

GEB. 16.



SECONDARY EDUCATION  
(SCOTLAND)

LEAVING CERTIFICATE  
EXAMINATION

(INCLUDING DAY SCHOOL CERTIFICATE  
(HIGHER) GENERAL PAPER)

EXAMINATION PAPERS

1934

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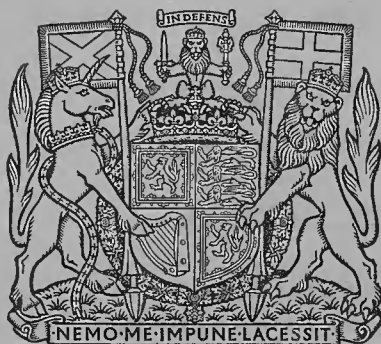
Teachers' Superannuation Rules (Scotland), 1926—Amendment of, 1929. S.R. & O., 1929, No. 997, S. 69. Price 1*d.*; post free, 1½*d.*

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Children and Young Persons (Scotland) Care and Training Regulations, 1933. S.R. & O., 1933, No. 1006, S. 55. Price 4*d.*; by post, 5*d.*



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(INCLUDING DAY SCHOOL CERTIFICATE  
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List of Authorities by whom evidence of success at the  
Leaving Certificate Examination is conditionally accepted  
in lieu of Preliminary Examinations - - - - -

## 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 1934 it commenced on Monday, 19th 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 No. 30, dated 12th September, 1933. (Price 4*d.* ; post free 5*d.*)

## EXAMINATION PAPERS

1934

DAY SCHOOL CERTIFICATE (HIGHER)  
GENERAL PAPER

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

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

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

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

- (a) A keenly contested game.
- (b) Cats and their habits.
- (c) Harvest-time at a farm.
- (d) A hunt for hidden treasure.
- (e) A scene at a busy street-corner.
- (f) A character from history or fiction.

(30)

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

*A Water-party.*

Let us, as by this verdant bank we float,  
 Search down the marge to find some shady pool  
 Where we may rest awhile and moor our boat,  
 And bathe our tired limbs in the waters cool.  
     Beneath the noonday sun,  
     Swiftly, O river, run !

Here is a mirror for Narcissus, see !  
 I cannot sound it, plumbing with my oar.

9 Lay the stern in beneath this bowering tree !  
 Now, stepping on this stump, we are ashore.  
     Guard, Hamadryades,<sup>(1)</sup>

12      Our clothes laid by your trees !

How the birds warble in the woods ! I pick  
 The waxen lilies, diving to the root.  
 But swim not far in the stream, the weeds grow thick,  
 And hot on the bare head the sunbeams shoot.

    Until our sport be done,  
     O merry birds, sing on !

19 If but to-night the sky be clear, the moon  
 Will serve us well, for she is near the full.  
 We shall row safely home ; only too soon—  
 So pleasant 'tis, whether we float or pull.  
     To guide us through the night,  
     O summer moon, shine bright !

(1) Nymphs of the forests and trees.

- (a) Tell, in simple prose and *in the third person*, the story contained in the above poem. (Take each stanza in order and omit no important detail.) (20)
- (b) Select from the poem *three* words which would not be used in ordinary prose, and give the meaning of each. Point out, also, two phrases in which the order of words differs from the prose order. (8)
- (c) Make a general grammatical analysis of the first four lines. Parse "laid" in line 12, and tell the mood of "Lay" in line 9, and "be" in line 19. (8)
- (d) What is the rhyme scheme used in this poem ? (3)

3. (a) Give the meaning of the following idioms :—

A bone of contention, a mare's nest, a pig in a poke, crying for the moon, ploughing the sands. (5)

(b) Correct the following sentences :—

(1) Let him and I settle who we will invite.

(2) The two sisters were fond of one another.

(3) No sooner did he begin speaking, when he was interrupted.

(4) He was the cleverest of all his class-fellows.

(5) This is one of the best books that has ever been written. (6)

4. Write a brief note on *five* of the following terms :—

fjord, delta, peninsula, polder, longitude, tundra, estancia, coniferous forest, coral island. (10)

5. Select *five* of the following and say, *very briefly*, what has made each of them famous :—

Lord Howard of Effingham, Prince Rupert, Joseph Addison, Duchess of Marlborough, William Wilberforce, Sir John Moore, James Watt, Abraham Lincoln, Marconi, Mrs. Pankhurst, Earl Haig, Adolf Hitler. (10)

1934

## LEAVING CERTIFICATE EXAMINATION

ENGLISH

(INCLUDING LITERATURE AND HISTORY)

(FIRST PAPER (a)—COMPOSITION)

Monday, 19th March—9.30 A.M. to 10.30 A.M.

