—(SECOND PAPER)

Friday, 19th 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 :—

Having landed from the ship the King sent for Demaratus and addressed him thus : " You are a Greek and, as you yourself and other Greeks who have conversed with me say, of a city neither the least nor the weakest. Now, therefore, tell me whether the Greeks will venture to fight against me, for, as I think, if all the Greeks and all the rest of mankind tried to resist me, I should still be able to overcome them. I am, however, desirous to know what you think about this." Demaratus answered thus : " Oh King, I shall speak not of all the Greeks, but of the Lacedaemonians alone. Do not ask me how many they are, for whether a thousand men or more or less take the field against you, they will certainly give you battle, even if all the other Greeks side with you. For they would rather die as free men than live enslaved by you." **(35)**

2. Translate into Greek :—
    (1) Do not speak evil of any one when you are conversing with your neighbours.
    (2) All his life he valued justice more highly than wealth and his own safety.
    (3) As the storm prevented us from arriving in time, I was not able to speak on my own behalf.
    (4) Asked when he had seen you, he denied that he knew you.
    (5) We shall not open the gates of the city until the enemy are in flight. **(14)**

3. (a) Give the nominative singular masculine of the aorist participle active of

γιγνώσκω, μεθίημι, πλέω, γαμῶ, ἐσθίω, κατέχω, κρίνω.

(b) Give the nominative singular masculine of the comparative, and of the superlative, of

εὔφρων, ὄψιος, ἐχθρός, κοῦφος, χαρίεις.

(6)

FRENCH

LOWER GRADE

Thursday, 18th 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 :—

Le Père Noël.

Ma mère me chantait une chanson la veille de Noël, et comme cela ne venait qu'une fois l'an, je ne me la rappelle pas. Ce que je me rappelle parfaitement, c'est la croyance absolue que j'avais à la descente par la cheminée du petit père Noël, bon vieillard à barbe blanche qui, à l'heure de minuit, viendrait déposer dans mon petit soulier un cadeau que j'y trouverais à mon réveil. Minuit ! cette heure mystérieuse que les enfants ne connaissent point, parce qu'il leur est toujours défendu de veiller si tard. Quels efforts incroyables je faisais pour ne pas m'endormir avant l'apparition du petit vieux ! J'avais à la fois grande envie et grand'peur de le voir, mais jamais je ne pouvais me tenir éveillée jusque-là, et le lendemain mon premier regard était pour mon soulier au bord de l'âtre. Quelle émotion me causait l'enveloppe de papier blanc ! car le père Noël était extrêmement propre, et ne manquait jamais d'empaqueter soigneusement son cadeau. Je courais, pieds nus, m'emparer de mon trésor. Ce n'était jamais un don bien magnifique,

car nous n'étions pas riches.   C'était un petit gâteau, une orange ou tout simplement une belle pomme rouge.   Mais cela me semblait si précieux que j'osais à peine le manger.

George Sand.   **(25)**

2. Translate into English :—

Le Retour dans la Patrie.

Lorsque j'arrivai en France sur un vaisseau qui venait des Indes, je me rappelle que les matelots, en vue de la patrie, devinrent incapables d'aucun travail.   Les uns la regardaient sans pouvoir en détourner les yeux : d'autres mettaient leurs beaux habits, comme s'ils avaient été au moment de descendre ; il y en avait qui parlaient tout seuls et d'autres qui pleuraient.   A mesure que nous approchions, leur trouble augmentait ; comme ils en étaient absents depuis plusieurs années, ils ne pouvaient se lasser d'admirer la verdure des collines, le feuillage des arbres, et même les rochers du rivage couverts d'algues[1] et de mousse, comme si tous ces objets leur eussent été nouveaux.   Les clochers des villages où ils étaient nés, qu'ils reconnaissaient au loin, et qu'ils nommaient les uns après les autres, les remplissaient de joie ; mais quand le vaisseau entra dans le port et qu'ils virent, sur les quais, leurs amis, leurs pères, leurs mères, leurs enfants, qui leur tendaient les bras en pleurant et qui les appelaient par leurs noms, il fut impossible d'en retenir un seul à bord.   Tous sautèrent à terre, et il fallut les remplacer par un autre équipage[2].

Bernardin de Saint-Pierre.   **(25)**

[1] algues = seaweed.
[2] équipage = crew.

3. Translate into French :—

The sun had set, and it was now dark ; and as Jack was very tired he lay down and fell asleep.   Next morning when he awoke he was surprised to find that the garden had changed.   There were no longer any flowers and the leaves were yellow.   The sky was dark and it was raining.   Soon one of the dwarfs[1] came and led Jack into another room, where the others were having breakfast.   After breakfast he gave Jack his torn coat and his needle and thread.   Then they all went off to the forest and left Jack in the house, where he worked all day.   **(20)**

[1] dwarf = le nain.

4. Translate into French :—

   (1) I hope you will be better when the holidays come.

   (2) Do you know when Shakespeare was born and in what country ?

   (3) Which of this author's books do you like best ?

   (4) If you come to see us to-morrow, you will meet many of your friends.

   (5) She will not be able to finish the story before going to bed.   **(10)**

FRENCH

Higher Grade—(First Paper)

Thursday, 18th 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. *A count's advice to a commoner about the use of titles.*

Jouflu.   Je me sens commun, gauche, mal élevé.

Le Comte.   Vous n'êtes pas du tout mal élevé.

Jouflu.   Pas mal élevé à proprement parler, si vous voulez.... mais je ne sais pas m'exprimer.... Je ne sais pas ce qui se fait ou ne se fait pas, et je n'ai personne pour me donner des conseils....

Le Comte.   Voulez-vous me permettre de vous en donner un ?

Jouflu.   Oh ! oui !.... Je vous en prie.

Le Comte.   Eh bien, ne m'appelez pas " Monsieur le Comte," ni moi ni personne.... Il ne faut jamais donner les titres en parlant.... sauf à un Prince ou à un Duc....

Jouflu. Ah !.... moi qui croyais que ça se faisait toujours !....

Le Comte. Ça se fait dans les romans écrits par des gens qui n'ont jamais vécu dans le monde.... mais pas dans la vie, du moins d'égal à égal....

Jouflu. Mais je ne suis pas votre égal....

Le Comte. Je vous demande pardon.... Je ne vous rappellerai pas que quatre-vingt-neuf[1] a fait tous les hommes égaux.... Je vous dirai simplement que je suis votre égal.... et réciproquement.... Si l'on vous entendait donner un titre en parlant à moi ou à n'importe qui, on en pourrait augurer que vous avez été domestique.... Dans le monde parvenu, il est possible qu'on aime à s'entendre donner son titre.... Les gens qui ont payé des titres très cher désirent en profiter et y tiennent en proportion de ce qu'ils leur ont coûté.... Mais, dans le vrai monde, on ne se soucie pas des titres authentiques auxquels on est accoutumé.   *Gyp.* (**25**)

[1] Short for 1789, the date of the French Revolution.

2.   *My father's room.*

J'avais huit ou neuf ans, l'âge où le cœur espère,
Et je partageais seul la chambre de mon père,
Vaste pièce où mon lit s'abritait dans un coin,
Tandis qu'il occupait l'autre bout, assez loin :
Et je dormais ainsi paisible sous sa garde.
Une nuit cependant que la lune blafarde
Dans les carreaux bleus envoyait sa clarté,
Un trouble sans motif me tenait agité ;
Je regardais mon père et sa face robuste ;
J'écoutais, admirant la vigueur de son buste,
Dans cette solitude où me laissait la nuit,
Descendre et remonter son souffle à petit bruit.
La lune au blanc rayon pâlissait son visage
Dont l'aspect grave et fort le jour me rendait sage.
Un infini désir me vint de m'approcher.
Je sautai de mon lit : pieds nus sur le plancher,
Mon cœur d'enfant heureux qu'on protège et caresse
Débordant tout à coup d'une vague tendresse,
Et sentant que j'avais là mon meilleur ami,
J'allai baiser le front de mon père endormi.
Et je pus reposer après dans ma couchette.

                    Charles de Pomairols. (**20**)

3.   *Love of Country.*

Il y a dans le cœur de l'homme un penchant instinctif qui n'est pas, à vrai dire, l'amour de la patrie, mais qui en est le germe : c'est le penchant qui nous porte à nous affectionner aux lieux où nous commençons de vivre. Dès que l'intelligence de l'enfant s'éveille, son œil se promène, avec une avidité qui révèle en lui la passion de connaître et d'aimer, sur toutes les choses qui l'environnent. C'est d'abord la chambre où sa mère veille près de son berceau qui est l'objet de ses affections. C'est ensuite la maison paternelle avec le parc ou le modeste enclos dont elle est entourée ; rien ne le ravit autant que les fleurs qu'il a vues naître sous ses premiers pas. Bientôt, c'est le vallon solitaire, ce sont les sentiers de montagne où il conduit les rêveries de ses jeunes années, heureuses ou malheureuses, qui, chaque jour, gravent dans les plus intimes replis de son cœur un souvenir et une image qui ne s'y effaceront jamais. Cette douce souvenance du foyer de nos premiers ans nous accompagne dans la vie comme un ange gardien, et, à l'heure du péril moral, elle nous est un puissant secours, en rendant plus présentes à notre esprit les leçons de sagesse et d'amour de Dieu que nous avons recueillies des lèvres d'une mère chérie.

Eugène Bernard. (**25**)

FRENCH

Higher Grade—(Second Paper)

Thursday, 18th 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 :—(,) 'virgule,' (.) 'un point,' (;) '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

A musical people.

Les‿habitants des villes et des campagnes, | les soldats et les laboureurs, | savent presque tous la musique ; | il m'est‿arrivé | d'entrer dans de pauvres maisons | noircies par la fumée de tabac, | et d'entendre tout‿à coup, | non seulement la maîtresse, | mais le maître du logis | improviser sur le piano. | L'on‿a soin, | presque partout, | que, les jours de marché, | il y ait des joueurs d'instruments‿à vent | sur le balcon de l'hôtel de ville | qui domine la place publique. | Les‿écoliers se promènent dans les rues, | le dimanche, | en chantant les psaumes‿en chœur. |

Les pauvres Bohêmes, | alors qu'ils voyagent, | suivis de leurs femmes et de leurs‿enfants, | portent sur leur dos | une mauvaise harpe, | d'un bois grossier, | dont‿ils tirent des sons‿harmonieux. | Ils‿en jouent quand‿ils se reposent | au pied d'un arbre, | sur les grands chemins, | ou lorsque, | auprès des maisons de poste, | ils tâchent d'intéresser les voyageurs | par le concert ambulant | de leur famille errante. |　　　　　　　　　　　　　**(10)**

FRENCH

HIGHER GRADE—(SECOND PAPER)

Thursday, 18th 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 :—

Cassim rose early the next morning and set out for the forest with ten asses bearing great sacks, which he hoped to fill. He soon reached the rock and found the place, by the signs of which his brother had spoken. When he saw the entrance of the cavern, he pronounced the words : " Open, Sesame."[1] The door immediately opened and, when he was in, closed behind him. On examining the cave, he was very pleased to find that Ali Baba had not lied in speaking of the riches it contained. He quickly picked up as many bags of gold as he could carry and then laid them at the door of the cavern ; but he was thinking so much about the great wealth he would possess, that he could not remember the word he had to say to make it open, and although he named several kinds of grain, the door remained shut. Cassim had not expected this, and was very alarmed ; he did his best to recall the word, but he found that he had completely forgotten it. Then he threw down the gold he had gathered and walked up and down, without paying the least attention to the riches that were around him. **(40)**

[1] Sesame = Sésame.

2. Translate into French :—

   (1) I think that the surroundings of Paris are finer than those of London. Don't you ?
   (2) I would rather stay at home than go round the world.
   (3) She was sitting by the fireside when she heard the bell ring.
   (4) He works hard in the garden all day and reads in the evening.
   (5) How long had you known him when you made my acquaintance ? **(10)**

3. Write, in French, a continuous story, based on the following summary. **The story should be about the same length as your answer to question 1.** Failure to comply with this instruction may lead to a loss of marks.

Un Cambriolage.[1]

Un château—nuit—tout le monde dort—trois cambrioleurs—fenêtre ouverte—le salon—la salle à manger—repas nocturne—butin—départ—lendemain matin—découverte—désespoir de M. le Marquis.   **(20)**

(Complete the story in your own way.)

[1] A burglary.

GERMAN

Lower Grade

Tuesday, 23rd March—9.30 a.m. to 12 noon

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

N.B.—(1) 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. (2) German script must be used in the answer to question 4 ; in question 3 the use of it is optional.

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

Travelling Abroad.

Nachdem ich zwei Influenzaanfälle überstanden hatte, erwachte in mir mit aller Macht die alte germanische Sehnsucht nach dem sonnigen Süden, dem ewig blauen Himmel Italiens.—

Es ist ein beseligendes Gefühl, bestimmt zu wissen, daß man im richtigen Zuge und im richtigen Waggon sitzt. Amsterdam – Ventimiglia stand auf dem Schild, welches draußen am Waggon angebracht war. Das war eine Not

gewesen, bis ich endlich so weit war.　　Erst die nervöse Fragerei bei dem ganzen Bahnhofspersonal, auf welchem Bahnsteig der Zug einliefe, ob ich bis Como, meinem vorläufigen Reiseziel, auch sicher sitzen bleiben könne, ob der direkte Wagen nach Italien vorne oder hinten im Zuge sei, ob der Zug voraussichtlich sehr voll sein würde, ob Verspätung gemeldet sei, ob er schon Einfahrt habe.　　Dann die Angst, der Gepäckträger würde mit meinem Handgepäck nicht rechtzeitig am Zuge sein oder mich nicht finden.　　Es war eine entsetzliche Hetze.

In fünf Minuten läuft der Zug ein.　　Wo der Gepäckträger nur bleibt!　　Angstvoll schaute ich mich um. Er hatte aber schon lange mein Gepäck im richtigen Wagen untergebracht und einen Platz belegt.　　Ich fand ihn, als ich schon ganz verzweifelt jede Hoffnung aufgegeben hatte. Ich zahlte ihm vor Freude dreißig Pfennig zu viel.

Wie brannte mein Herz in mir, als mir nach aller Hetze zum Bewußtsein kam, daß ich morgen unter italienischem Himmel wandeln würde, daß ich dem Lande meiner Träume von Minute zu Minute näher kam, dem Lande, „wo die Zitronen blühn, im dunkeln Laub die Gold=Orangen glühn!"

(25)

2. Translate into English :—

Song at Eventide.

Ich stand auf Berges Halde[(1)]
Als heim die Sonne ging,
Und sah, wie überm Walde
Des Abends Goldnetz hing.

Des Himmels Wolken tauten
Der Erde Frieden zu,
Bei Abendglockenlauten
Ging die Natur zur Ruh.

Ich sprach: „O Herz, empfinde
Der Schöpfung Stille nun
Und schick' mit jedem Kinde
Der Flur[(2)] dich auch zu ruhn."

[(1)] = hillside or mountain slope.
[(2)] = field.

Die Blumen alle schließen
Die Augen allgemach,
Und alle Wellen fließen
Besänftiget im Bach.

Es ward dem goldnen Käfer[1]
Zur Wieg' ein Rosenblatt,
Die Herde mit dem Schäfer
Sucht ihre Lagerstatt.

Die Lerche sucht aus Lüften
Ihr feuchtes Nest im Klee,
Und in des Waldes Schlüften
Ihr Lager Hirsch und Reh.

Wer sein ein Hüttchen nennet,
Ruht nun darin sich aus,
Und wen die Fremde trennet,
Den trägt ein Traum nach Haus.

Mich fasset ein Verlangen,
Daß ich zu dieser Frist[2]
Hinauf nicht kann gelangen,
Wo meine Heimat ist.

[1] = beetle.
[2] = zu dieser Zeit.

(25)

3. Translate into German :—

   (1) He is supposed to be already in Germany, but I have not received a letter from him.

   (2) At what time is dinner ? In half an hour if that suits you.

   (3) Ask him to come home immediately as it is much too late.

   (4) To-day week they are going to the sea-side to spend a month there.

   (5) When you have read this book please tell me if you like it.

(15)

4. Translate into German :—

It has been very cold during the last few days and now it is beginning to snow. My little cousin who has just come to us on a visit is delighted, for he has never seen snow before. Since breakfast he has been standing at the window and hopes that there will soon be enough of it to make a snowman. My father, of course, looks less pleased. We live in the country and he has a long journey to town every morning, so he knows how disagreeable a heavy snowstorm can be.   **(15)**

GERMAN

HIGHER GRADE—(FIRST PAPER)

Tuesday, 23rd 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.   *Spring-cleaning !*

Alljährlich im Frühjahr bekam Frau Bender, wie jede echte gute deutsche Hausfrau, ihr Fieber : das Hausputzfieber. Die sonst wirklich ziemlich gütige Frau war während dieser Zeit nicht wiederzuerkennen, sie war wie umgewandelt, grausam und brutal. In banger Erwartung sah Herr Bender alljährlich dem Nahen des Frühlings entgegen. Wie ein Damoklesschwert hing der Gedanke an den großen Hausputz über seiner Seele. Der arme Mensch wurde von Tag zu Tag sichtlich unruhiger ; er irrte durch die Wohnung. Keine Pfeife wollte ihm mehr schmecken. Jedes Jahr, mit

dem ersten abgehängten Bilde und den leeren, gardinenlosen Fenstern, hielt der Schrecken des Hausputzes seinen Einzug in sein friedliches Heim. Heuer sah er mit ganz besonders gemischten Gefühlen dem drohenden Ereignis entgegen. Frau Bender hatte so ganz nebenbei verlauten lassen, daß sie dieses Mal eine besonders eingehende und gründliche Reinigung vorzunehmen gedächte. So alle paar Jahre wäre das dringend nötig. Da war ja Entsetzliches zu erwarten. Und eines Tages war es dann losgegangen. Herr Bender hatte nach dem Frühstück harmlos im Wohnzimmer gesessen und die Zeitung gelesen, als plötzlich seine Frau, gefolgt von drei bis an die Zähne mit Eimern, Besen, Putztüchern und sonstigen seltsamen Geräten bewaffneten, ihm gänzlich unbekannten, gar nicht sehr liebreizend aussehenden weiblichen Wesen entschlossen und mit schweren Schritten in das Zimmer trat. Die Begeisterung der Krieger, die unter dem Einfluß einer großen, göttlichen Idee in die Schlacht ziehen, lag auf ihren Stirnen. (25)

2.   *A Thunder Storm in the Country.*

Die Scheiben schnell ein Feuer leckt.
Der Donner mich vom Bette schreckt.

Das Dorf sich in die Bäume duckt
vorm Blitz, der durch den Himmel zuckt.

Die Felder wogen geisterhell.
Fernwo ein angstvoll Hundgebell.

Das Nachbarhaus nun auch erwacht.
Die Fenster grüßen durch die Nacht.

Vom Turm die Wetterglocke tönt.
Das Vieh im Stall nach Menschen stöhnt.

Der Wind im vollen Laube braust.
Der Regen auf die Schindel[(1)] saust.

Vom Ofen scheu der Altknecht rückt.
Die Mutter sich vorm Kreuze bückt.

(1) die Schindel = shingle, wooden tile.

Der Regen durch das Fenster sickt.[1]
Die Kleinmagd jäh vorm Blitz erschrickt.

Der Donner rollt. Der Blitz verglüht.
Ein Sternlein schon aus Wolken blüht.

Der Herr hat heute uns bewacht.
Geht schlafen, Leute, gute Nacht!

Die Wiesen ruhen regensatt.
Im Birnbaum schimmert Blatt an Blatt.