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

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

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

- (a) “ Fresh air and exercise for a healthy outlook on life.” Discuss the merits of this slogan.
- (b) “ Sports and societies (debating, dramatic, etc.) are too prominent in the modern school.” Discuss.
- (c) Describe a day among the hills, *or* a day by the sea.
- (d) The respective advantages of the theatre and the cinema.
- (e) The importance of possessing a sense of humour.

(35)

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## ENGLISH

(INCLUDING LITERATURE AND HISTORY)

(FIRST PAPER (b)—INTERPRETATION AND LANGUAGE)

Monday, 19th March—10.45 A.M. to 12.25 P.M.

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

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

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

The great danger to guard against is the merely negative conception of a holiday. To the tired and overwrought it presents itself as a cessation of work or of other conditions which have become hard to bear. A vacation may then be all too literally a time of emptiness. It is true that on occasion that very emptiness has its value. Mind and body sometimes do well to lie fallow for a space. But the space must be brief. Left longer they go back, like the earth itself, to jungle or desert. Leisure time asks to be filled with some sort of activity or occupation. Mere cessation of function spells atrophy, deterioration, and decay. The problem becomes very real for every one when there is talk of a working week of forty hours or even less. With the dominance of the machine,



the shortening of process, and the prospect of satisfying human needs at the cost of less and less effort on the part of the individual worker, the question of the use of leisure time becomes of the first importance. The forethoughtful sociologist will preach earnestly the cultivation of habits of reading, of manual hobbies, of artistic endeavour, and of the observation of Nature, with an eye to the greater leisure of the future. Nor is it only the positive need of stopping a gap or filling a void. Of no less importance is the defensive aspect of the problem. Emptiness, whether physical or mental, always has its perils. Nature abhors a vacuum, and Satan finds some mischief still. It is not enough that the house of the soul should be swept and garnished. So long as it is empty it is a standing invitation to the seven devils worse than the first.

(a) Summarise the argument of the above in *three* short paragraphs (about 120 words in all).

(b) Explain briefly what is meant by *negative conception, cessation of function, shortening of process* and *defensive aspect*.

(c) From the above passage select three examples of metaphor, and comment on the suitability of each.

(d) (1) Complete the quotation "Satan finds, etc.," and

(2) Give a brief definition of *jungle, machine, hobbies*.

(e) Give the meaning of the following words:—

*literally, atrophy, deterioration, sociologist, manual, physical, garnished.* Give the derivation of any *three* of them. (35)

2. Fresh as the flower, whose modest worth

He sang, his genius "glinted" forth,

Rose like a star that touching earth,

For so it seems,

Doth glorify its humble birth

5

With matchless beams.

I mourned with thousands, but as one

More deeply grieved, for He was gone

Whose light I hailed when first it shone,

And showed my youth

10

How Verse may build a princely throne

On humble truth.

*Wordsworth.*

(a) Who is "he" (line 2) and what was "the flower" (line 1)? Why is *glinted* (line 2) in inverted commas? Why should Wordsworth have chosen this particular stanza for his poem?

(b) Paraphrase lines 3-6 of the first stanza so as to bring out the full meaning of the simile.

(c) Parse "grieved" (line 8) and explain clearly what is the thought expressed by the metaphor in lines 11-12. (10)

3. Rewrite the following sentences with their faults (of any kind) corrected:—

(a) Custom officials have the right neither to seize books or pamphlets at the ports which they consider improper.

(b) Neither he nor his brother go to a large boy's school.

(c) He continues to remain in Holland, one of the few countries which has not taken part in the War.

(d) He went away without me knowing anything about it.

(e) To do all this in ten minutes seems to me to be exceedingly short. (10)

4. "I would by no means wish a daughter of mine to be a progeny of learning; for instance, I would never let her meddle with Greek, or Hebrew, or Algebra; but I would send her to a boarding-school in order to learn a supercilious knowledge in accounts; and as she grew up, I would have her instructed in geometry, that she might know something of the contagious countries, but above all she should be mistress of orthodoxy, that she might not mis-spell; and likewise, that she might reprehend the true meaning of what she is saying."

*Mrs. Malaprop.*

(a) Make a list of the words wrongly used by Mrs. Malaprop in the above extract, and write opposite each the word she should have used.

(b) Construct sentences to show clearly the correct use of all the words wrongly used by Mrs. Malaprop, using each word in a separate sentence. (10)

## ENGLISH

(INCLUDING LITERATURE AND HISTORY)

(SECOND PAPER—LITERATURE)

Monday, 19th 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) Describe the death of any *one* of Shakespeare's tragic heroes, and show why it excites more admiration than regret.