Voller sich die Früchte ründen.
Stern um Stern sich heiß entzünden.

Quellen in den Brunnen münden.
Hähne goldnen Morgen künden.

     [1] sicken (sickern) = to trickle, drip.   **(25)**

3.   *Nature's Workshop.*

Ein kleines Stückchen Wiese, über das der Wanderer achtlos schreitet, gewährt einen eindrucksvollen Blick in die Werkstatt der Natur. Auch diese kleinste Welt spiegelt die gleichen Gesetze wie das Leben des Menschen. Freilich muß man die Augen dafür mitbringen, muß sich vielleicht auch ein wenig Mühe geben, um in der Vielfältigkeit das einzelne zu erkennen. Denn wir betrachten ja alle Dinge, und sei es auch ein Stück grünende und blühende Erde, zunächst immer nach unserer Gewohnheit und unserem Bedürfnis. Ein Landwirt denkt, obwohl er für die Farben= und Blumenpracht sicherlich nicht blind ist, an eine Wiese zunächst mit dem Gedanken, ob sie dem Vieh gutes und reichliches Futter bietet. Für den Naturforscher ist sie eine Fundgrube immer neuer Entdeckungen. Wer von uns an einem Feiertag durch blühende Wiesen wandert, wird zu allererst wahrscheinlich die e i n e Verlockung fühlen: sich hineinzuwerfen in dieses weiche, frische, üppige Bett. Wenn wir uns diesen Wunsch erfüllen dürfen, werden wir zahllose Schönheiten entdecken, die wir nicht vermutet hätten.

     (20)

GERMAN

HIGHER GRADE—(SECOND PAPER)

Tuesday, 23rd 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 German Paper is distributed.

DIRECTIONS FOR TEACHER.

1. *Inform the candidates—*
   (*a*) *That they may use either English or German script, as they prefer; and*
   (*b*) *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—(,) ' Komma ', (!) ' 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

A Music Teacher on Holiday.

Das ganze Jahr | saß er bei seinen Büchern, | beim Klavier | oder gab Unterricht in seiner Musikschule. | Das teilte seinen Tag, | seine Wochen, | sein Leben | so dicht und wohlberechnet ein | in eng zusammengerücktes Gedränge | von

Pflichten und Liebhabereien, | daß ihm kaum | für einen
freien Atemzug, | für Bewegung in frischer Luft, | nach der
er so oft sich sehnte, | ein Augenblick übrigblieb. | Er erschien
sich oft | wie ein Gefangener, | der seine Zelle nicht verlassen
durfte. | Er liebte ja seine Arbeit, | sein Ringen nach eigener
Vervollkommnung | und seine Schüler! | Aber um so
hungriger | nützte er seine kurzen Ferien. | Er dehnte seine
Lungen | bei jedem Schritt | und spannte die erlösten Muskeln |
in unersättlicher Betätigungslust | wie ein freigelassener Sklave.

(10)

GERMAN

HIGHER GRADE—(SECOND PAPER)

Tuesday, 23rd 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. 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 :—

The doctor said : "Madam, it is necessary that you
should take this child to the country. He is very weak,
and if you do not do so at once I can not answer for the
consequences." We asked the advice of an American
friend of ours, who happened to be in the neighbourhood.
He recommended my mother to try X, a delightful old
village on the edge of a forest and distant some seventy
miles from Vienna. He praised the comfortable old inn,
described its quiet garden running down to the river and
spoke of his own ardent desire to return to this charming
and peaceful district, which was as yet unspoilt. But— !
The young man hesitated and looked embarrassed.
A feeling of uneasiness passed through us. Had he indicated

this paradise only to snatch it away again? He then explained that the old inn was frequented all summer by a number of artists, who might object to the presence of— of a lady with children. My mother, however, decided to take the risk, so we went to X and spent there the happiest part of my childhood.   **(35)**

2. (*a*) Translate into German :—

    (1) On hearing this strange story they could not help laughing.

    (2) I doubt if he is capable of doing this correctly.

    (3) They are too proud to accept advice, however good it may be.

  (*b*) Translate into English :—

    (1) Rundfunkwetterbericht : schwül—leichte Niederschläge —Gewitter nicht ausgeschlossen—später aufheiternd.

    (2) Es wird ausdrücklich darauf aufmerksam gemacht, daß diese Reichsmarkbeträge nur für den Reiseverkehr verwendet werden dürfen.   **(10)**

3. Write in German a continuous story based on the following summary. **The story should be about the same length as your answer to question 1.** Failure to comply with this instruction may lead to a loss of marks :—

Foreign musician* visiting Britain—several concerts in London—engagement to play in provincial town—on way there realises instructions lost—time and place of concert forgotten.

(Expand the summary, describe journey, arrival, attempts to obtain necessary information and conclude narrative as you think fit.)   **(25)**

* musician = der Musiker.

GAELIC

Lower Grade

Tuesday, 23rd 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 and for bad spelling.

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

Tha na geoidh-ghlasa a' tighinn a nall an uair a tha na caoil agus na h-òbain an ceann tuath na Roinn Eòrpa air an comhdach thairis le eigh.

Tha iomadh sealladh éibhinn r'a fhaicinn an uair a tha neach a' siubhal a' mhonaidh, ach chan 'eil a h-aon diubh as faide air am bi cuimhne aig balach na bhios aige air a' cheud uair a chunnaic e na h-eoin fhiadhaich so air an turus adhair, a' dol gu deas anns an fhoghar, no gu tuath anns an earrach. Cluinnear gànraich neònach gu h-àrd anns an speur, agus air dhuit amharc suas, bidh tu greis mun amais thu air an dearbh àite as a bheil an fhuaim a' tighinn. An tiota chì thu ealta de na h-eoin so a' siubhal air iteig le dian luathas aig a leithid de àirde os do chionn is gur gann is léir dhuit iad.

Tha an sgaoth mar as trice ag gluasad gu rianail 'na dà shreath, is fear de na h-eoin air thoiseach, mar gum biodh fear-iùil. Shamhlaicheadh tu iad ri loingeas cogaidh a' dol air adhart an ordugh catha. Ré an t-samhraidh tha iad a' tuineachadh fada gu tuath eadar Lochlann agus Eilean Hirt, agus anns a' gheamhradh tha iad ag imrich gu deas, gu taobh deas Shasuinn, no gu Creig Ealasaid. Tha iad ro dhéidheil air an àite mu dheireadh, agus bidh sgaothan móra dhiubh 'ga thathaich.

Aonghas Mac Eanruig. **(20)**

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

> Chan 'eil neach o thrioblaid saor
> a measg a' chinne daonn' air fad ;
> 's comh-lìonmhor osnadh aig an rìgh
> is aig an neach as ìsle staid.

> Tha a smùdan féin os ceann gach fòid,
> is dòrainn ceangailt' ris gach math ;
> tha an ròs a' fàs air drisean geur,
> 's an taic a chéil' tha a' mhil 's an gath.

> Ged fhaic thu neach an saoibhreas mór,
> na meas a shòlas bhi thar chàich ;
> an tobar 's glaine chì do shùil,
> tha a' ghrùid 'na ìochdar gabhail tàimh.

> 'S ma chuireas t'anail e 'na ghluais,
> le tarruing chabhaig suas ad bheul,
> dùisgidh an ruadhan dearg a nìos,
> 's le gainimh lìonaidh e do dheud.

> 'S ged fhaic thu neach an inbhe àird,
> tha e-mar nead am bàrr na craoibh' ;
> gach stoirm a' bagradh thilgeadh nuas,
> is e air luasgadh leis gach gaoith.

(20)

3. Translate into Gaelic, paying careful attention to idiom :—

A Snowstorm.

One day I went for a walk in the country. I was walking down the road when I met my chum. She said that she would like to come with me, and I said I should be glad to have her. So we walked away together.

We were tramping through a large field when all of a sudden a snowstorm began. My chum and I could not see the way out of the field. We trudged on and on until we were completely lost. At last we saw the lights of a house and stumbled on until we came to it. I knocked at the door. An old lady answered the knock. We explained to her that we were lost. She took us in and gave us a cup of hot tea and a cake each. We warmed our hands at the fire. A few hours later we left the house, thanking the woman for what she had done for us. (20)

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 the same length as your answer to question 1.** Failure to comply with this instruction may lead to a loss of marks.

One morning as Donald was looking out of his bedroom window he saw in his neighbour's garden a great number of fine red apples which had fallen from the trees. He went down as fast as he could—looked cautiously around—entered garden through opening in the wall—filled pockets with apples—was about to go away when he saw owner of the garden approaching with a stick in his hand.

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

GAELIC

HIGHER GRADE—(FIRST PAPER)

Tuesday, 23rd 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 and for bad spelling.

1. Translate into idiomatic English :—

Bha na sean Ghàidheil a' feuchainn a' chuid a b'fheàrr a b'urrainn iad a dhèanamh de'n dà shaoghal, agus ma bha iad an tòir air sgòd de'n bhrat dhìomhair, a tha a' folachadh na bheil air an taobh eile, a thogail 'nan dòigh féin, ciod è bha ann ach a' cheart mhiann a tha a' greimeachadh air inntinnean dhaoine an diugh air mhodh eile ? An uair a bheirear fa-near cor a' Ghàidheil 'san t-sean aimsir, an dìomhaireachd a bha e a' faireachadh 'ga chuartachadh, agus na nithean a bha e a' meas mar mhìorbhuilean, chan 'eil e 'na iongantas ged dhùisgeadh miann 'na chridhe mu

mheadhon fuasglaidh. Bha na cnuic, na creagan, an saoghal nàdurra uile, 'na bheachd, bith-bhuan. Bha e féin diombuan, bha na bha air thoiseach fo bhuaidh reachd cruaidh air nach 'eil fiaradh. Air an aobhar sin bha a inntinn buailteach air greim a dhèanamh air sgàil air chor-eigin 'san dorchadas,— rud-eigin a shaoileadh e a bhiodh mar chomharradh air nithean neo-fhaicsinneach a chaidh a chleith o thùs leis an Dàn. An iochdar cridhe gach aoin againn, tha nàdur de chiocras dìomhair ag iarraidh fios fhaotainn o shaoghal nan spiorad, agus ma dh'fheuch an Gàidheal air an dìomhaireachd a tholladh air a dhòigh féin, ciod è bha ann ach rud a tha a chomh-chreutairean air feadh na cruinne a' dèanamh fhathast ?

<div align="right">

D. MacPhee.   **(25)**

</div>

2. Translate into idiomatic English :—

> Is i do làmh nach robh tuisleach
> Dhol a chaitheamh a' chuspair
> Le do bhogha cruaidh ruiteach deagh-neoil.
>
> Glac throm air do shliasaid
> An déidh a snaidheadh gun fhiaradh,
> Is bàrr dosrach de sgiathaibh an eoin.
>
> Bhiodh céir ris na crannaibh
> Bu neo-éisleanach tarruing,
> An uair a leumadh an taifeid o d' mheoir.
>
> An uair a leigte o d' làimh i,
> Cha bhiodh òirleach gun bhàthadh
> Eadar corran a gàinne is an smeoirn.
>
> Ceud soraidh le dùrachd
> Uaim gu leannan an t-sùgraidh :
> Gum b'e m'aighear 's mo rùn bhith 'nad chòir.
>
> Bha thu measail aig uaislean,
> Is cha robh beagan mar chruas ort :
> Sud an cleachdadh a fhuair thu is tu òg.
>
> Gum biodh farum air thàilisg
> Agus fuaim air a' chlàrsaich,
> Mar a bhuineadh do shàr mhac MhicLeoid.
>
> Gur h-è bu eachdraidh 'na dhéidh sin
> Greis air uirsgeil na Féinne,
> Is air chuideachda chéirghil nan cròc.

<div align="right">

Màiri Nighean Alasdair Ruaidh.   **(25)**

</div>

3. Turn carefully into Scottish Gaelic, *or* translate into English :—

Is beag fós nach ionann dál don duine agus don mhéirleach dhamanta bhíos cuibhrighthe ag triall ón phríosún gus an gcroich. Óir amhail bhíos an méirleach damanta ag triall ón phríosún gus an gcroich, agus é cuibhrighthe, is mar sin bhíos an duine ag teacht as an phríosún .i. broinn a mháthar, agus é cuibhrighthe i bpeacadh an tsinnsir, damanta ré fagháil an bháis chorpardha tré choir Ádhaimh, ag triall gus an gcroich .i. gus an mbás. Agus meas féin, a dhuine, amhail nach bí lúthgháir ar an méirleach úd ag triall gus an gcroich, agus nach bí seagh ná suim i séadaibh saoghalta ná i maoin ná i maitheas ar bioth dá bhfágbhann tar 'éis aige, mar an gcéadna dhlighir-se do dhéanamh, a dhuine, do bhríógh gurab ionann bhar ndál. Agus cibé adéaradh nach indéanta an coimmeas soin, do bhríogh go mbí bás an mhéirligh go grod agus go bhfaghann an duine ré fhada, biodh a fhios aige nach obainne bás na croiche ar uairibh ioná an bás nádúrtha.

Geoffrey Keating (The Three Shafts of Death). **(15)**

GAELIC

HIGHER GRADE—(SECOND PAPER)

Tuesday, 23rd 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 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

Am móran de na blàir | gheibhear freumhan | agus croinn dharaich, | bheithe agus ghiuthais, | nì tha a' dearbhadh | gun robh coilltichean dosrach, | a tha an diugh | air am falach leis a' mhòine, | ag comhdach na dùthcha. | Tha móran de na sean chraobhan so | fhathast ag giùlan comharraidhean | na doininn uamhasaich | a sgath iad gu làr | mar sgathas corran feur, | agus tha cuid diubh | a' nochdadh gu soilleir | obair-làimhe ar seann sinnsre. | Chuireadh na craobhan | a chaidh a leagail leis na stoirmean | stad air ruith an uisge, | air dhòigh is gun tigeadh | làrach na coilltich | gu bhi 'na bhoglaich. | An sin chinneadh na lusan sònraichte | de a bheil stuth na mòintich | air a dhèanamh, | agus bhiodh duilleach seargta nan craobh | 'gan cuideachadh gu fàs.

Daibhidh Urchadan. (10)

GAELIC

Higher Grade—(Second Paper)

Tuesday, 23rd 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 and for bad spelling.

SECTION I

All the questions in this Section should be attempted.

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

   (*a*) " B'e sin an sealladh éibhinn
       Bhi ag imeachd air na sléibhtean,
       'N uair bhiodh a' ghrian ag éirigh,
           'S a bhiodh na féidh a' langanaich."

   (*b*) Oigridh na Gàidhealtachd.

   (*c*) The place of music in Highland life, past and present.

   (*d*) Rain.　　　　　　　　　　　　　　　　　　　**(30)**

2. Translate into Gaelic :—

   Locksley returned almost instantly with a willow wand about six feet in length, perfectly straight, and rather thicker than a man's thumb.　He began to peel this with great composure, observing at the same time that to ask a good woodsman to shoot at a target so broad as had hitherto been used was to put shame on his skill.　" For his own part," he said, " and in the land where he was bred, men would as soon take for their mark King Arthur's round table, which held sixty knights around it.　A child of seven years old," he said, " might hit yonder target with a headless shaft ; but," added he, walking deliberately to the other end of the lists, and sticking the willow wand upright in the ground, " he that hits that rod at five score yards, I call him an archer fit to bear both bow and quiver before a king, an it were the stout King Richard himself."　" My grandsire," said Hubert, " drew a good bow at the battle of Hastings, and never shot at such a mark in his life— and neither will I."

   Sir Walter Scott (*Ivanhoe*).　　　　　**(25)**

3. Translate into Gaelic :—

   (*a*) Hector would not have gone to the town, were it not that his sister-in-law was ill.

   (*b*) Most Gaelic speakers, even though untaught, use their native language with admirable accuracy.

   (*c*) We must contrive new terms for new inventions, such as the telephone and the motor car.　　**(6)**

SECTION II

Two *questions should be attempted from this Section. The answers may be either in Gaelic or in English, except when otherwise indicated.*

4. Mention any Gaelic poems you know which are composed upon or addressed to animals. Name the authors and give an account of *one* of the poems. (7)

5. What do you know of the foundation of the Celtic Church in Iona and the consequences thereof ? (7)

6. Locate the following, giving in each case the anglicised equivalent :—Allt Éireann, Baile Chloichrigh, Fóghlais, Beinn Mhurluig, Pearraig, Abhainn Teimheil, Cinn a' Ghiùthsaich. (7)

7. Give a short account of a Gaelic poet or poetess connected with any *one* of the following :—Sutherland, Ross and Cromarty, the Isles. (7)

SPANISH

LOWER GRADE

Wednesday, 24th 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 :—

Perico the unruly.

No había en el Instituto un chico más travieso que *Perico el Bueno*. Era el tormento de los profesores y el terror de los porteros y bedeles. Parece que le estoy viendo, paseando con las manos en los bolsillos por los pórticos y arrojando miradas insolentes a los bedeles.

— Señor Baranda — le decía uno cortésmente —, tenga usted la bondad de marcharse : el señor Director va a pasar de un momento a otro.

— Dígale usted al señor Director que me espere aquí — respondía fieramente Perico.

El bedel se arrojaba sobre él ; le agarraba por el cuello para introducirle en la carbonera, que servía de calabozo. Perico se resistía ; venía el portero : entre los dos, al cabo de grandes esfuerzos, se lograba llevarle y dejarle allí encerrado.

Perico sufría horriblemente cada vez que se oía llamar *el Bueno*. Rechinaba los dientes, y si era algún chico de su edad quien le injuriaba de este modo, se arrojaba sobre él y le hinchaba las narices. Porque es de saber que Perico era bravo y, aunque no muy fuerte, prodigiosamente ágil y diestro en toda clase de ejercicios. Nadie le aventajaba en la carrera ni en el salto. Recuerdo que una tarde en que por instigación suya nos fuimos al campo en vez de asistir a clase, como nos habíamos alejado demasiado tuvimos miedo de no estar en casa al crepúsculo, como nuestros padres nos tenían prevenido. Nos hallábamos cerca del puente por donde cruzaba la vía férrea. Perico ve llegar el tren a toda marcha y, sin decirnos palabra, se encarama sobre el parapeto y se arroja sobre la plataforma de uno de los coches, logrando ganar sano y salvo la población en pocos minutos.

<div align="right">*Palacio Valdés.* **(30)**</div>

2. Translate into English :—

<div align="center">*Put not your trust in marvels.*</div>

Era año de calamidad para cierto pueblo de Castilla. La peste había destruido todos los frutos del campo. Reuniéronse las autoridades, y decidieron enviar a otro pueblo inmediato, en el cual se veneraba el cuerpo de un santo muy milagroso, según la tradición, pidiendo el favor de la sagrada reliquia y de algunas semillas de granos para la nueva cosecha. Hízose el pedido, que fue concedido en seguida. Al año siguiente pasaba el alcalde del segundo pueblo por el otro. Es de notar que contra todas las esperanzas, si bien la cosecha era abundante, el cielo no había querido terminar la plaga.

— ¿ Cómo ha ido por aquí ? — le preguntaba el uno al otro alcalde.

— Amigo, — le respondió el preguntado, con expresión doliente y afligida — la semilla ha sido asombrosa . . . pero . . . no quisiera decírselo a usted. . .

— Hombre, ¿ qué ?

— Nada : la semilla, como digo, asombrosa, pero el santo no dio resultado. *Larra.* **(20)**

3. Translate into Spanish :—

Once upon a time, when the world was new, there was a valley far away in the East where two rivers met. There were high mountains round this valley, so that the cold winds could not enter and the sun shone nearly every day. The people who lived there were very handsome ; unfortunately they were very quarrelsome and lazy as a result of getting all that they wanted without much effort. All except one family. Their name was Mr. and Mrs. Noah, and they had three children. Mr. Noah was very wise. One day, when he came home to supper, he was looking very sad, so sad that his wife asked him why. " It is going to rain," said Mr. Noah. " Bother ! " said his wife. " I shall have to buy a new umbrella." **(20)**

4. Translate into Spanish :—

(1) This house was built two hundred years ago.

(2) My elder brother has promised to take me to Spain with him.

(3) Children and old people need to be very careful when crossing the road.

(4) I have just spent a fortnight in the country. The weather was wretched.

(5) He walks five miles before breakfast every day.

(10)

SPANISH

HIGHER GRADE—(FIRST PAPER)

Wednesday, 24th 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 into English, with due attention to form and
    expression :—

1.   *A Spanish election, old style.*

Cada elección abría una brecha en la fortuna de la casa.
Don Ramón recibía el encargo de sacar triunfante a tal señor
desconocido, que apenas si pasaba un par de días en el
distrito. Era la voluntad de los que gobernaban allá en
Madrid. Se distribuían puñados de pesetas, se perdonaban
deudas, todo por cuenta de don Ramón ; y su mujer, que
guisaba la comida con tal parsimonia que apenas si dejaban
algo para los criados, era la más espléndida al llegar la
lucha, y poseída de fiebre belicosa, ayudaba a su marido a
echar la casa por la ventana.

Era esto un cálculo de su avaricia. El dinero esparcido
locamente era un préstamo que cobraría con interés en
un día determinado. Y acariciaba con sus ojos penetrantes
al pequeñín que tenía sobre sus rodillas, viendo en él al
privilegiado que recogería el resultado de todos sus sacrificios.

¡ Si no fuera por ellos, qué ocurriría en el distrito !
Triunfarían los descamisados, aquellos obreros que leían los
periódicos y predicaban la igualdad. Pero para evitar tal
cataclismo allí estaba su Ramón, el azote de los malos, el
campeón de la buena causa, que la defendía dirigiendo las
elecciones fusil en mano, y así como sabía enviar a la cárcel
a los que le molestaban con su rebeldía, lograba conservar
en la calle a los que con varias muertes en su historia se
prestaban a servir al gobierno.

                                Blasco Ibáñez.   **(25)**

2.   *The deceiver.*

Dijéronle a un caballero
la murmuración que había
de lo mucho que mentía,
y él dijo a un paje :—Yo quiero
    enmendarme ; a ti te encargo
que te estés siempre conmigo,
y si algunos cuentos digo,
cuando vieres que me alargo
    en lo que voy a decir,
tírame, estando allí junto,
de la capa al mismo punto,
y no me dejes mentir.
    Esperó el paje ocasión,
y su amo en la primera
de mentir, que en fin ya era
aquélla su inclinación,
    dijo :—En una casa mía
tengo sala de mil pasos
de largo, y no son escasos.
    —¿ Y cuántos de ancho tenía ?—
    preguntó luego un oyente.
Aquí el paje le tiró
de la capa y respondió :
— Seis pasos exactamente.
    Replicaron los demás :
— Pues ¿ cómo así lo trazaste,
que a sala tan larga echaste
seis pasos de ancho no más ?
    Y a los que le preguntaron
respondía él al pasar :
— Más le quisiera yo echar,
sino que no me dejaron.

                                    Herrera.   (20)

3.   *Sidelight on begging.*

Librada.   Hay que ver lo que valen esas dos criaturas
para pedir.

Justa.   Tengo oído que es una alhaja el menor.

Librada.   Como que no hay noche que no se retire con
sus tres pesetas cabales.   Le suelta usted en la calle, ve a
una señorita con su señorito, y ya le tiene usted agarrado a

los faldones diciéndole al caballero : "Señorito, una limosna, por la salud de la señorita, que es muy guapa." Hasta que le miran ; se echan a reír. El señorito dice : "¡Qué bribón!" La señorita : "¡Es muy mono!" Y no hay pareja que no le dé de veinte a treinta céntimos.

Justa. Ese niño es una minita.

Librada. ¡Pues y el mayorcito! Ese coge una cesta, una botella vacía, se pára en una esquina de tránsito, se echa al suelo, rompe a llorar amargamente como si se le partiese el corazón, y cuando viene gente hay que oírle : "¡Ay, mi pobre madre . . . ! ¡Ella, que va y me da dos pesetas para traer aceite, y voy y las pierdo . . . ! ¡Ay, después de cuarenta y ocho horas que no comemos . . . ! ¡Ay, que yo no vuelvo a mi casa, con mi pobre padre enfermo como está . . . !" Y la gente se conmueve de oír a la criatura, meten la mano en el bolsillo, y no hay llanto que no le valga al chico de cinco a seis reales.

Arniches.   (**20**)

SPANISH

Higher Grade—(Second Paper)

Wednesday, 24th 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 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,' (;) ' punto y coma.'*

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

DICTATION

Llegó el otoño. | Las vegas comenzaron | a ponerse amarillas ; | el ganado bajó | del monte ; | los paisanos se aprestaron | a cortar el maíz. | Así que lo cortaron, | después de tenerlo | algunos días en la vega | en pequeñas pirámides, | lo acarrearon | a las casas. | Reinaba en la aldea | gran animación. | Chillaban los carros | por los caminos ; | derramábase la gente | por las eras. | Una brisa fresca | perfumada de madreselva | corría por el campo. | Unos iban al río | y con los calzones remangados | entraban en él | y pescaban con caña | las sabrosas truchas salmonadas ; | otros sacudían los castaños | y amontonaban los erizos | en un cerco | hecho de piedra | para que allí se pudran | y dejen suelto el fruto ; | otros aguijaban los bueyes | delante del carro. | Las mujeres los ayudaban, | y unas veces en las eras, | otras en casa | amasando y cociendo, | otras, por fin, | en el río | lavando su ropa | manchada por el polvo | y el sudor, | riendo y cantando siempre, | esparcían por el valle | la alegría. | **(10)**

SPANISH

HIGHER GRADE—(SECOND PAPER)

Wednesday, 24th 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 Spanish :—

" They must be Englishmen ! " cried one of the lads.
" Let's watch them go by." The three clambered up above
the road, and waited eagerly. Arjun had heard many
stories of the queer foreigners who wore strange clothes.
He had been told by his father that they were a nation of
crazy men, who did things without any reason. " I myself
once went with one of them ten days into the interior, and
he did nothing but climb to the top of a mountain, and then
climb down again and come back ! " In a few minutes
three young Englishmen appeared. They were dressed for
a holiday, and were probably on their way into Kulu to shoot
bears. When they had passed, the boys took the road again.
" Did you ever see such clothes or such hats ? " said one,
laughing. " Or such faces ? " said another. " They looked
as if they had been cooked. And their hair was just like
straw ! " " There is a cat in Zahu, and its eyes are just the
colour of the eyes of those men," observed Arjun. " They
must be very sorry to be so ugly." " I don't believe so,"
said the oldest boy. " They are probably so used to it
that they do not even notice it." **(40)**

2. Translate into Spanish :—
   (1) Nobody will know exactly what happened until
       to-morrow evening.
   (2) Some say this, some say the opposite. Whom is
       one to believe ?
   (3) If I had had only half your experience I shouldn't
       be in this fix now.
   (4) Come and dine with us to-night at 7.30. My
       wife will be delighted to see you.
   (5) Certainly you can ask my opinion, but don't
       forget that the responsibility is yours. **(15)**

3. Write in Spanish a continuous story based on the
following summary. **The story should be about the same
length as your answer to question 1.** Failure to comply
with this instruction may lead to a loss of marks.

> Donald, whose parents live in South America, is
> very lonely at school in Scotland—decides to run away
> to nearest relatives, in south of Spain—makes friends
> with captain of boat in harbour, bound for Bilbao—
> arrives in Bilbao with only a few shillings in his pocket.

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

ITALIAN

LOWER GRADE

Wednesday, 24th 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)   *La Volpe ed il Montone.*

Un giorno d'estate, una volpe ed un montone camminavano insieme. Faceva caldo, il sole era cocente e la strada era polverosa. La volpe ed il montone avevano gran sete, e non trovavano una stilla d'acqua. Finalmente, giunsero ad un pozzo.

Il pozzo era profondo e non sapevano come fare per bere.—Andiamo giù—disse la volpe.—Possiamo dissetarci.

Con un salto, saltarono in fondo. Si misero a bere con gran piacere, ed a far salti nell'acqua per rinfrescarsi. Ma dopo che si erano dissetati e rinfrescati bisognava uscire. Come fare per uscire ? La volpe pensò, poi disse al montone : —Ecco. Tu ti drizzerai sulle zampe posteriori, e poserai le zampe davanti sulle pareti del pozzo. Io, saltando su per la tua groppa e per le tue corna, uscirò fuori.

Il montone fece ciò che la volpe aveva detto. La volpe con due salti uscì fuori. Ma quando fu fuori, non pensò ad aiutare il povero montone, ch'era rimasto nel pozzo, invece si mise a ridere ed a beffeggiarlo.   (25)

(b) Caro Guido,

Arrivo stamattina a Milano, corro all'albergo, poi subito a casa tua, desideroso di rivedere dopo tanto tempo il mio caro amico, e da tuo fratello sento che sei partito per Firenze.—Quando ?—Otto giorni fa.

È dunque mia intenzione di lasciar Milano, e, se tu sei ancora a Firenze, di venire a passare alcuni giorni in tua compagnia.   Già da tanto tempo desidero di vedere la città dei fiori, i mirabili suoi monumenti e di sentire parlare l'italiano alla sua vera fonte.

La direzione del mio viaggio dipende dunque dalla tua risposta ch'io aspetto con vera impazienza.

E per oggi basta.

Con una cordiale stretta di mano resto il tuo affmo.

<div align="right">Ernesto.   (25)</div>

2. Translate into Italian :—

    (*a*) This exercise is full of mistakes.
    (*b*) What a pretty child !
    (*c*) There are twelve months in the year.
    (*d*) At noon the boys will be home from school.
    (*e*) It is nearly six o'clock.
    (*f*) To whom shall I give the money ?
    (*g*) I should like to read that book ; will you lend it to me ?
    (*h*) Gold is more precious than silver.   (**15**)

3. **Either** (*a*) Write a Letter in Italian (of about the length of the first passage in Question 1) inviting a friend to spend the holidays with you.

Or (*b*) Write an essay (of about the same length) on " Spring in Scotland."   (**15**)

ITALIAN

HIGHER GRADE—(FIRST PAPER)

Wednesday, 24th 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.

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

(a)   *Pupazzi di cartone.*

Quando io avevo dieci anni, giocavo coi re, e fu il solo tempo in cui vissi in dimestichezza con gente di gran paraggio. Li avevo fatti io stesso di cartone e dipinti di rosso e di azzurro con elmo e spada. L'ho a mente quella stanzaccia a soffitta, diroccata[1], con un odor di topi. Là i miei re conducevano un'esistenza da fare invidia ai veri re della terra. Si cavavano tutte le voglie[2], i miei nobili re. Ma in fondo ero io che mi cavavo le mie : ed era certamente per questa specie di incantamento che io non mi stancavo mai dal giocare a quel giuoco silenzioso e calmo, ma pieno di terribili cose ; giacchè vendicarsi, sterminare i nemici e farne strage, e poi riportarne il trionfo era il più grande de' miei piaceri.

I miei di casa si meravigliavano come io potessi stare per ore e ore con un pupazzo in una mano e un pupazzo nell'altra, e non capivano che era un re che parlava ad un altro re suo rivale, vinto, stretto in catene davanti a lui.

Io non ero cattivo, ma i miei re erano terribilmente feroci, e inesorabili.

Un'altra cosa ricordo ancora, cioè che i miei re riposavano delle fatiche della guerra in grandi e suntuosi pranzi, i quali corrispondevano appunto a quelli che non si facevano a casa mia.   **(25)**

(b)   *La rivoluzione comincia.*

Bourgogne.   (*Entrando affannato.*)   Eccellenza!

Lorenzo.   Altre novità ? . . .

Bourgogne.   Mi trovavo laggiù !

Tutti.   Ebbene ? ! . . .

Lorenzo.   Che cosa succede ?

Bourgogne.   Per me . . . è una rivoluzione !

Lorenzo.   E per me una esagerazione ! (*Suonata al telefono.*)

[1] diroccato = unfurnished, dismantled.
[2] cavarsi una voglia = to satisfy a wish.

Landor. (*Riuscendo a riafferrare per il primo il ricevitore e ascoltando.*)   Pronto !   (*Poi riferendo senza staccarsi.*) Sono arrivati sulla Piazza maggiore ! Si è fatto un tentativo per iscioglièrli ! . . . Altri arresti ! (*Grida confuse, lontane.*)   Sono qui ! (*Abbandona il telefono.*)

Burleston. (*Spaventato, a Landor.*) Perdio ! .   .   .   Lei pensi a fare tutelare questo palazzo. . . Non per il signor Sottoprefetto, che non ha paura, ma . . . per queste signore ! (*Va in su e in giù cercando un angolo per nascondersi.*)

Lorenzo.   Ho detto di lasciarli entrare !

Tutti.   Ma no, no, no !

Bourgogne.   È un voler fare la fine di Luigi XVI !

Landor.   Ci penso io ! (*Esce dal fondo, poi torna. Le grida aumentano avvicinandosi.*)

Lorenzo.   (*Abbottonandosi il soprabito.*)   Bisogna affrontare la bufera ! Parlerò al popolo da quel balcone ! (*Va per affacciarsi.*)

Tutti.   (*Gettandoglisi dinanzi.*)   Ma no ! . . . Pensi a quello che fa ! . . . (*Due o tre sassi spazzano i vetri.*)   *A. Novelli.* **(25)**

2. Translate into English :—

Rosignolo.

O rosignolo dal canto sì gentile,
Chi t'ha insegnato sì gentil cantare ?
Chi t'ha insegnato quando torna aprile
Di tornar questi boschi a visitare ?
Se queste cose te le insegna amore,
Insegnami ad amar, gentil cantore :
Se queste cose dall'amore apprendi,
Insegnami l'amor tu che l'intendi.   **(10)**

ITALIAN

Higher Grade—(Second Paper)

Wednesday, 24th March—1 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 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 Italian 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 :—(.) "punto fermo," (,) "virgola," (:) "due punti," (;) "punta e virgola."*
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

Un⌒celebre⌒scrittore | raccomanda questo⌒sistema di⌒vita : | Cammina due⌒ore il⌒giorno, | e dormi sette⌒ ore la⌒notte ; | còricati appena⌒ti⌒piglia il⌒sonno ; | àlzati appena⌒sei⌒sveglio ; | lavora appena⌒sei⌒alzato. | Non⌒mangiare né⌒bévere | più⌒del⌒necessario, | e sempre adagio. | Non⌒parlare che quando devi ; | non⌒ scrivere che⌒quello che puoi⌒firmare ; | non⌒fare che⌒ quello che puoi⌒dire. | Non dimenticar mai | che gli⌒altri conteranno su⌒di⌒te, | e che tu non⌒devi⌒mai |

contare su◯di◯loro. | Non dare al◯denaro | un◯valore maggiore, | non◯gliene◯dare uno minore | di◯quello che ◯ha : | è un◯buon servitore, | ma anche un◯cattivo padrone. | Sii facile al◯perdono, | e godrai la◯pace. | Non◯rider◯troppo degli uomini, | non li disprezzare, | non li odiare. | Stùdiati di◯essere semplice, | di◯renderti utile, | di restar libero. | Se◯avrai◯molto a soffrire, | guarda in◯faccia il tuo dolore : | ti consolerà | e t'insegnerà molte cose. | (**10**)

ITALIAN

HIGHER GRADE—(SECOND PAPER)

Wednesday, 24th 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 Italian :—

"This is your room, Sir," said the chambermaid.

"Very well," replied Mr. Pickwick, looking round him. It was a tolerably large double-bedded room, with a fire ; upon the whole, a more comfortable-looking apartment than Mr. Pickwick had expected.

"Nobody sleeps in the other bed, of course," said Mr. Pickwick.

"Oh no, Sir."

"Very good. Tell my servant to bring me up some hot water at half-past eight in the morning, and that I shall not want him any more to-night."

"Yes, Sir." And bidding Mr. Pickwick good-night, the chambermaid retired, and left him alone.

Mr. Pickwick sat down in a chair before the fire, and fell into a train of rambling meditations.[1] Then he roused himself and began to undress, when he recollected he had left his watch on the table downstairs.   (**40**)

[1] to fall into a train of meditations = immergersi in una serie di meditazioni.

2. Translate into idiomatic Italian :—

    (*a*) There were four of us in the compartment, all strangers to one another.

    (*b*) Why did you not ask him his name ?

    (*c*) He came to meet me with open arms.

    (*d*) Don't read so quickly.

    (*e*) Her father wishes her to spend two years abroad.

(15)

3. Write an essay, in Italian, on *one* of the following subjects. **The answer to this question should be about the same length as your answer to Question 1.** Failure to comply with this instruction may lead to a loss of marks.

    (*a*) An old book.

    (*b*) A visit to the cinema.

    (*c*) My first friend.

(25)

MATHEMATICS

LOWER GRADE—(FIRST PAPER)

Tuesday, 16th 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, and; where it is necessary to turn over a page during the answer to a question, a rough copy of the figure MUST *be drawn on the fresh page. 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. Prove that the sum of the interior angles of a triangle is equal to two right-angles.   **(10)**

2. Prove that in a cyclic quadrilateral the sum of either pair of opposite angles is equal to two right-angles, and hence deduce that, if one side of a cyclic quadrilateral is produced, the exterior angle so formed is equal to the interior opposite angle.   **(12)**

3. Prove that in any triangle the sum of the squares on any two sides is equal to twice the square on half the third side together with twice the square on the median which bisects the third side.   **(12)**

4. Prove that, if two triangles have their sides in proportion, they are equiangular, those angles being equal which are opposite corresponding sides.   **(12)**

Section II

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

5. The angles P, Q, R of a quadrilateral $PQRS$ are 102°, 82°, 126° respectively, and the bisectors of the four exterior angles of the quadrilateral are drawn, forming a quadrilateral $ABCD$. Find the angles of this quadrilateral.

(Section I, 1.)   **(18)**

6. $ABCD$ is a cyclic quadrilateral, in which the side AD is greater than the side BC; the sides AB and DC meet at S and the diagonals AC and BD meet at O.

Prove that the following pairs of triangles are equiangular:—(i) SBC, SDA; (ii) AOD, BOC; (iii) SAC, SDB.

If CD is produced (through D) to E, and BX, the bisector of the angle ABC, meets the circumference of the circle circumscribing the quadrilateral in X, prove that XD, produced if necessary, bisects the angle ADE.

(Section I, 2.)   **(18)**

7. Two discs, of diameters 30 cm. and 6 cm., which are in the same vertical plane, stand on a horizontal shelf and have their points of contact with the shelf 35 cm. apart. Find the distance apart of—

      (i) their centres,

      (ii) the nearest points of the discs,

      (iii) the top points of the discs (to two decimal places).