**Or** (b) Sketch the character of *one* of the following : Sir John Falstaff, Bottom, Sir Toby Belch, Touchstone, Benedick, Puck, Caliban, and picture him as he would appear on the stage.

**Or** (c) Illustrate from any plays known to you Shakespeare's use of song, music and dance. (16)

2. **Either** (a) Show how a pilgrimage, as setting for the *Canterbury Tales*, was particularly well suited to illustrate all sides of Chaucer's genius.

**Or** (b) If you are attracted by the poetry of Spenser, explain why. (12)

3. Was Arnold right in calling Pope the poet of an age of prose? Explain what he meant by it. (12)

4. Write a short appreciation of *one* of the following : a satire of Dryden, a sonnet of Wordsworth, a song of Burns, an ode of Keats, a lyric of Shelley, a dramatic idyll of Browning, any short poem of Hardy : illustrate by quoting. (12)

5. Give a short account of any essay or other prose work written by Addison, *or* Lamb, *or* Stevenson, and point out some of the outstanding characteristics of the writer's style. (12)

6. Of the following imaginary characters, describe briefly any *two*, mention the book in which each occurs, its author's name, and approximate date:—Madge Wildfire, Mr. Squeers, Miss Matty, Olivia Primrose, Maggie Tulliver, Mr. Collins, Becky Sharpe, John Ridd and Soames Forsyte. (12)

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## ENGLISH

(INCLUDING LITERATURE AND HISTORY)

(THIRD PAPER—HISTORY)

Monday, 19th March—3 P.M. to 4.15 P.M.

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

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

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

### SECTION A

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

1. Show *very briefly* the historical significance of the following: the coronation of Charlemagne; the mission of St. Columba; the marriage of Henry II of England; the battle of Agincourt; the divorce of Catherine of Aragon; the National Covenant (1638); the Act of Settlement; the Fall of the Bastille; the Indian Mutiny; the Franco-British Entente of 1904. (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. (a) What peoples invaded England between the Saxon Conquest and the reign of Henry II, and with what results? (7½)

*and* (b) What countries did England invade between the accession of Edward I and the death of Edward III, and with what results? (7½)

3. Explain the historical importance of *two* of the following: St. Augustine of Canterbury; Pope Gregory VII (Hildebrand); David I of Scotland; King John; John Wycliffe; Joan of Arc; William Caxton. (15)

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

4. For what reasons may (a) the reign of James IV be regarded as an important period in Scottish History *and* (b) the reign of Elizabeth be regarded as a glorious period in English History? (15)

5. What changes in national policy followed the deaths of any *two* of the following: Edward VI, Oliver Cromwell, Queen Anne, Louis XIV? (15)

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

(a) the quarrels of James VI and I and Charles I with their English Parliaments;

(b) the causes of the outbreak and of the prolongation of the Thirty Years' War;

(c) the reasons for the Union of England and Scotland in 1707;

(d) the statement that the elder Pitt built upon the foundations laid by Walpole. (15)

## SUB-SECTION (3). MODERN PERIOD (1763–1934)

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

(a) the effects of the Treaty of Paris (1763) and of the Treaty of Versailles (1783) upon the development of the British Empire;

(b) the importance of sea-power in the Revolutionary and Napoleonic Wars;

(c) the struggle for the Reform Act of 1832;

(d) the causes of the wealth of Great Britain in the 19th century. (15)

8. Trace the careers of any *two* of the following : Canning, Palmerston, Disraeli, Cardinal Newman, Thomas Chalmers, Cavour, General Botha. (15)

9. **Either**—(a) What were the causes of the American Civil War and how did the conflict affect this country ?

**Or**—(b) Account for the rise and fall of the German Empire under the Hohenzollern House (1870–1918). (15)

10. Illustrate from the history of Canada and Australia the development of the British Colonies into the British self-governing Dominions. (15)

11. How far is it true to say that, since the close of the Great War, the theory of representative government and democratic institutions has been abandoned on the Continent of Europe ? (15)

## L A T I N

### LOWER GRADE

Monday, 26th 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 :—

*The fight between Arruns and Brutus.*

Obviam hosti consules eunt. Valerius peditem ducit : Brutus ad explorandum cum equitatu antecessit. eodem modo primus eques hostium agminis fuit. praeerat Arruns Tarquinius filius regis : rex ipse cum legionibus sequebatur. Arruns ubi ex lictoribus procul consulem esse, deinde iam propius ac certius facie quoque Brutum cognovit, inflammatus ira, “ Ille est vir,” inquit, “ qui nos extorres expulit patria. ipse en ille nostris decoratus insignibus magnifice incedit. di regum ultores, adeste.” concitat calcaribus equum atque in ipsum consulem dirigit. sensit in se iri Brutus. decorum erat tum ipsis capessere pugnam

ducibus. avide itaque se certamini offert; adeoque infestis animis concurrerunt, neuter, dum hostem vulneraret, sui protegendi corporis memor, ut contrario ictu per parmam uterque transfixus, duabus haerentes hastis moribundi ex equis lapsi sint. simul et cetera equestris pugna coepit. aequo Marte pugnatum est. dextra utrimque cornua vicere, laeva superata. (30)