                                                     (18)

8. P is any point outside a parallelogram $ABCD$, whose diagonals AC and BD meet at O.

Prove that—

$$PA^2 + PB^2 + PC^2 + PD^2 = 4\,PO^2 + \tfrac{1}{2}(AC^2 + BD^2).$$

If the figure $ABCD$ is a rhombus, prove that—

$$PA^2 + PB^2 + PC^2 + PD^2 = 4PO^2 + 2AB^2.$$

                                      (Section I, 3.)   **(18)**

9. In the accompanying diagram (*which need not be copied in your examination book*) $PQRS$ is a parallelogram, O any point on the diagonal PR, and AOC, BOD lines parallel to PQ and PS respectively. AB, BC, CD and DA are drawn. Show that—

      (i) area of quadrilateral $ABCD = \tfrac{1}{2}$ area of parallelogram $PQRS$;

      (ii) area of parallelogram $BQCO =$ area of parallelogram $AODS$;

      (iii) $OC : PQ = OD : PS$;

      (iv) AB is parallel to DC.   **(18)**
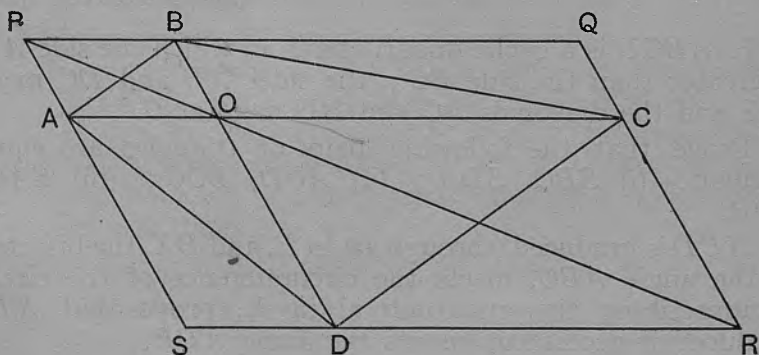
MATHEMATICS

LOWER GRADE—(SECOND PAPER)

Tuesday, 16th 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 motorist finds that in the first three months of the year he has covered 1,479 miles and in the second three months 2,553 miles.

If he uses 73 gallons and 112 gallons of petrol in the first three and the second three months respectively, find to two places of decimals the average number of miles covered per gallon in each of the two periods and also for the whole six months.

If petrol costs 1s. 7d. per gallon, find to the nearest tenth of a penny his running cost per mile for petrol for the whole period. **(13)**

2. A rectangular plate measuring 6·3 in. by 4·7 in. has four separate circular holes, each 0·28 in. in diameter, bored in it to receive bolts.

Find, as nearly as your tables allow, how much per cent. of the original area has been bored away.

$$\left(\text{Take } \pi = \frac{22}{7}\right).$$

(13)

3. (a) Solve the equation

$$\frac{3}{2\,(x-2)} - \frac{4}{(2x-3)} + \frac{3}{2\,(3x-4)} = 0.$$

(b) Factorise completely
    (i) $(p^2 - 6)^2 - 25\,p^2$;
    (ii) $9x^4 - 4x^2\,y^2 - 27x^2y + 12y^3.$ **(13)**

4. (a) Find from a rough figure, and by calculating all the lengths required, the values of the sine, cosine and tangent of 60° and 30°. How are these two angles written in circular measure ?

(b) If $\tan\theta = y/x$, where x and y are integers, find the values of $\sin\theta$ and $\cos\theta$.

Give one reason why the answer $\sin\theta = y$, $\cos\theta = x$ is obviously wrong. **(13)**

Section II

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

5. (a) If $\dfrac{2}{l} = \dfrac{1}{a} + \dfrac{1}{b}$, express b explicitly in terms of l and a.

(b) If $x = \dfrac{p + q}{pq - 1}$ and $y = \dfrac{pq - 1}{p - q}$, show, by substitution for x and y, that

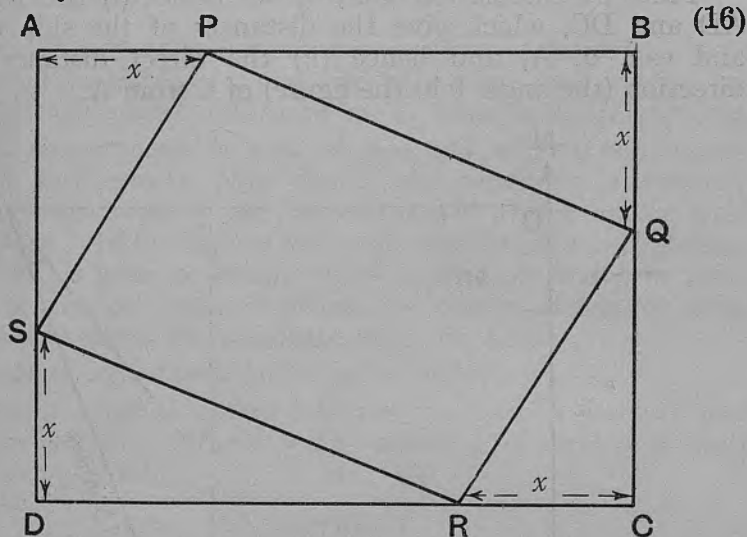$$\frac{x - \dfrac{1}{y} + q}{x + \dfrac{1}{y} + p} = \frac{q}{p}.$$

(16)

6. In the accompanying figure of a rectangle $AB = 8$, $BC = 6$, and $AP = BQ = CR = DS = x$.

Show that the area y of the figure PQRS is given by
$$y = 48 - 14x + 2x^2.$$

Make a table of values of y for integral values of x from 0 to 6, and draw a graph, taking 1 in. on your figure to represent 1 unit for x and 10 units for y.

From your curve find for what value of x the area is least. **(16)**

7. A sum of £a is invested at r per cent. per annum ; show that the amount (principal and interest) after a year is £$a \left(1 + \dfrac{r}{100}\right)$.
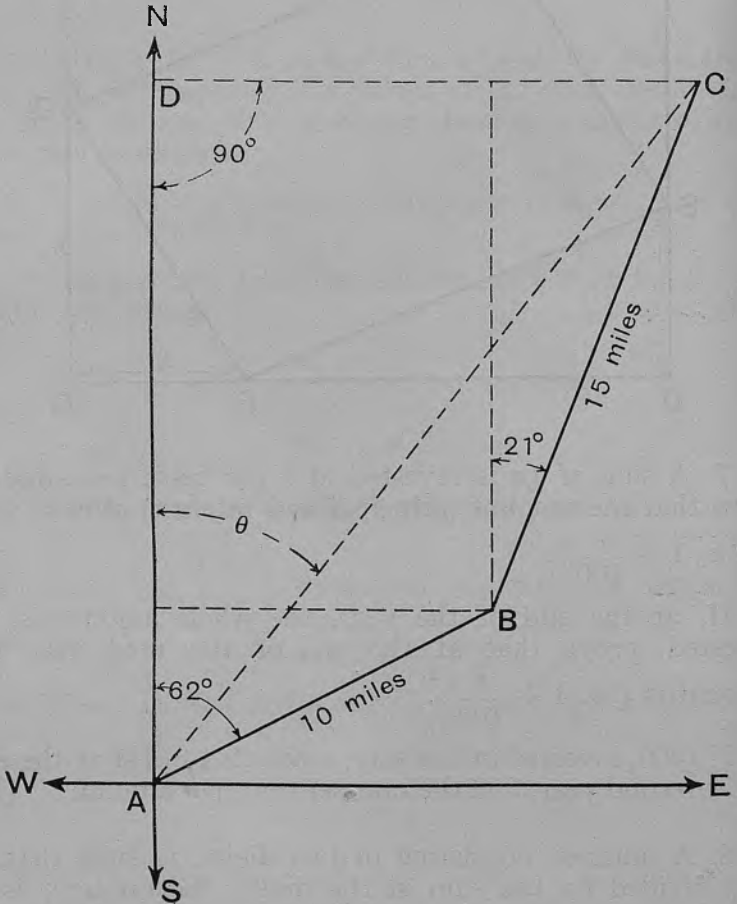
If, at the end of the year, the whole amount is re-invested, prove that at the end of the next year the amount is £$a \left(1 + \dfrac{r}{100}\right)^2$.

If £400, invested in this way, amounts to £441 at the end of the second year, find the rate per cent. per annum. **(16)**

8. A number, consisting of two digits, is such that, if it is divided by the sum of the digits, the quotient is 5, while, if the number is increased by 9, the digits are reversed. Find the number. **(16)**

9. In the accompanying figure, AB and BC represent part of a ship's course, the distances and directions being as indicated.

Find by calculation from your tables (i) the lengths AD and DC, which give the distances of the ship north and east of A, and hence (ii) the direct distance and direction (the angle θ in the figure) of C from A. (16)

MATHEMATICS

HIGHER GRADE—(FIRST PAPER)

Tuesday, 16th 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, and, where it is necessary to turn over a page during the answer to a question, a rough copy of the figure MUST *be drawn on the fresh page. 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. Prove that the three altitudes of a triangle are concurrent. **(12)**

2. If from an external point P two secants PRS and PXY be drawn to a circle, prove that
$$PR \cdot PS = PX \cdot PY,$$
and deduce that each of these rectangles is equal to the square on the tangent from P to the circle. **(12)**

3. Show that the areas of similar triangles are to each other as the squares on their corresponding sides. **(13)**

4. Prove the formulae
$$x = \frac{lx_2 + mx_1}{l + m},$$
$$y = \frac{ly_2 + my_1}{l + m}$$
for the co-ordinates of a point dividing the straight line joining the points, whose co-ordinates are (x_1, y_1) and (x_2, y_2), in the ratio $l : m$. **(12)**

SECTION II

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

5. A and B are fixed points on a straight line, P a fixed point on AB produced.

(a) If PRS and PTV be secants from P to any two circles passing through A and B, and if RV and ST meet in X, prove that

$$RX \cdot XV = SX \cdot XT.$$

(b) Show that the points of contact of the tangents from P to all circles passing through A and B lie on a circle.   (Section I, 2.)   (17)

6. Show how to divide a line XY at a point Z, so that

$$XZ^2 = XY \cdot ZY,$$

and prove your construction.

If a point S be taken in XZ, such that SZ is equal to ZY, prove that

$$XS \cdot XZ = SZ^2. \tag{17}$$

7. Prove that the area of a regular pentagon (five-sided figure) inscribed in a circle is equal to $0 \cdot 6546$ times (to four significant figures) the area of a regular pentagon circumscribing the same circle.

Find a formula for the ratio of the areas of two regular polygons of n sides, one inscribed in and the other circumscribed about the same circle.   (Section I, 3.)   (17)

8. A triangle has vertices A, B, C, whose co-ordinates are $(5, 3)$, $(-4, -1)$, $(2, 4)$ respectively.

If D and E be the mid-points of BC and AC, find the equations of the two medians AD and BE, and the co-ordinates of G, their point of intersection.

Verify (by analytical geometry) that G is one of the points of trisection of AD.   (Section I, 4.)   (17)

9. OQ and OAB being two straight lines at right angles, construct a circle which passes through A and B and to which OQ is a tangent. (Your construction lines must be clearly shown, but no proof is required.)

If in the above figure AB is a flagstaff on a tower OA, show that the angle subtended by the flagstaff at a point on the level ground OQ is greatest when the observer is at P, the point of contact of OQ with the circle.

If $OP = d$, and $A\hat{P}B = \alpha$, prove, by joining A and B to the centre of the circle, that

$$AB = 2d \tan \alpha. \qquad (17)$$

MATHEMATICS

HIGHER GRADE—(SECOND PAPER)

Tuesday, 16th 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 man deposited a sum of money in a bank at $2\frac{1}{2}$ per cent. per annum compound interest. At the end of two years the bank failed, and a payment of six shillings and eightpence in the pound was made to the creditors. If the man received £126 1s. 6d., what was the amount of his original deposit ? **(12)**

2. A quantity of metal weighing 206 lb. is melted down and formed into a wire whose circular cross-section is $\frac{1}{4}$ inch in diameter. If the metal weighs 288 lb. per cubic foot, find, in inches, correct to the nearest inch, the length of the wire. [Take $\pi = 3 \cdot 1416$.]   (12)

3. Solve the equations

(i) $4 + \dfrac{8}{x+3} - \dfrac{21}{(x+3)^2} = 0$;

(ii) $2x + 3y + 1 = 0$,
$x^2 - xy - y^2 + 2x - y = 0$.

(12)

4. (i) Factorise

(a) $2x^2 - 3xy - 2y^2$, and hence

(b) $2x^2 - 3xy - 2y^2 + 5x + 5y - 3$.

(ii) Simplify

(a) $\dfrac{(\sqrt{3} - \sqrt{2})(\sqrt{3} + \sqrt{2} - 1)}{(\sqrt{2} + 1)(\sqrt{3} - \sqrt{6} + 1)}$;

(b) $(x^{\frac{2}{3}} - y^{\frac{2}{3}})(x^{\frac{2}{3}} - x^{\frac{1}{3}} y^{\frac{1}{3}} + y^{\frac{2}{3}})(x^{\frac{2}{3}} + x^{\frac{1}{3}} y^{\frac{1}{3}} + y^{\frac{2}{3}})$.

(12)

5. If R is the radius of the circum-circle of the triangle ABC, establish the formula

$$a = 2R \sin A$$

for the cases in which A is (i) an acute angle, (ii) an obtuse angle, (iii) a right angle.

If $a = 77 \cdot 4$, $A = 42°$, $B = 76°$, find the values of R and b.

(a and b are the lengths of the sides BC and CA of the triangle.)   (12)

6. Prove the identities

(i) $\dfrac{1}{\sec A - \tan A} - \dfrac{1}{\sec A + \tan A} = 2 \tan A$;

(ii) $\dfrac{\sin A + \sin 2A + \sin 3A}{\cos A + \cos 2A + \cos 3A} = \tan 2A$.

(12)

SECTION II

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

7. Divide $ax^3 + bx^2 + cx + d$ by $x - k$, obtaining the quotient and the remainder.

Determine a and b so that the polynomial
$$x^4 - 3x^3 + ax^2 - x + b$$
may be divisible by $x + 1$ and $x - 3$. Factorise the expression completely when a and b have the values found. **(14)**

8. The volume of a rectangular tank is 90 cubic feet, the combined area of the sides and bottom of the tank is 96 square feet, and the perimeter of the lid, which just fits the top of the tank, is 22 feet. Find the length, breadth, and height of the tank. **(14)**

9. Find all the angles between $0°$ and $360°$ which satisfy the equation
$$3 \cos 2\theta + \cos \theta + 1 = 0.$$

What are the angles between $0°$ and $360°$ which satisfy the equation
$$3 \cos 2\theta + \sin \theta - 1 = 0 ?$$ **(14)**

10. Assuming the expansions for $\sin (A + B)$ and $\cos (A + B)$, prove that
$$\tan (A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}.$$

Write down the corresponding formulae for $\tan (A - B)$ and $\tan 2A$.

In a triangle ABC the angle C is a right angle, and the sides BC and CA are equal. A point D is taken in CA such that CD is one-third of CA, and CA is produced to E so that AE is equal to CD. Find the tangent of the angle DBA, and prove that the angle CBE is double the angle DBA. **(14)**

ARITHMETIC

Tuesday, 16th 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. Find the cost of 6 tons 14 cwt. 3 qr. of lead at
£11 11s. 8d. per ton.   (8)

2. If a kilogram = 2·205 lbs. and £1 = 75 francs, find
the cost in francs and centimes (to the nearest centime) per
kilogram of a commodity costing a shilling per lb. (a franc
= 100 centimes).   (10)

3. A man's earnings in eight consecutive weeks were
£3 14s. 2d., £3 19s. 1d., £4 14s. 7d., £4 0s. 6d., £5 2s. 1d.,
£2 18s. 6d., £2 15s. 9d. and £1 19s. 2d.   What must his
average earnings be for each of the next two weeks in order
to make his average earnings for each of the ten weeks
£4 1s. 10d. ?   (12)

4. (*a*) Find the area of a felt border 2 feet wide round
the floor of a rectangular room 24 feet by 16 feet.

(*b*) If this felt border costs 6s. 3d. per square yard, and
the rest of the floor is covered with carpet at 12s. 9d. per
square yard, find the total cost of the felt and the carpet. (12)

5. A grocer buys 1 cwt. of butter from a farmer, paying
him at the rate of 1s. 4½d. a lb.   The cost of transport,
which is borne by the grocer, amounts in all to 6s.
At what price per lb. (to the nearest penny) should he
sell the butter so as to make a profit of 15 per cent. on
his total outlay ?   (12)

6. If the rate of interest on a loan is raised from $4\frac{1}{4}$ to $4\frac{3}{4}$ per cent. per annum, the annual interest is increased by £3 6s. 6d.   Find the amount of the loan.   **(12)**

7. Snow lies on a rectangular roof measuring 33 ft. by 18 ft. to a depth of $3\frac{3}{4}$ inches.   When the snow melts, the water runs into an upright cylindrical tank of diameter 4 ft. 6 in.   If the snow loses $\frac{3}{5}$ of its bulk in melting, find the depth of water in the tank when complete melting has taken place.   (Take $\pi = 3\frac{1}{7}$.)   **(14)**

ELEMENTARY ANALYSIS

ADDITIONAL MATHEMATICAL SUBJECT
(Higher Grade)

Wednesday, 17th 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 is provided.

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

SECTION I

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

1. If $x + y + z = 1$
   $ax + by + cz = d$
   $a^2x + b^2y + c^2z = d^2,$

show that $x = \dfrac{(c - d)\ (b - d)}{(c - a)\ (b - a)}$, and write down the values of y and z.   **(15)**

2. Prove that, if $t = \tan\theta$, then
$$\cos 8\theta = \cos^8\theta \, (1 - 28t^2 + 70t^4 - 28t^6 + t^8).$$
Hence show that one root of the equation
$$x^4 - 28x^3 + 70x^2 - 28x + 1 = 0$$
is $\tan^2\dfrac{\pi}{16}$, and find analogous expressions for the other three roots. (15)

3. Prove that the number of combinations of n distinct things taken r at a time is
$$\frac{n\,(n-1)\,(n-2)\ \ .\ \ .\ \ .\ \ (n-r+1)}{1\ .\ 2\ .\ 3\ .\ \ .\ \ .\ \ .\ \ .\ \ r}.$$
Twelve players are grouped into three parties of four players each. If the arrangement of the players in a party is immaterial, show that the grouping can be done in 5,775 ways. (15)

4. Differentiate
$$(x+1)\,(x+2)\,(x+3), \quad e^x\sin x, \quad \left(1-\frac{1}{x}\right)^2.$$
If $y = x^2 - 2x + 2 + ae^{-x}$, where a is a constant, show that
$$y + \frac{dy}{dx} = x^2. \tag{15}$$

5. Evaluate
$$\int (x+1)\,(x^2 + 2x - 3)\,dx,$$
$$\int \frac{x}{x^2-1}\,dx, \qquad \int_0^{\frac{\pi}{2}} (x+1)\sin x\,dx. \tag{15}$$

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

6. By considering the curve $y = x^3$, or otherwise, prove that
$$\left(\frac{a+b}{2}\right)^3 < \frac{a^3+b^3}{2}$$
and
$$\left(\frac{ma+nb}{m+n}\right)^3 < \frac{ma^3+nb^3}{m+n},$$
where a, b, m and n are positive and a and b are unequal.

What is the corresponding relation if m and n have opposite signs and $|\,n\,| > |\,m\,|$, both a and b being positive? (20)

7. Express $\dfrac{2x^2 + 2}{(x^2 - 1)^2}$ in partial fractions.

Hence find the area enclosed between the lines $x = \pm \frac{1}{2}, y = 0$ and the graph of this function. **(20)**

8. Prove that, if $-1 < x < 1$,

$$\log (1 + x) = x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \quad \cdot \quad \cdot \quad \cdot \, ,$$

and that

$$\log (1 + x + x^2) = x + \frac{x^2}{2} - \frac{2x^3}{3} + \frac{x^4}{4} + \quad \cdot \quad \cdot \quad \cdot \quad \cdot$$

Give the $3n$th and the next two consecutive terms of this series, and obtain also a series for

$$\log (1 + x + x^2 + x^3). \tag{20}$$

9. Prove that, if $-1 < x < 1$, then

$$1 + 2x \cos \theta + 3x^2 \cos 2\theta + \quad \cdot \quad \cdot \quad \cdot \quad \cdot$$
$$= \frac{1 - 2x \cos \theta + x^2 \cos 2\theta}{(1 - 2x \cos \theta + x^2)^2}.$$

If $\tan^{-1} x = \tan^{-1} (n + 1) - \tan^{-1} (n - 1)$, express x in terms of n, and hence sum to n terms

$$\tan^{-1} \frac{2}{1^2} + \tan^{-1} \frac{2}{2^2} + \tan^{-1} \frac{2}{3^2} + \quad \cdot \quad \cdot \quad \cdot \tag{20}$$

GEOMETRY

Additional Mathematical Subject
(Higher Grade)

Wednesday, 24th 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.

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. Find the equation of the perpendicular bisector of the line joining the points, whose co-ordinates are (x_1, y_1) and (x_2, y_2).

Determine the equation of the circumcircle of the triangle whose vertices are the points
$$(6, 5), (2, -3), (-1, -2).$$

2. What are the equations of the straight lines, one passing through the point whose co-ordinates are $(a, 0)$ and the other through the point whose co-ordinates are $(0, b)$, making angles $\theta + 45°$ and θ respectively with the positive direction of the axis of x?

Show that, as θ varies, the locus of the point of intersection of the lines is the circle, whose equation is
$$x^2 + y^2 - (x + y)(a + b) + ab = 0.$$

3. Obtain the equation of the normal to the parabola $y^2 = 4\,ax$, at the point P, whose co-ordinates are $(at^2, 2at)$, in the form
$$y + tx = 2at + at^3.$$

If the normal cuts the axis of x in G, show that the co-ordinates of Q, the mid-point of PG, are
$$x = a(1 + t^2)$$
$$y = at;$$
and hence show that Q lies on the parabola, whose equation is
$$y^2 = a(x - a).$$

4. Find the co-ordinates of the mid-point of the chord formed by the intersection of the straight line

$$y = mx + c$$

with the ellipse

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

Show that the chord of the ellipse, whose mid-point is the point (x', y'), has equation

$$(x - x') \frac{x'}{a^2} + (y - y') \frac{y'}{b^2} = 0.$$

5. Verify that the points P and Q, whose co-ordinates are $(a \sec \varphi, b \tan \varphi)$ and $(a \tan \varphi, b \sec \varphi)$, lie on the hyperbolas

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

$$\text{and } \frac{x^2}{a^2} - \frac{y^2}{b^2} = -1$$

respectively.

Prove (i) that the tangents to the curves at P and Q meet at a point R on the common asymptote $x/a - y/b = 0$;

(ii) that OQ is parallel to the tangent at P ;

(iii) that $OP^2 - OQ^2 = a^2 - b^2$;

(iv) that the area of the parallelogram $OPRQ$ is ab.

(O is the origin of co-ordinates).

SECTION II

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

6. Prove that the circle through the mid-points of the sides of a triangle passes through the feet of the altitudes and through the mid-points of the portions of the altitudes included between the orthocentre and the vertices.

If I, I_1, I_2, I_3 are the in- and ex-centres of the triangle ABC, show that the circumcircle of the triangle ABC bisects each of the six lines joining the points I, I_1, I_2, I_3 in pairs.

7. Prove the following construction for the radical axis of two non-intersecting circles :—

Draw any circle to cut the given circles in P, Q and R, S respectively. Join PQ and RS and let these lines meet at T. The radical axis is the straight line through T perpendicular to the line of centres.

Show, with proof, how to draw a circle cutting three non-co-axial circles orthogonally.

8. Prove that, if any line through a given point P cuts a given circle in points Q and R, and if S is the harmonic conjugate of P with respect to Q and R, then the locus of S for all positions of the line is a straight line. What is the locus called and how is it most easily drawn if P be outside the circle ?

If OAX is the altitude from the obtuse angle A of a triangle ABC, O being the orthocentre, and if a circle be drawn with centre O and radius r, such that $r^2 = OA . OX$, prove that each side of the triangle is the polar line of the opposite vertex.

9. Give a construction for

(i) the perpendicular on a given plane from a point outside it ; and

(ii) the common perpendicular to two non-intersecting lines in space.

Justify your construction in each case.

DYNAMICS

ADDITIONAL MATHEMATICAL SUBJECT
(Higher Grade)

Friday, 19th 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. What is meant by the statement that " the acceleration due to gravity is uniform and is 32 feet per second per second " ?

From a point in space a stone is projected vertically upwards with a velocity of 144 feet per second. How long will it take to return to its starting point ? If a second stone is dropped from the same point at the instant when the first stone is 35 feet above the point and on its return journey, at what distance below the starting point will the first stone overtake the second ?   **(15)**

2. Prove that the algebraic sum of the moments of two like parallel forces about any point in the plane of their lines of action is equal to the moment of their resultant about the same point.

Particles of weights 2, 4, 6 and 8 lb. are fastened at equal intervals to a uniform rod of length 4 feet and mass 10 lb., the first and fourth particles being at the ends of the rod. Determine the position of the centre of gravity of the particles and rod.   **(15)**

3. State the Principle of Work as applied to a machine.

The efficiency of a pump is 0·65. What is the horse-power of an engine which, by means of this pump, raises water from a depth of 284 feet at the rate of 220 gallons per minute and delivers it at the top with a velocity of 32 feet per second ?

(A gallon of water weighs 10 lb.)   **(15)**

4. A beaker, partly full of water, is placed on the pan of a spring compression balance, and the weight recorded is 325 gm. An aluminium cylinder weighing 108 gm. is now gently lowered by means of a thread into the water and finally allowed to rest freely on the bottom of the beaker. Find the readings of the balance (*a*) when the cylinder is completely immersed, but not touching the bottom of the beaker, and (*b*) when the cylinder rests on the bottom of the beaker. (Sp. gr. of aluminium = 2·7)

If a portion of the cylinder weighing 81 gm. is removed and replaced by a substance of sp. gr. 0·25 so that the volume remains unchanged, find the specific gravity of the new cylinder and also readings of the balance (i) when half this cylinder is immersed, and (ii) when the cylinder is lowered until there is no tension in the thread. **(15)**

SECTION II

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

5. A uniform sphere of weight 15 lb. is supported by a string, of length equal to the radius, joining a point on the sphere to a point on a smooth vertical plane. If the sphere rests against the plane, find the pressure exerted by the sphere on the plane.

If the plane be tilted so as to be inclined at an angle of 60° to the vertical, find the tension in the string. **(20)**

6. What is meant by " pressure at a point " in a fluid? A cubical box of edge 2 feet rests with its bottom on a horizontal bench. It is filled, half with water and half with oil of sp. gr. 0·75, and the liquids do not mix. Calculate the total pressure (i) on the bottom and (ii) on one of the sides of the box.

(1 cubic foot of water weighs 1,000 oz.) **(20)**

7. Upon what factors does the coefficient of friction depend?

A force of 2 lb. weight acting up and parallel to a rough plane inclined at 30° to the horizontal is just sufficient to keep a body of 16 lb. weight from slipping down. Find the least *horizontal* force which would keep the body from sliding down the same plane. **(20)**

8. State Newton's Second Law of Motion and explain any terms which you think need comment.

It was found that, as the result of a continuous rainstorm over a period of 16 hours, 3 inches of rain fell in a certain district. Estimate the pressure in lb. per acre due to the impact of the rain, supposing the drops to have a velocity due to falling freely from a height of 324 feet.

(1 cubic foot of water weighs 1,000 oz.) **(20)**

BOOKKEEPING

Friday, 19th 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. Explain briefly the theory of double-entry book-keeping and state its advantages.   **(10)**

2. On 1st February, 1937, W. Brown purchased the business of R. George for £1,500, taking over the following assets and liabilities :—debtors, B. Waters, £196 12s. 4d., D. Ford, £202 10s. 6d. ;   creditors, E. Grant, £135 9s. 9d., F. Gray, £63 13s. 1d. ;   furniture and fixtures, £100, and stock (at valuation) £1,000.   On the same day he paid £2,000 into bank and drew a cheque in favour of R. George in settlement of the purchase price.

Open the necessary books of account and record therein the above and the following transactions ;   bill books should be kept.   Post to ledger and extract a trial balance. All payments, except petty cash payments, were made by cheque and all receipts were banked the same day.

1937.
Feb. 1. Drew £50 from bank for petty cash.
        Purchased safe for office.   Paid by cheque, £10.

    3. Sold goods to A. Bell, £378 2s. 6d.

    5. Paid fire insurance premium, £1 10s., from petty cash.

    8. Sold goods to B. Waters, £320 less 15 per cent. trade discount.
        Received his cheque for £200, payment on account.

    9. Received from A. Bell his acceptance at 2 mos. for £300 and cheque for balance of his account less £1 17s. 6d. discount.

    12. Bought goods of E. Grant, £234 4s. 7d.

Feb. 15. Received from B. Waters his bill for £250 payable in 1 mo.

Paid E. Grant by cheque £67 19s. 6d., discount £1 14s. 10d., and gave him my acceptance at 3 mos. for balance of account.

17. C. Hill purchased goods value £187 13s. 4d.

19. Bought goods of F. Gray on credit for £126.

23. Received from C. Hill cheque for goods purchased on 17th, less 5 per cent. cash discount.

25. D. Ford bankrupt. Received cheque for first and final dividend of 13s. 4d. in £.

27. Bought goods of G. Lynd for £200 and gave him my bill at 3 mos. for that amount.

Petty cash payments for month—wages, £24; National Health and Unemployment Insurance, £1 2s. 7d. ; petty expenses, £17 3s. 2d.

Drew cheque for amount of petty cash payments for month.   (50)

3. From the following trial balance made up from the books of Messrs Young and Watkins on 31st December, 1936, prepare trading account, profit and loss account and balance sheet.

Dr. balances :—Cash at bank, £718 7s. 3d. ; cash in office, £50 ; stock (at 1st January, 1936), £1,986 15s. 3d.; wages, £4,916 18s. 11d. ; salaries, £1,980 18s. 5d. ; power and light, £301 17s. 5d. ; coal and light (office), £132 17s. 10d.; office expenses, £213 5s. 9d. ; purchases, £8,147 5s. 8d.; carriage on sales, £122 1s. 8d. ; returns inwards, £266 15s. 6d. ; traveller's salary and expenses, £514 4s. 3d.; rates and taxes, £302 18s. 7d. ; discounts allowed, £133 10s. 4d. ; buildings, £5,000 ; machinery, £2,000; goodwill, £4,000 ; furniture and fittings, £200 ; loose tools, £500 ; sundry debtors, £1,269 5s. ; bills receivable, £500; partners' drawings—Young, £1,000, Watkins, £800. Total £35,057 1s. 10d.

Cr. balances :—Capital, Young, £8,000, Watkins, £4,000; sundry creditors, £992 7s. 7d. ; sales, £22,064 14s. 3d. Total £35,057 1s. 10d.

Watkins acts as manager and is to receive a salary of £500 per annum.

Provide for depreciation of buildings at $3\frac{1}{2}$ per cent., machinery at 15 per cent., loose tools at 20 per cent., and furniture and fittings at $2\frac{1}{2}$ per cent., per annum in each case. Write off £1,000 from goodwill. Create a bad debts reserve of 5 per cent. on debtors. Stock at 31st December, 1936, was valued at £1,954 15s. 4d. Profits and losses are divided as follows :—Young, two-thirds ; Watkins, one-third. **(40)**

COMMERCIAL ARITHMETIC

(FIRST PAPER)

Friday, 19th 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.
357	5	4	1,753	14	9	4,389	5	10			
1,498	16	11	896	3	3	570	18	7			
563	5	7	5,238	5	7	283	17	4			
241	19	10	426	19	3	2,977	8	11			
4,434	4	8	3,764	7	9	353	4	4			
756	17	3	229	16	2	972	3	7			
989	4	5	505	3	4	858	17	8			
3,999	15	2	876	5	11	429	5	7			
395	3	9	921	7	7	570	19	5			
421	8	6	1,788	15	2	858	7	3			

£ : :   £ : :   £ : :

(8)

2. Subtract :—

£	s.	d.	£	s.	d.	£	s.	d.
32,949	17	5	79,353	3	7	94,584	7	4
27,855	18	7	44,565	14	8	74,593	19	5

£ : :   £ : :   £ : :

(3)

3. Write down :—

15s. 6d. as a decimal of a £ ....

$\frac{1}{8}$th of a ton in lbs. ....

75 sq. decametres in sq. centimetres ....

(5)

COMMERCIAL ARITHMETIC
(SECOND PAPER)

Friday, 19th 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 metal weighs $17 \cdot 54$ times the weight of an equal volume of water, find in lbs. (to nearest lb.) the weight of a rectangular bar of the metal measuring 35 cm. by $14 \cdot 5$ cm. by 25 mm.

(1 cu. cm. of water $= 1$ gram. 1 kilogram $= 2\frac{1}{5}$ lbs.) (6)

2. A merchant bought three lots of coal at an average price of 19s. per ton. For the first lot of 14 tons 5 cwts. he paid £14·0s. 3d., and for the second lot of 9 tons 15 cwts., £8 18s. 9d. The total quantity purchased was 36 tons. What was the price per ton paid for each lot ? (8)

3. If the price of a $4\frac{1}{2}$ per cent. stock is $105\frac{1}{4}$ and the price of a $3\frac{1}{2}$ per cent. stock $81\frac{1}{2}$, which stock would be the more profitable investment ? (8)

4. A bill dated 15th May, 1936, for £413 13s. 4d. payable in 3 months was discounted at the bank on 4th June, 1936. If banker's discount was charged at the rate of 6 per cent. per annum, what was the amount received for the bill ? (8)

5. When the standard rate of income tax was 4s. 6d. in the £ a married man was allowed free of tax one-fifth of his income and an additional amount of £270. On the tax being increased to 4s. 9d. in the £ this additional amount

was also increased to £300.   If his income was £750 and the tax on the first £135 of taxable income was at a reduced rate of 1s. 6d. per £ in the former case and 1s. 7d. in the latter, what was the increase, or decrease, in the amount of tax payable ?   (**10**)

6. If the par rates of exchange London on New York and London on Paris are 4·86 dollars and 124·21 francs to the £ respectively and the value of the £ sterling is £1   0s. 7¾d. in New York and 12s. 3¾d. in Paris, what are the actual rates of exchange ?   (**12**)

7. A sum of £4,580 amounted to £5,824 at compound interest in 7 years.   What was the rate per cent. ?   (**12**)

SCIENCE

HIGHER GRADE—(BOTANY)

Wednesday, 24th March—9.30 A.M. to 11.30 A.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. What do you understand by the process of Photosynthesis (Carbon Assimilation) in the green plant ? Describe experiments which you have performed in the laboratory to illustrate your answer.

2. Describe the structure of a woody twig, giving large-scale diagrams of (a) transverse, and (b) longitudinal sections.   Name the tissues and state the functions of each.

3. Give an account of any plant community you have studied in the field, listing the principal plants found there and stating how they are adapted for their life in the community.

4. Name and describe any plant you know which lives as a parasite on another plant. How does its nutrition differ from that of the ordinary green plant ?

5. Give an illustrated account of the structure and mode of reproduction of Spirogyra or any other alga you have studied.

6. What conditions are necessary for the germination of seeds ? Illustrate your answer by describing carefully any experiments you have performed on any *one* particular seed you have studied.

7. To what Natural Orders do the following plants belong :—

Wood Anemone, Wild Rose, Broom, Red Campion, Primrose ?

Describe the pollination mechanism in *one* of them.

SCIENCE

HIGHER GRADE—(CHEMISTRY)

Wednesday, 24th March—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.

C = 12, O = 16, Na = 23, S = 32, Cl = 35·5,
K = 39, Ca = 40, Mn = 55, Fe = 56, Cu = 63.

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. Name an acid, an acidic oxide, a basic oxide, and a salt, which may be used for drying gases in the laboratory, and state what happens in the case of the two oxides.

Take each reagent you have named and comment, with reasons, on its suitability or unsuitability for drying (a) ammonia, (b) chlorine, (c) hydrogen chloride.

2. Distinguish between (a) the atomic weight and the equivalent weight of an element ; (b) the molecular weight and the equivalent weight of a compound. In both cases, (a) and (b), give an example in which the values are the same and an example in which they are different. Justify your choice of examples.

Outline briefly the method you would employ to find the equivalent of copper. What additional information would you require to decide whether this value of the equivalent weight is the same as the atomic weight ?

3. Give a *brief* account of the contact process for the manufacture of sulphuric acid. How would you obtain from sulphuric acid a specimen of (a) sulphur dioxide, (b) sulphur trioxide ? Write equations. In what respect do these oxides differ physically ?

The following results were obtained in an experiment in which pure concentrated sulphuric acid was added to an excess of copper oxide and heated cautiously until the weight of anhydrous copper sulphate formed was constant :—

Weight of basin + copper oxide $= 30 \cdot 0$ gm.
Weight of basin + copper oxide + acid $= 31 \cdot 96$ gm.
Weight of basin and contents after heating $= 31 \cdot 6$ gm.

Write the equation and use these results to determine the molecular proportions in which water and sulphur trioxide combine to form sulphuric acid.

4. Describe in detail the procedure you would adopt to prepare a litre of normal hydrochloric acid from concentrated acid. (No standard solutions are provided.) Mention the apparatus you would use at each stage.

500 c.cm. of normal hydrochloric acid react with excess of sodium bicarbonate. Calculate (a) the weight of gas liberated, and (b) the volume occupied by this weight of gas at 17° C. and barometric height 740 mm.

5. Write short notes on the reactions which take place when the following mixtures are heated :—(a) potassium iodide and sulphuric acid, (b) sodium nitrite and ammonium chloride, (c) oxalic acid and sulphuric acid. Write equations.

How would you isolate one pure product from each reaction ?

6. Describe the method you would adopt to prepare and collect a sample of nitric oxide. Sketch the apparatus.

Describe experiments you would perform to determine whether nitric oxide supports combustion. State and explain the conclusions you would draw from your experiments.

Nitric oxide is mixed with excess of oxygen in a gas jar over water and allowed to stand. Explain, with the aid of equations, the reactions which take place (a) in the jar, (b) in the water.

7. **Either** (a) Explain the theory underlying the estimation of iron in a ferrous salt by the use of potassium permanganate. Write the equation for the reaction and calculate the weight of potassium permanganate in a litre of decinormal solution.

Or (b) Write a short note on the life of John Dalton. Detail the assumptions made by him in his atomic theory and show how he used the theory to interpret the facts of chemical combination known to him. What is the main difference between Dalton's conception of the atom and any modern theory with which you are acquainted ?

SCIENCE

HIGHER GRADE—(ENGINEERING)
(TECHNICAL SUBJECTS)

Friday, 19th March—9.30 A.M. to 11.30 A.M.

E N G I N E E R I N G. Candidates should attempt FIVE questions, 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.

T E C H N I C A L   S U B J E C T S.   Candidates should attempt **FIVE** questions, viz., **THREE** questions from **Section A**, and **TWO** questions from **Section D.**

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.
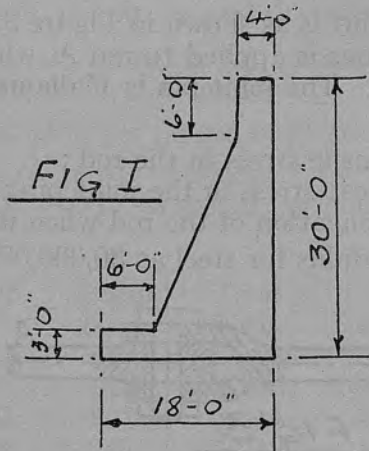
Section A (for all candidates)

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

1. Define *Centre of Gravity* and briefly describe how you would determine it experimentally for a thin plate of irregular shape.

A section of a masonry wall for a water reservoir is as shown in Figure 1.

Determine the centroid of the section.

FIG I

2. State the conditions that must exist in order that a body acted upon by three non-parallel co-planar forces may remain in equilibrium.

A trap door to a basement is as shown in Figure 2. It is hinged along one side and the rope by which it is raised passes over a pulley fixed to a ceiling joist. The door weighs 130 lb. and the centre of gravity may be taken at the centre of the door. When the door has been raised to an angle of 30° with the floor determine—

(a) the tension in the rope ;
(b) the magnitude and direction of the reaction on the hinge.

(Neglect the diameter of the pulley and the thickness of the door.)

FIG 2.
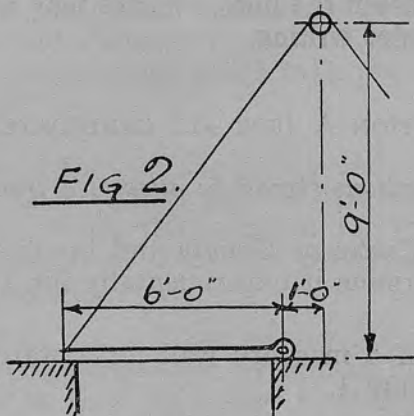
3. Define *Tensile Stress, Shear Stress, Young's Modulus of Elasticity.*
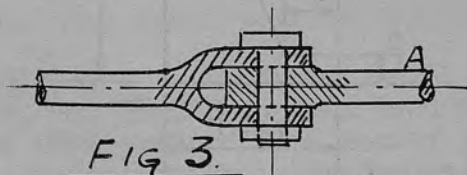
A knuckle joint is as shown in Figure 3.

A pull of 5 tons is applied to rod A, which is 8 ft. long and $1\frac{1}{2}''$ diameter. The joint pin is 1" diameter.

Determine—

(a) the tensile stress in the rod ;
(b) the shear stress in the joint pin ;
(c) the elongation of the rod when under load.

Take the Modulus for steel as 30,000,000 lb. per sq. in.

FIG 3.

4. Define *Work* and *Power*, stating the units used by the engineer.

A pulley 4 ft. diameter is being driven at 150 revs. per min. by a belt whose pull on the tight side is 850 lb. and on the slack side 220 lb.

Determine—

    (a) the torque exerted on the pulley ;

    (b) the horse power given to the pulley by the belt.

Section B (for Engineering candidates only)

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

5. Explain the term "*Superheat*" when applied to steam.

With the help of the data given below determine the following :—

    (a) the total heat in one pound of superheated steam at a pressure of 400 lb. per sq. in. and a temperature of 700° F. ;

    (b) the total heat in one pound of steam at a pressure of 50 lb. per sq. in. and dryness fraction 0·95.

If the steam at condition (a) expanded in an engine cylinder to condition (b), determine—

    (c) the heat drop per pound of steam ;

    (d) the horse power developed by the engine if it uses 25,000 lb. of steam per hour.

Data.

Pressure, lb. per sq. in.	Temp. °F.	Latent Heat.	Total Heat.	Total Heat at Superheat of 240° F.	280° F.
50	281	926	1,176	—	—
350	432	801	1,211	1,353	1,374
400	445	787	1,212	1,358	1,380

6. A boiler-house plant consists of a feed water heater, a boiler and a superheater. The feed water enters the heater at 105° F. and leaves at 390° F., at which temperature it enters the boiler. In the boiler, steam is generated at 350 lb. per sq. in. and 0·98 dry. The steam now passes to the superheater where its temperature is raised by 260° F. If 9 lb. of steam are generated for each pound of coal burned on the fire-grate, determine—

(a) the total heat of each pound of coal usefully used in generating steam ;

(b) the percentage of the heat of the coal that is utilized in the heater, boiler, and superheater, respectively.

Take the calorific value of the coal as 13,500 B.Th.U. per lb. and the steam values as given in question 5.

7. A motor-bus engine, working on the four-stroke cycle, has six cylinders, each 3·35 inch bore and 4·72 inch stroke. On a trial in the workshop the following results were obtained :—

B.H.P., 31 ; engine speed, 1,500 revs. per min. ;
M.E.P., 86 lb. per sq. in. ; petrol consumption, 1¾ gallons per hour.

Calculate—

(a) the indicated horse power ;

(b) the brake thermal efficiency of the engine.

(Petrol weighs 7·2 lb. to the gallon and has a calorific value of 19,000 B.Th.U. per lb.)

SECTION C (FOR ENGINEERING CANDIDATES ONLY)

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

8. Briefly describe the three different types of electric motor and mention the special kinds of work for which each is adapted.

What is the function of a motor starter ? Make a simple line sketch of any type of starter and mention the type.

9. A train of 250 tons weight is drawn at a uniform speed of 40 miles per hour by an electric locomotive of 50 tons weight. The resistances to motion amount to 15 lb. per ton ; the efficiency of the driving motors is 75 per cent.

Determine—

(a) the H.P. and K.W. rating of the motors ;

(b) the B.O.T. units consumed in an hour's run.

SECTION D (FOR TECHNICAL SUBJECTS CANDIDATES ONLY)

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

10. Show, using diagrams, how a known force may be resolved into two components.

A wireless mast with a series of stay wires is shown in Figure 4. The mast weighs 320 lb. and the tension in each wire is as indicated.

Determine—

(a) the vertical thrust on the base of the mast, using a graphical method ;
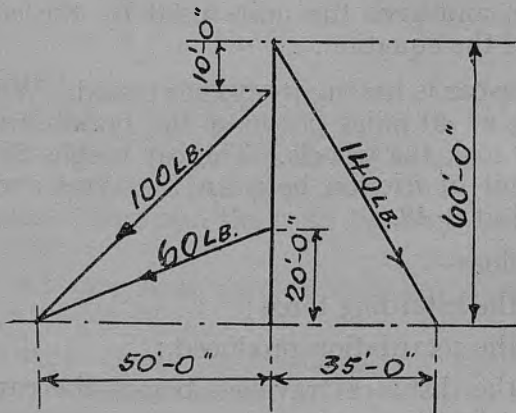
(b) the moment about the base of the mast.

FIG 4.

11. An outline of the transmission mechanism of a railway breakdown crane is shown in Figure 5. The drive is by a small steam engine and the maximum lift is 15 tons.

Determine—

    (a) the hoisting speed of the load when the speed of the driving pinion is 400 revs. per minute ;

    (b) the force exerted by the teeth of the driving pinion, assuming the efficiency of the whole gearing is 80 per cent. ;

    (c) the mechanical advantage of the crane from the driving pinion wheel to the hook.

DRUM 10" dia
8" dia
WHEEL 50" dia
LOAD 15 TONS.
FIG 5.
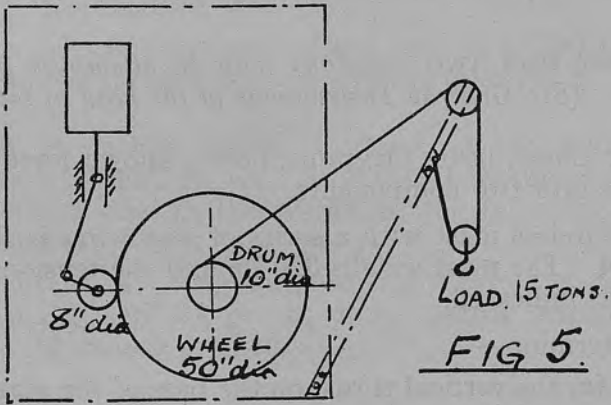
12. Give the equation connecting force, mass, and acceleration, and give the units used by the engineer for each term of the equation.

A motor-car is having its brakes tested. When the car is travelling at 40 miles per hour the brakes are suddenly applied and lock the wheels. The car weighs 25 cwt., and the coefficient of friction between the tyres and the road is estimated at 0·48.

Determine—

    (a) the retarding force ;

    (b) the retardation produced ;

    (c) the distance travelled before the car comes to rest ;

    (d) the time taken to come to rest.

13. A passenger lift in a hotel weighs, with its full load, 15 cwt., and has a maximum upward speed of 450 ft. per minute.

It attains this speed in four seconds starting from rest.

The distance from basement to top flat is 120 feet.

Determine—

    (a) the acceleration ;

    (b) the maximum H.P. of the hoisting motor. Neglect the friction of the guide bars ;

    (c) the distance travelled at the maximum upward speed, if a retardation of $2 \cdot 5$ feet per sec. per sec. is applied to stop the lift at the top flat.

SCIENCE

HIGHER GRADE—(TECHNICAL DRAWING)

Wednesday, 24th March—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 the component parts of a swivel shackle used for crane hooks and similar purposes, also an assembly view of the shackle.

Make a full-size drawing showing the various parts assembled together. The following views are to be drawn :—

    (a) an elevation, as shown in the assembly view, with the left-hand half in section through the vertical centre line, and the right-hand half as an outside view ;

    (b) an end view as an outside view but showing hidden parts dotted.

The drawings should be made in bold outline and the section lining in lighter outline. The title and scale should be neatly printed. No projection lines and no dimensions should be shown on the drawing.

Either

2. (*a*) Figure 2 shows a cast iron bracket.

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

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

Do not give dimensions.

(*b*) Figure 3 shows the conical connecting piece in an air ventilation system. A 2-foot diameter pipe joins the conical piece at right angles to its centre line as shown.

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

    (1) the elevation given ;

    (2) an end elevation to the right of the given view ;

    (3) a plan.

In views (2) and (3) show the curve of interpenetration of the 2-foot pipe and the conical piece. Show clearly all construction and projection lines.

Or

3. (*a*) Figure 4 shows a part of an ornamental iron gate.

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

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

Do not give dimensions.

(*b*) Figure 5 shows two views of the intersection of two semi-circular roofs of 30 feet and 20 feet radius, respectively.

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

    (1) the elevations given ;

    (2) a half plan showing the curve of interpenetration of the 20-foot roof with the 30-foot roof ;

    (3) a development of the lead covering for one end of the 20-foot roof.

TO BE DISTRIBUTED WITH THE

TECHNICAL DRAWING

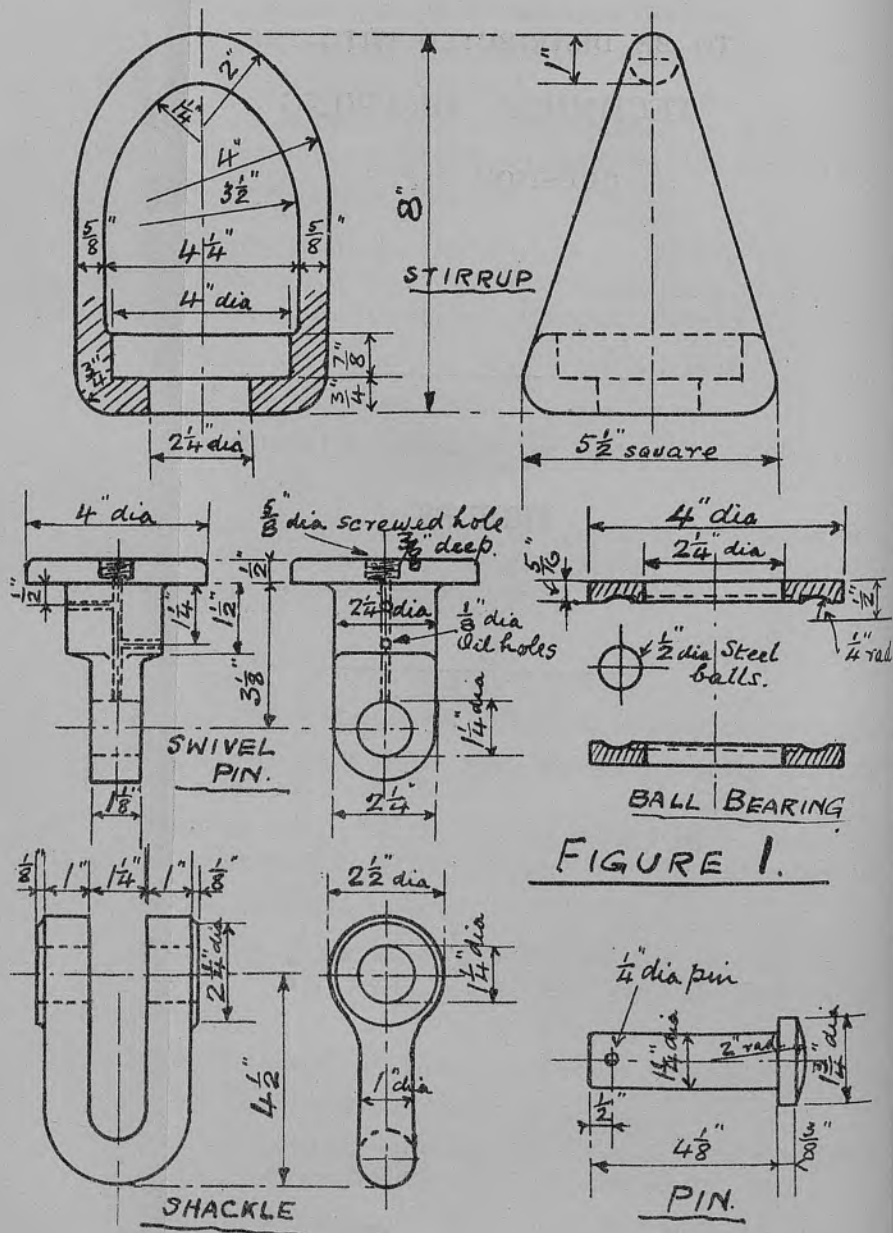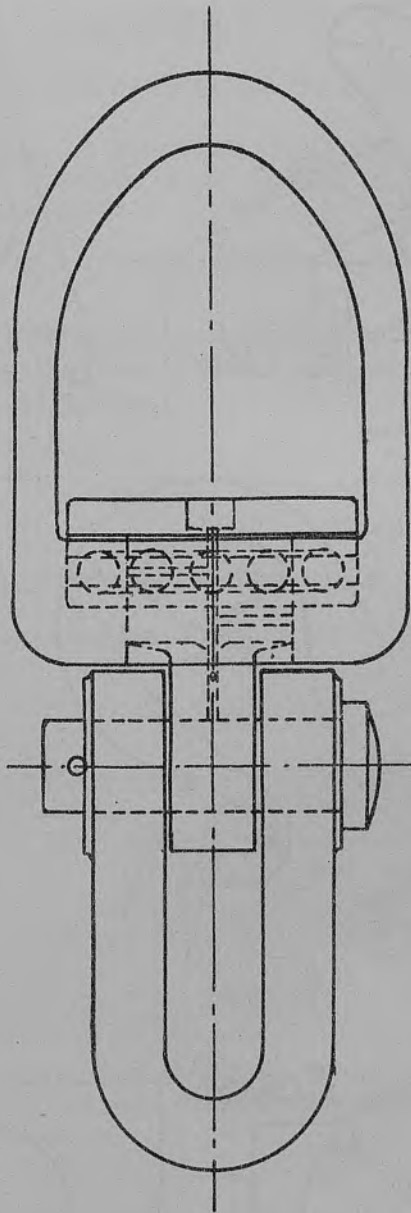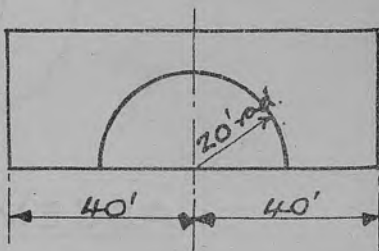## QUESTION PAPER

FIGURES

STIRRUP

$\frac{2}{}$" $\frac{1}{4}$" 4" $3\frac{1}{2}$" $\frac{5}{8}$" $\frac{5}{8}$" $4\frac{1}{4}$" 4" dia

8"

$\frac{7}{8}$" $3\frac{1}{4}$" $2\frac{1}{4}$ dia $5\frac{1}{2}$" square

4" dia $\frac{5}{8}$" dia screwed hole $\frac{3}{8}$" deep.

$\frac{1}{2}$" $\frac{1}{4}$" $\frac{1}{2}$" $3\frac{3}{8}$"

SWIVEL PIN.

$\frac{1}{8}$"

$2\frac{1}{4}$ dia $\frac{1}{8}$" dia Oil holes $1\frac{1}{4}$ dia $2\frac{1}{4}$"

$\frac{5}{16}$" 4" dia $2\frac{1}{4}$ dia $\frac{1}{2}$" dia Steel balls. $\frac{1}{4}$" rad

BALL BEARING

FIGURE 1.

SHACKLE

$\frac{1}{8}$" 1" $1\frac{1}{4}$" 1" $\frac{1}{8}$" $2\frac{1}{4}$ dia $4\frac{1}{2}$"

$2\frac{1}{2}$ dia $1\frac{1}{4}$ dia 1" dia

$\frac{1}{4}$" dia pin 2" rad $1\frac{1}{4}$ dia $\frac{1}{2}$" $4\frac{1}{8}$" $\frac{3}{4}$"

PIN.

FIGURE I (CONTINUED)

ASSEMBLY VIEW

FIG. 2.

FIG. 3.

FIG. 4.

FIG. 5.
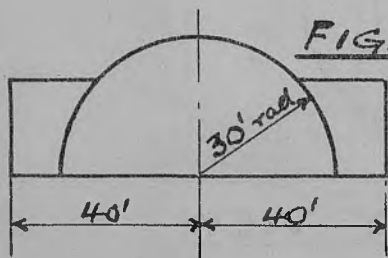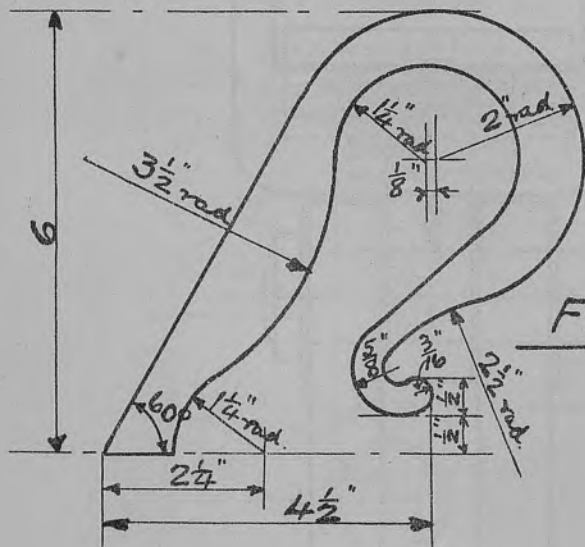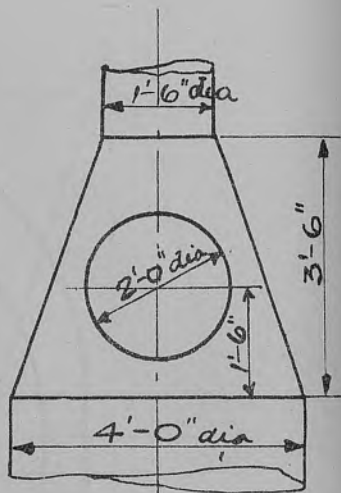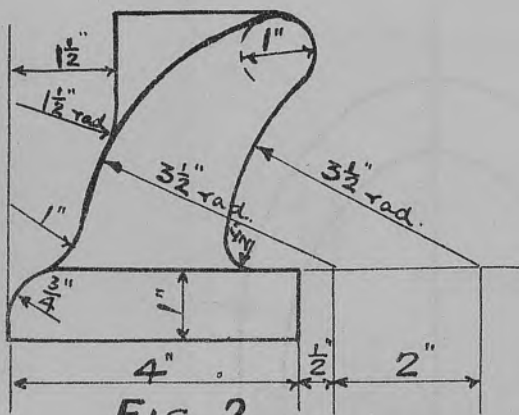
SCIENCE

Lower Grade—(Geography)

Wednesday, 17th 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) Show, without boundaries, the position of the counties of Somerset, Westmorland, Glamorgan and Kent.
   - (b) Mark and name the town at the mouth of each of the following rivers :—Tweed, Wear, Nith.
   - (c) Draw a bold line along the limestone escarpment of England. The hills which form the highest sections of the escarpment are known by distinctive names. Insert two of these names at the proper places.
   - (d) Insert carefully the East Coast and the West Coast railway routes from Edinburgh to London.
   - (e) Show by a dotted line the limits of the coal mining area in South Wales. Mark and name one great port of the area.
   - (f) Mark with an X and name two great east coast fishing ports.
   - (g) Write " coal " over the area from which the Potteries get their coal, and " china " over the area from which they get their china-clay. **(15)**

2. On the accompanying map of parts of N. and S. America, Europe and Africa—

(a) Name the Apennines, the Orinoco, the Niger, the Tagus, Cuba, the Caribbean Sea, Lake Huron, and Hudson Bay.

(b) Show, without boundaries, the position of Nova Scotia, Florida and Sierra Leone. Mark and name Bordeaux, Chicago, Lagos, New Orleans, Copenhagen and Quebec.

(c) Indicate by arrows the Trade Winds over the ocean in the Northern Hemisphere ; also write " Doldrums " in the appropriate place.

(d) Mark and name the Panama Canal and the Niagara Falls.

(e) Enclose with a heavily dotted line the American region specially famous for the growth of tobacco.

(f) Write " B " over each of the two localities from which most of the bananas used in this country are obtained.   (15)

3. The coasts of an island, each about four miles long, face north, east, south and west respectively. The ground rises steeply along the whole length of the western shore and forms in the west of the island a north-south ridge which culminates in two peaks. The higher of these, near the northern end of the ridge, is 420 feet high, and the lower, towards the southern end of the ridge, is 340 feet. The height of the saddle between the hills is 180 feet. A stream rises in each hill. These streams unite and flow over country that slopes gently eastwards to a broad bay in the eastern shore.

Draw a contour map of the island on the scale of 1 inch to 1 mile. The contour interval is 50 feet. (*Pencil may be used.*)   (10)

SECTION B

Two questions should be attempted from this Section.

4. Explain why the equatorial belt is extremely cloudy and why the tropical belts (the belts near the Tropics of Cancer and Capricorn) are noted for very clear weather. (15)

5. Select any nomadic people and show how the life and activities of that people are conditioned by the climate of the region. **(15)**

6. The longitude of Quito is 79° W. and of Singapore 104° E. Assuming that both towns are on the Equator and that the circumference of the earth is 25,000 miles, calculate (*a*) the time at Singapore when it is noon on Sunday at Quito, and (*b*) the shorter equatorial distance from Quito to Singapore. **(15)**

7. Illustrate, by reference to specific examples, the ways in which river action, by erosion and by deposition, modifies the surface of the land. **(15)**

8. Select two of the following rivers and discuss their value as navigable waterways :—

     Volga, Congo, Nile, Yenesei, Indus. **(15)**

9. Give a broad account of the chief geographical discoveries made during the fifteenth century. **(15)**

Section C

Two questions should be attempted from this Section.

10. Give a brief account of the structure and relief of Ireland, illustrating your answer by a sketch map. **(15)**

11. Write geographical notes on *two* of the following :—

(*a*) The manufacture of woollen goods in Scotland.

(*b*) The manufacture of paper in Scotland.

(*c*) Dairy-farming in Scotland.

(*d*) The value of the new road bridge across the Forth at Kincardine. Indicate the districts that will be helped. **(15)**

12. Select *three* of the following cities and show how far position explains their importance :—

     Milan, Rome, Marseilles, Prague, Cologne, Antwerp.

     Illustrate by sketch maps. **(15)**

13. Explain the great density of population of *either* the Ganges Plain *or* U.S.A. north-east of a line from Chicago to Washington. (15)

14. What are the broad geographical similarities and differences that may be observed when New Zealand is compared with Great Britain ? (15)

SCIENCE

HIGHER GRADE—(GEOGRAPHY)

Wednesday, 17th 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. After studying the map, answer the following :—

    (a) Describe briefly the chief types of land-form shown on the map.

    (b) Say precisely where there is (1) an escarpment, (2) a dry valley.

    (c) What evidence can be obtained from the map that human settlements frequently grow up along the lines of contact of different geographical regions ? Add what explanations you can.

    (d) Comment upon the position and direction of growth of Lewes.

    (e) Can you suggest from the evidence of the map or from independent knowledge why there are no woodlands in the southern half of the map ? (36)

SECTION B

Two questions should be attempted from this Section.

2. What are the conditions which favour the formation of river-deltas ?

State (*a*) the factors which promote and (*b*) the factors which hinder the development of great ports on the deltas of great rivers.

Illustrate by examples the various points which you mention in your answer.   **(16)**

3. Describe carefully and account for the seasonal variations of temperature and rainfall at *two* of the following places:—Bombay, Valparaiso, Moscow, Edinburgh.   **(16)**

4. " Industries are usually established where geographical conditions favour their success. They tend to persist even after these conditions become relatively less favourable." Why should this be so ? Illustrate your answer by making references to Great Britain or to European countries.   **(16)**

5. Describe, broadly and briefly, how the animals of the coniferous and of the equatorial forests are suited to their environment.   **(16)**

6. From the differences in their physical environment and modes of life deduce reasons for the constant rivalry between hill-dwellers and dwellers in the fertile plains. Illustrate the points mentioned in your answer by reference to actual peoples.   **(16)**

7. From a consideration of the sites of European capitals state what seem to be the essential geographical conditions that determine the site of a capital city. **(16)**

SECTION C

Two questions should be attempted from this Section.

8. Describe *either* Wales *or* the Southern Uplands of Scotland with reference to (*a*) the physical features of the region, (*b*) its main lines of communication.   **(16)**

9. What, in your view, are the major natural regions of France *or* Brazil *or* India ?   Give your reasons for the divisions which you suggest.   Illustrate your answer by a sketch-map.   **(16)**

10. Compare the physical features, climate, and native populations of Kenya and tropical Australia, and hence show that the former country is better suited to European settlement than the latter.   **(16)**

11. What are the characteristic features *either* of Chinese *or* of Egyptian agriculture ?   **(16)**

12. Describe briefly the physical geography of *two* of the following regions of North America :—the Laurentian Shield, the Appalachians, the Great Basin.   **(16)**

13. Describe briefly the contributions to geographical knowledge which resulted *either* from the search for the North-West Passage *or* from Antarctic exploration.   **(16)**

SCIENCE

Higher Grade—(Physics)

Wednesday, 17th March—1.0 P.M to 3..30 P.M.

Not more than SIX questions should be attempted.   Two, but not more than two, of these must be taken from Section I (Mechanics), and the remainder from not less than two other Sections.

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

16 *marks are assigned to each question in Section I, and* 17 *to each question in Sections II, III and IV.*

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)

Two, *but not more than two, questions from this Section must be attempted.*

1. A body may be in equilibrium under the action of
    (*a*) two forces ;
    (*b*) three parallel forces ;
    (*c*) three non-parallel forces.

State fully the conditions required to ensure equilibrium in each case.

How would you verify your statement experimentally in **either** (*b*) **or** (*c*) ?

2. Distinguish clearly between the terms *pound, pound-weight,* and *poundal.*

State the relation between the acceleration produced on a moving body and the force causing the acceleration, and describe a laboratory experiment by which you could verify your statement.

A given body was caused to move from rest under the action of a known motive force, and the distance travelled from rest and the time taken were noted. The following table is a record of the results obtained when different motive forces acted on the given body :—

Motive force.	Distance travelled from rest.	Time.
5 gm. wt.	20 cm.	4 sec.
10 gm. wt.	22·5 cm.	3 sec.
15 gm. wt.	33·75 cm.	3 sec.
20 gm. wt.	20 cm.	2 sec.
25 gm. wt.	25 cm.	2 sec.

Use these results to verify the relation stated above and calculate the mass of the body used in the experiment.

3. Explain the terms *coefficient of friction* and *angle of friction,* and prove the relation between these two quantities.

How would you verify the relation experimentally ? A weight of 10 lb. resting on a plane just begins to slip when the plane is inclined at 30° to the horizontal. Find

(C 25386)   F 3

the least force which must be applied parallel to the plane to prevent the weight from slipping when the plane is inclined at 40° to the horizontal.

4. What is a simple pendulum ?

How is its period affected by (a) the length, (b) the weight of the bob, (c) the amplitude of the swing ? Describe the experiment which you would carry out to illustrate your answer to (a) above, emphasising the details to which you would pay special attention. How many complete oscillations will be made in 24 hours by a pendulum 39 inches long in a place where the value of " g " is 32·2 ft. per sec. per sec. ? Will a clock using this as a seconds pendulum gain or lose, and by what time in 24 hours ?

SECTION II (HEAT AND HYDROSTATICS)

5. Define boiling point. Distinguish carefully between boiling and evaporation.

Detail the experimental procedure you would adopt to arrive at a graph of the relation between the boiling point of water and the pressure on its surface. Your experiment should enable you to take readings above and below 100° C.

6. Define *specific heat* and *latent heat*.

Describe the experiment by which you could find the specific heat of sulphur, explaining fully any points in which the experiment would differ from one performed to find the specific heat of a metal.

40 gm. of molten sulphur at its melting point, 115° C., were transferred to 50 gm. of water at 8° C. in a copper calorimeter weighing 50 gm. The temperature of the mixture was 26·5° C. Find the latent heat of fusion of sulphur. (Specific heat of sulphur = 0·18, and of copper = 0·1.)

7. What do you understand by the relative humidity of the atmosphere ? What natural conditions (a) increase, (b) decrease, relative humidity ?

Describe and explain an experiment by which you could determine *one* of the following :—

      (a) the dew point ;
      (b) the weight of water vapour in a measured
            volume of air.

Explain how your result would be used to determine the relative humidity of the air in the laboratory.

8. Explain fully the principle of the siphon, and mention three conditions that must be fulfilled before mercury can be siphoned from a point A to a point C over an intervening obstacle B.

Outline briefly the experiments you would perform to illustrate your answer.

The difference between the pressures of the water supply at two different levels in a building is 12·5 lb. per sq. in. How high is one level above the other ? (1 cu. ft. of water weighs 62·5 lb.)

SECTION III (SOUND AND LIGHT)

9. Describe clearly what takes place in a cylindrical glass jar when a sounding tuning fork is held near its mouth and water is slowly run into the jar.

Show how the experiment could be used to find the frequency of a given tuning fork, and illustrate the answer by a diagram showing the state of the air in the jar when the required amount of water has been added, and the sounding tuning fork is held near its mouth.

In an experiment in which a glass jar, 3 cm. in diameter, was used, the length of the air column above the water in the jar was 30 cm. Find the frequency of the fork. (Velocity of sound in air = 334 metres per second.)

10. Write notes to show how the velocity of sound in air is affected, if at all, by changes in :—(a) temperature, (b) pressure, (c) humidity. Interpret the formula

$$V = \sqrt{\frac{1 \cdot 41\ P}{D}}$$

and use it to determine V, the velocity of sound in air, given that the barometric height is 76 cm. of mercury (s.g. 13·6) and the density of air is 1·22 gm. per litre.

11. Describe one method by which the velocity of light has been determined, and state its value either in km. per sec. or in miles per sec.

How is the velocity of light affected when it passes from one transparent medium to another ? Mention and explain one natural phenomenon depending on this.

The passage of a ray of light was traced through a glass block 5 cm. wide. The angle of incidence was 45° and the lateral displacement of the ray on emerging was 1·7 cm. Make a full-size drawing to illustrate the experiment and use it to compare the velocity of light in air with its velocity in glass.

12. Write a brief note on two forms of photometer in common use. Explain carefully the principle on which their action depends.

Detail an experiment by which you could discover by how much the illuminating power of a small electric lamp had deteriorated after 500 hours' use.

In an experiment the illumination given by a new lamp at a distance of 50 cm. equalled that given by the standard lamp at 35 cm., while with a used lamp the respective distances were 50 cm. and 40 cm. Calculate the percentage loss of illuminating power.

SECTION IV (MAGNETISM AND ELECTRICITY)

13. Define *unit magnetic pole.*

Deduce from first principles the relation between the magnetic field due to a *short* bar magnet at a point on the line of its axis and the distance of this point from the centre of the magnet.

Detail the experiment you would carry out to verify your deduction.

14. Describe any form of voltmeter with which you are acquainted, and explain its action clearly.

A voltmeter, when connected to the terminals of a cell, reads 1·40 volts. When the cell is connected through a coil of resistance 5 ohms, the voltmeter and coil being in parallel, the reading on the voltmeter is 1·20 volts. Find the resistance of the cell.

15. State Ohm's Law and define all the terms used. Apply this law to explain fully the use of a Wheatstone (metre) bridge in determining the resistance of a given wire.

On what factors does the resistance of a wire depend? Detail the experiment you would carry out to illustrate the effect of varying the diameter of the wire.

16. State Faraday's laws of electrolysis, and describe *briefly* the experiments you would carry out to verify these laws.

Explain the statement that the electrochemical equivalent of hydrogen is 0·0000104, and calculate the weight of copper that would be deposited by a current of 0·5 ampère in 20 minutes. (Chemical equivalent of copper is 31·5.)

SCIENCE

HIGHER GRADE—(PURE ZOOLOGY)

Friday, 19th 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. What are the main characters (*a*) that distinguish living from non-living things, and (*b*) that distinguish animals from plants ?

2. Sketch and describe Amoeba and Hydra and direct attention to the important differences between them.

3. Write an account of **either** :—

(*a*) the life history of the salmon ;

Or (*b*) the life history of a migratory bird, stating why it is necessary for a bird like the swallow to leave this country in the autumn.

4. Give a drawing and a description of the alimentary canal of the earthworm. How is the waste matter removed from the body in this animal ?

5. Give a description of the external features of **either** :—

(*a*) a butterfly ; **or** (*b*) a honey-bee.

In what ways are insects injurious to crops ? (Mention examples where you can.)

6. Write notes on the function of any *four* of the following organs :—

liver,
mammary glands,
kidney,
stomach,
tympanic membrane,

and in each of the four chosen describe the position of the organ in an animal you have dissected.

7. Name four animals belonging each to a different phylum (group) which you might expect to find **either** (*a*) on the seashore ; **or** (*b*) in a wood. State the principal characters of the phylum to which each of them belongs.

SCIENCE

HIGHER GRADE—(ZOOLOGY AND HUMAN PHYSIOLOGY)

Friday, 19th 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. What are the main characters (*a*) that distinguish living from non-living things, and (*b*) that distinguish animals from plants ?

2. Sketch and describe Amoeba and Hydra and direct attention to the important differences between them.

3. Write an account of **either** :—

(*a*) the life history of the salmon ;

Or (*b*) the life history of a migratory bird, stating why it is necessary for a bird like the swallow to leave this country in the autumn.

4. Give a drawing and a description of the alimentary canal of the earthworm.   How is the waste matter removed from the body in this animal ?

SECTION II—HUMAN PHYSIOLOGY

5. Describe the position of the heart.   Give an account of its structure and mode of action.   Make a diagrammatic sketch to illustrate your answer.

6. Describe the manner in which air is taken into the human lungs and contrast it with the breathing mechanism of a frog.   Why is breathing necessary and why is the proper ventilation of buildings essential ?

7. **Either** (*a*) Name the three main groups into which the constituents of our food-stuffs are classified.   Give examples of some of their common sources of supply and state how they are assimilated into the body.

Or (*b*) What are the main parts of the nervous system and what rôle does this system play in our life ?

MUSIC

LOWER GRADE

Friday, 19th 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*) In what key is the following melody ?   Add the key-signature which would render the majority of the accidentals unnecessary.

(*b*) Transpose the above melody a perfect fifth above and write the transposition in the Treble Clef, adding the new key-signature.
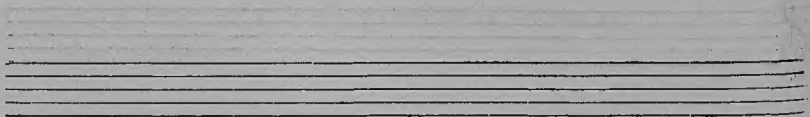
(*c*) Write the Solfa symbols above each note of this melody, with octave marks where necessary ; *or* give in sequence in the blank space the technical name of each note of the melody (Tonic, Dominant, etc.).
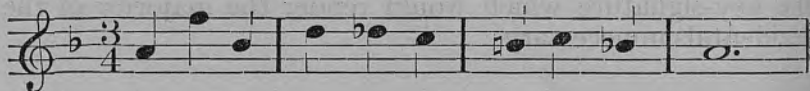
(*d*) Name or write any two consecutive notes appearing in the melody in Question 1(*c*) above which form—

        (1) A minor third ;
        (2) A perfect fifth ;
        (3) A major sixth ;
        (4) A perfect fourth.

(14)
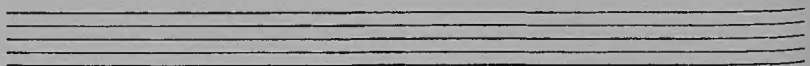
2. Name three Folk or National melodies, indicating the country of their origin. From these three choose the one which you consider likely to be least familiar to most people. Write the selected melody (complete) in a key suitable for community singing. **(16)**
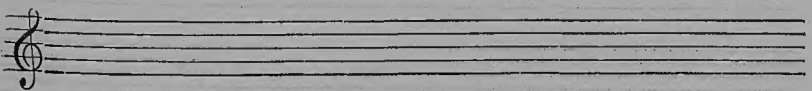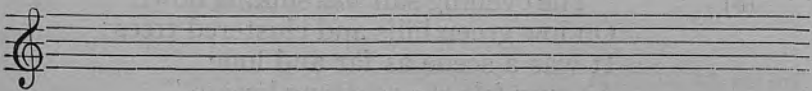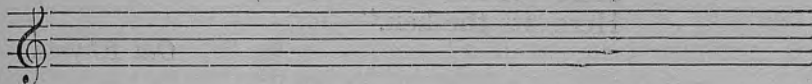
3. Write a melody in Staff Notation suitable to and expressive of the poetic rhythms of the following lines. Key-signatures, bar-lines and musical terms indicating the " pace " or " speed " of the music *must* be added and each syllable placed under the note or notes to which it is intended to be sung.
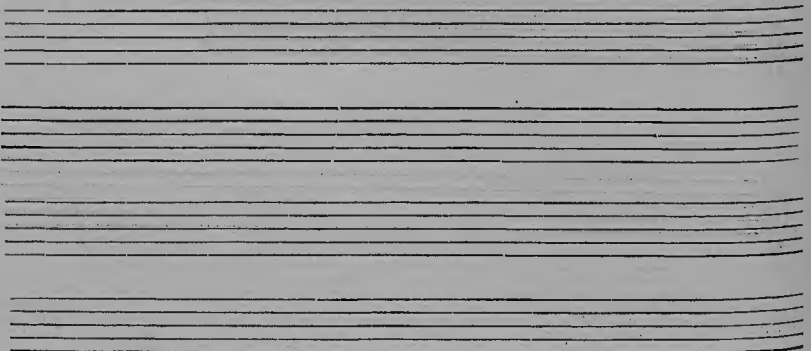
(*a*)   " Here sits the Lord Mayor ;
            Here sit his men ;
            Here sits the cockadoodle ;
            Here sits the hen."

Old Rhyme.
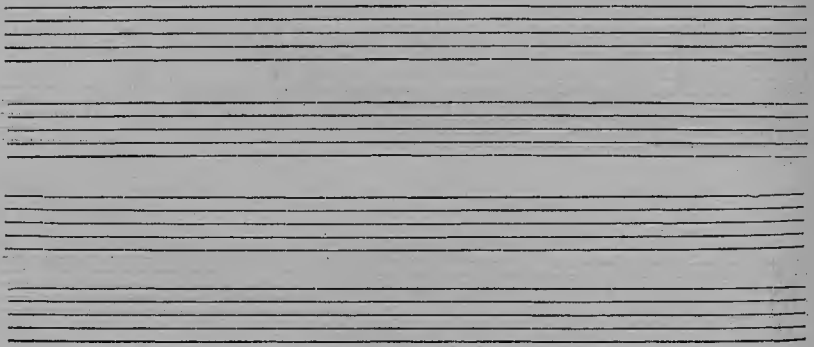
(*b*)   " The evening sun was sinking down
            On low green hills and clustered trees ;
            It was a scene as far and lone
            As ever felt the soothing breeze."

Emily Brontë.

SECTION II

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

4. Choose *two* of the following works ; describe each briefly, naming the composer and indicating either by dates or by reference to contemporary composers, writers, painters or events, the period at which he lived, and quoting, if possible, a theme from *one* of the works you select :—

The Creation, Tannhaüser, Marriage of Figaro, Peer Gynt Suite, Erlking, " Moonlight " Sonata. **(10)**

5. Under what circumstances would a composer use any *five* of the following terms ?—

Accelerando, Metronome 60, Andante con moto, A capella, Scherzando, Poco a poco diminuendo, Trio, Quartet. **(10)**

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

Allegro.

Allegretto.

B

Allegretto.

C

etc.

Vivace.

D

etc.

Moderato.

E

Allegro moderato.

Allegro con spirito.

Andante doloroso.

Tempo di Valse.

Andante con moto.

etc.

Allegretto.

etc.

MUSIC

HIGHER GRADE

Friday, 19th 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*) Harmonise this melody in four vocal parts for Soprano, Alto, Tenor, and Bass :—

(*b*) What keys does this section of melody suggest to you? Answer this question in the blank space below the melody— *not* in the examination book supplied for Sections II and III of the paper.

(20)

2. **Either** (*a*) Harmonise this figured bass in four parts in short score.   Introduce contrary motion between the treble and bass parts as frequently as possible.

Or (*b*) Add a melodious Bass to this melody :—

3. Either (*a*) Commencing with the given bars, continue and complete this melody in not less than sixteen bars :—

Tempo di Menuetto.
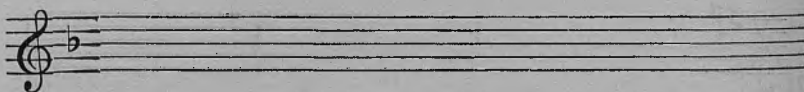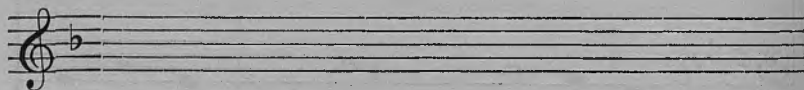
Or (*b*) Write a melody in Staff notation suitable to the poetic rhythm and atmosphere of *either* of the following verses. A key-signature, time-signature and bar-lines must be added, and a musical term to indicate the tempo. Place each syllable under the note or notes to which the melody is to be sung.

> " Now the furnaces are out,
> And the aching anvils sleep ;
> Down the road the grimy rout
> Tramples homeward, twenty deep.
> Piper play ! Piper play !
> Though we be o'erlaboured men,
> Ripe for rest, pipe your best !
> Let us foot it, once again ! "

John Davidson.

Alternatively :—

      " Buy my English posies !
      Here's to match your need—
      Buy a tuft of royal heath,
      Buy a bunch of weed
      White as sand of Muisenberg
      Spun before the gale—
      Buy my heath and lilies
      And I'll tell you whence you hail ! "

Rudyard Kipling.

(20)

SECTION II

Only ONE *question from this Section should be attempted.*

4. What is meant by the term " subject " in musical form ?   Illustrate your explanation with references to some particular work, either a fugue or a work in sonata form.
(15)

5. State to which sections of the orchestra the following instruments belong.   Describe *two* of the instruments briefly and refer to any orchestral work in which they play a solo or other important part :—

Clarinet, castanets, trumpet, cor anglais, French horn, violoncello.   (15)

SECTION III

Only ONE *question from this Section should be attempted.*

6. What is meant by " chamber music " ?   Name two composers who have distinguished themselves in this branch of composition and give some account of their achievements in it, mentioning any particular combination or combinations of instruments favoured by them.   Quote a theme from *one* chamber work, naming the work and the composer.
(15)

7. Out of the following list choose two pairs of composers in each of which pairs one composer has been strongly influenced musically by the other.   Give reasons for your choice :—
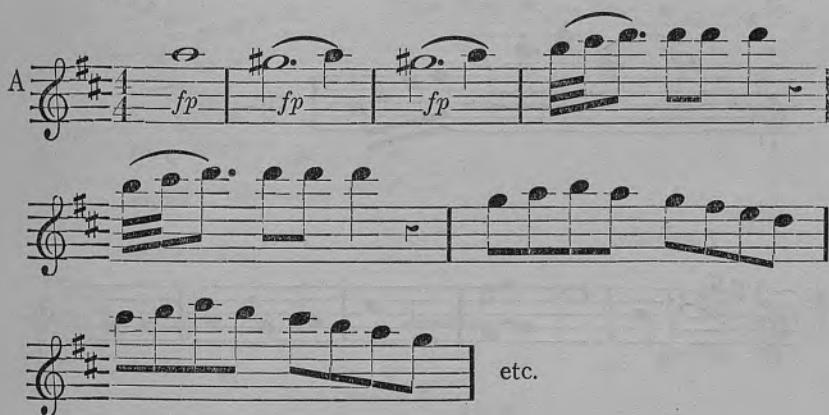
Beethoven, Handel, Wagner, Mendelssohn, Richard Strauss, Mozart, Sullivan, Brahms.
(15)

8. 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)**

Presto.
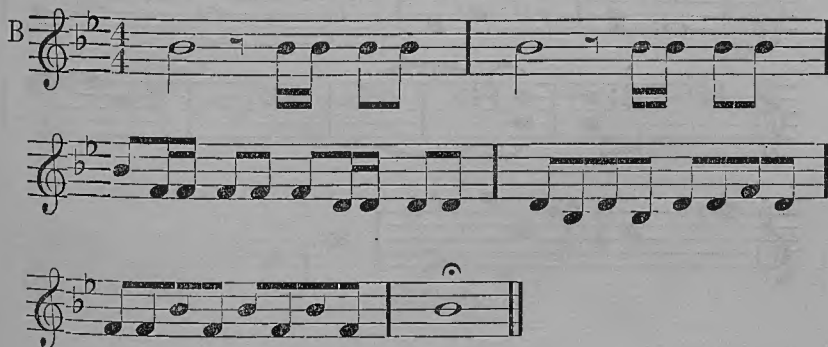
etc.
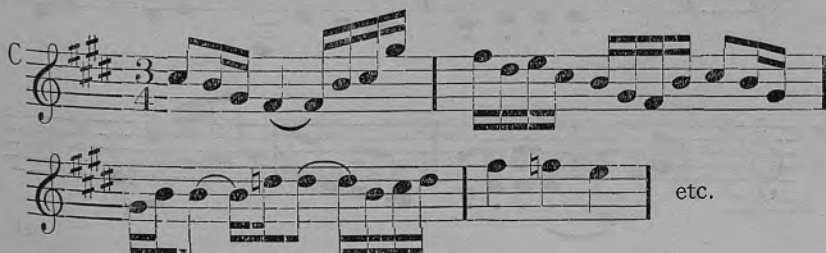
Allegro (played by a solo trumpet off stage).

Doux et expressif (played by a solo oboe).

etc.

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 Institute of Cost and Works Accountants.
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.
*The Chartered Society of Massage and Medical Gymnastics.

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* See footnote on page 129.

SCOTTISH EDUCATION DEPARTMENT

1937

PUBLICATIONS OF THE DEPARTMENT

The following is a List of some of the more important Official Publications of the Department. They cannot be purchased from this Office, but may be obtained, either directly from HIS MAJESTY'S STATIONERY OFFICE (Scottish Branch), 120, George Street, Edinburgh 2, or through any Bookseller.

Reports, etc., 1935–36. Price 10s. ; post free, 10s. 6d. *This Volume contains Reports, Statistics, Regulations, Minutes, Circulars, Leaving Certificate Examination Papers, etc.*

Report of the Committee of Council on Education in Scotland, 1936. (Cmd. 5428.) Price 1s. 3d. ; post free, 1s. 4d.

Sixty-fourth Annual Report by the Accountant (Accounts for the Year 1935–36). Price 6d. ; post free, 7d.

General Reports for the Years 1930–33 on Education in Scotland, by His Majesty's Chief Inspectors of Schools. Price 2s. ; post free, 2s. 2d.

Report and Statistics relating to the Training of Teachers, 1928–30. Price 9d. ; post free, 10d.

Statistical Lists of Grant-earning Day Schools and Institutions, and of Continuation Classes and Central Institutions, for the Year 1934–35. Price 2s. ; post free, 2s. 2d.

Statistics in respect of Education Areas, for the Year 1935–36. Price 4d. ; post free, 5d.

Lists of Education Authorities, Secondary Schools, etc., with names and addresses of correspondents, 1936. Price 6d. ; post free, 7d.

Circular 96 (Administrative Programme of Educational Development.) (January, 1936.) Price 2d. ; post free, 2½d.

Circular 97 (School Broadcasting). (January, 1936.) Price 1d. ; post free, 1½d.

Circular 98 (Physical Health and Physical Well-being). (March, 1936.) Price 2d. ; post free, 2½d.

Circular 99 (Provisions of the Education (Scotland) Act, 1936). (July, 1936.) Price 1d. ; post free, 1½d.

Circular 100 (Technical Education in Continuation Classes). (August, 1936.) Price 2d. ; post free, 2½d.

Circular 101 (Appends Order of 10th August, 1936, fixing Appointed Day.) (August, 1936.) Price 1d. ; post free, 1½d.

Circular 103 (Schemes for the Provision of Education). (December, 1936.) Price 1d. ; post free, 1½d.

Circular 104 (School Population in Scotland). (March, 1937.) Price 2d. ; post free, 2½d.

Secondary Schools (Scotland) Regulations, 1923. S.R. & O., 1923, No. 929, S. 59. Price 2d. ; post free, 2½d.

Code of Regulations for Day Schools in Scotland. S.R. & O., 1923, No. 928, S. 58, as amended by S.R. & O., 1928, No. 329, S. 19, and by S.R. & O., 1933, No. 466, S. 25. Price 4d. ; post free, 5d.

Code of Regulations for Continuation Classes, 1936. S.R. & O., 1936, No. 791, S. 28. Price 5d. ; post free, 6d.

Adult Education (Scotland) Regulations, 1934. S.R. & O., 1934, No. 1343, S. 72. Price 2d. ; post free, 2½d.

Regulations for the Preliminary Education, Training, and Certification of Teachers for Various Grades of Schools, 1931. S.R. & O., 1931, No. 180, S. 20. Price 5d. ; post free, 6d.

Leaving Certificate Examination Papers, including Day School Certificate (Higher) General Paper, 1936. Price 2s. 6d. ; post free, 2s. 8d.

Circular 30, relating to the Leaving Certificate Examination of 1936. (September, 1935.) 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.

Circular 94 (Day School Certificate (Higher) : Conditions of issue.) (December, 1934.) Price 1d. ; post free, 1½d.

Circular 95 (Award of Day School Certificate (Higher) to Leaving Certificate failures). (December, 1935.) Price 1d. ; post free, 1½d.

Circular 63 (Conditions of the award of Day School Certificates (Lower)). (January, 1924.) Price 1d. ; post free, 1½d. (See also Circulars 73 and 88.)

Circular 73 (Day School Certificate (Lower) ; Amending conditions of award of). (January, 1927.) Price 1d. ; post free, 1½d.

Circular 88 (Day School Certificate (Lower) ; alteration of procedure for issuing certificate). (December, 1932.) Price 1d. ; post free, 1½d.

Superannuation Scheme for Teachers (Scotland), 1926. S.R. & O., 1926, No. 363, S. 13, as amended by S.R. & O., 1928, No. 1044, S. 55, S.R. & O., 1929, No. 1179, S. 76, S.R. & O., 1932, No. 1073, S. 54, S.R. & O., 1933, No. 1169, S. 67 and S.R. & O., 1936, No. 715, S. 23. Price 4d. ; post free, 5d.

Teachers' Superannuation Rules (Scotland), 1926. S.R. & O., 1926, No. 356, S. 9. Price 3d. ; post free, 3½d.

Teachers' Superannuation Rules (Scotland), 1926—Amendment of 1929. S.R. & O., 1929, No. 997, S. 69. Price 1d. ; post free, 1½d.

Education (Scotland) Teachers' Superannuation Grant Regulations, 1928. S.R. & O., 1928, No. 951, S. 49. Price 1d. ; post free, 1½d.

Conditions as to Minimum National Scales of Salaries for Teachers in Scotland, 1935. S.R. & O., 1935, No. 568, S. 25. Price 2d. ; post free, 2¼d.

Education Authorities (Scotland) Grant Regulations, 1936. S.R. & O., 1936, No. 825, S. 31. Price 1d. ; post free, 1½d.

Education (Scotland) Grant Amendment (Rescinding) Regulations, 1935. S.R. & O., 1935, No. 792, S. 38. Price 1d. ; post free, 1½d.

Central Institutions (Scotland) Grant Regulations, 1923. S.R. & O., 1923, No. 927, S. 57. Price 1d. ; post free, 1½d.

Education (Scotland) Miscellaneous Grants Regulations, 1925. S.R. & O., 1925, No. 882, S. 62. Price 2d. ; post free, 2½d.

Recommendations to be followed in the Planning and Fitting Up of Schools, 1925. (Reprinted 1931.) Price 6d. ; post free, 7d.

List of Approved Schools, 1933. Price 2d. ; post free, 2½d.

Children and Young Persons (Scotland) Care and Training Regulations, 1933. S.R. & O., 1933, No. 1006, S. 55. Price 4d. ; post free, 5d.

Circular 79 (Draws attention of Education Authorities to recommendations of Committees on Sexual Offences and Young Offenders). (January, 1929.) Price 1d. ; post free, 1½d.

Circular 80 (Draws attention of Managers of Certified Schools to recommendations of Committees on Sexual Offences and Young Offenders). (January, 1929.) Price 1d. ; post free, 1½d.

Circular 83 (Advisory Committees for Juvenile Employment). (October, 1930.) Price 1d. ; post free, 1½d.

M.4. (1936).—Educational Appointments Overseas. Price 2d. ; post free, 2½d.

LEAVING CERTIFICATE EXAMINATION, 1937

SCIENCE.
LOWER GRADE—(GEOGRAPHY).

MAPS.

Name of School..

Name of Pupil..

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

[OVER,

6   4   2   0   2

56

54

52

50

1400/37.

English Miles

0 10 20 30 40 50 60

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Projection: Conical.

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LEAVING CERTIFICATE EXAMINATION, 1937

SCIENCE
HIGHER GRADE—(GEOGRAPHY)

MAP

FILL THIS IN FIRST

Name of School _____

Name of Pupil _____

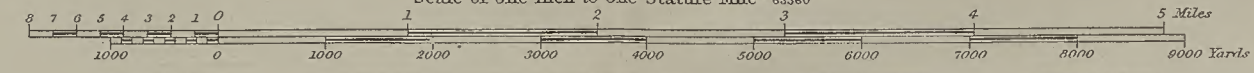TO BE PINNED INSIDE THE CANDIDATE'S BOOK OF ANSWERS
AND THUS SENT TO THE DEPARTMENT.

[OVER

C   C

Streat   East Chiltington   Chillington   Barcombe

Middleton   Plumpton Mill   Beechwood   Conybore

Novington Manor   Warningore Wood   Avery's Fm   Upper Wellingham   Broyle Side

Wales Fm   Allington Ho.   Cowlease Fm   Wellingham Ho.   Norlington

Plumpton Place   Novington Fm   Hansey   Park Gate   Park Ho.   Lower Lodge

D   D

Streathill Fm   Plumpton Plain   Blackcap   Mount Harry   Offham   Ringmer   Rushy Green   Ashton Green

Horseshoe Plant.   Ashcombe Bottom   Offham Hill   Hamsey   Ryderswells   Middleham   Goat Fm

Mary Fm   Buckland Bank   Grand Stand   Battle 1264   Old Malling Fm   Malling Ho.   Oldhouse Fm   Walslands

Balmer Down   Floods Barn   South Malling   Cliffe Hill   Golf Course   Glyndebourne

Ridge Fm   Balmer   Bunkershill Plantation   Ashcombe Ho.   LEWES   Saxon Down   The Lady's

Old Forge Barn   Housedean Fm   Long Hill   Houndean Bottom   Old Windmill   Priory   Glynde

Southern Railway   Falmer   New Barn   Old Windmill   Southerham   Mount Caburn   Camp

H   Moulsecoomb   Loose Bottom   Kingston Hollow   Spring Barn   Rise Fm   The Brooks   Rise Barn   Ranscombe Fm   Trevor Gardens   Beddingham

E   E

Falmer Hill   Newmarket Hill   Kingston near Lewes   Swanborough   Cobbe Place   Little Dene   Preston Court   West Firle

Upper Bevendean   Newmarket   Castle Hill   Iford   The Furlongs   Newelm   The Ley

Heath Hill Fm   Industrial Schools   Wick Fm   Bird Brow   Bullock Hill   Northease Fm   Front Hill   Rodmell   Asham Ho.   Beddingham Hill   White Lion Pond   Red Lion Pond

Racehill Fm   Balsdean   Mill Hill   Iford Fm   Iford Hill   Blackcap Fm

F   F

Mount Pleasant   The Bostle   Whiteway Bottom   Southease   Well Bottom   Blackcap Hill

Woodingdean   Harvey's Cross   Snaky Bottom   Fore Hill   Durham Fm   Fore Hill

Red Hill   Pickersfield   High Hill   Highdole Hill   Southease Hill   Deans   Tarring Neville   Height Garden Hill

Ovingdean   St Mary's Home   Loose Barn   Telscombe   Bullock Down   Piddinghoe   South Heighton

Beacon Hill   Old Windmill   Newlands Barn   Halcombe Fm   Lodge Hill   Nore Down   Denton   Norton

Rottingdean   Saltdean Cottages   The Warren   Heathy Brow   Hoddern Fm   Cemetery

G   G

Telscombe Cliffs   Hoddern   Peacehaven   NEWHAVEN   Rookery Hill

Friars Bay   New Barn   Hill Barn   Lifeboat Stn   BISHOPSTONE   Wireless Tel. Stn

1725/37.   Ordnance Survey, 1937.

Scale of One Inch to One Statute Mile = 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

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