2. Translate into English :—

*An unexpected battle.*

Caesar, nulla ratione ad pugnam elici posse Pompeium existimans, hanc sibi commodissimam belli rationem iudicavit, uti castra ex eo loco moveret semperque esset in itineribus. speravit enim fore ut movendis castris pluribusque adeundis locis commodiore frumentaria re uteretur, simulque ut in itinere aliquam occasionem dimicandi nancisceretur, et insolitum ad laborem Pompeii exercitum cotidianis itineribus defatigaret. his constitutis rebus, signo iam profectionis dato tabernaculisque detensis, animadversum est paulo ante, extra cotidianam consuetudinem, longius a vallo esse aciem Pompeii progressam, ut non iniquo loco posse dimicari videretur. tunc Caesar apud suos, cum iam esset agmen in portis, "differendum est," inquit, "iter in praesentia nobis; animo simus ad dimicandum parati; non facile occasionem postea reperiemus." (20)

3. Translate into Latin :—

- (1) Julia will be the first to reach the top of the hill.
- (2) Since our army has been thrice beaten, let us sue for peace.
- (3) I wish to find out when you are going to start for home.
- (4) The soldier was so severely wounded that we thought he would die.
- (5) Could he persuade them that Homer was really blind?
- (6) If you use that knife, you will cut your finger.
- (7) Orders were given that no one was to leave the city. (20)

4. (1) Give (a) the meaning, and (b) the first person singular of the perfect indicative active, of *aufero*, *divido*, *rapio*, *rideo*, *veto*.
- (2) Give (a) the meaning, and (b) the first person singular of the perfect indicative, of *gaudeo*, *mentior*, *queror*.
- (3) Give the genitive plural of *faber*, *frater*, *iter*, *obses*. (10)

## L A T I N

### HIGHER GRADE—(FIRST PAPER)

Monday, 26th 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. *After some hesitation, Deiotarus, an Armenian king friendly to Rome, had sided with Pompey in the Civil War. Cicero is pleading for him before Caesar himself.*

Cum audiret arma sumpta, de salute populi Romani extimescebat, in qua etiam suam esse inclusam videbat. in summo tamen timore quiescendum sibi esse arbitrabatur. maxime vero perturbatus est, ut audivit consules ex Italia profugisse omnesque consulares (sic enim ei nuntiabatur), cunctum senatum, totam Italiam esse effusam. talibus enim nuntiis et rumoribus patebat ad orientem via, nec ulli veri subsequebantur. nihil ille de condicionibus tuis, nihil de studio concordiae et pacis, nihil de conspiratione audiebat certorum hominum contra dignitatem tuam. quae cum ita essent, tamen usque eo se tenuit quoad a Cn. Pompeio ad eum legati litteraeque venerunt. ignosce, ignosce, Caesar, si eius viri auctoritati rex Deiotarus cessit, quem nos omnes secuti sumus; ad quem cum di atque homines omnia ornamenta conguessissent, tum tu ipse plurima et maxima. neque enim, si tuae res gestae ceterorum laudibus obscuritatem adtulerunt, idcirco Cn. Pompeii memoriam amisimus. quantum nomen eius fuerit, quantae opes, quanta in omni genere bellorum



gloria, quanti honores populi Romani, quanti senatus, quis ignorat? tanto ille superiores vicerat gloria, quanto tu omnibus praestitisti. (35)

2. *Aeneas, playing the part of Dido's husband, is superintending the new buildings of Carthage, when Mercury appears to him with a warning from Jupiter that the destiny of his race lies in Italy.*

“ Tu nunc Karthaginis altae  
 fundamenta locas, pulchramque uxorius urbem  
 exstruis? heu regni rerumque oblite tuarum!  
 ipse deum tibi me claro demittit Olympo  
 regnator, caelum et terras qui numine torquet;  
 ipse haec ferre iubet celeris mandata per auras:  
 quid struis? aut qua spe Libycis teris otia terris?  
 si te nulla movet tantarum gloria rerum,  
 Ascanium surgentem et spes heredis Iuli  
 respice, cui regnum Italiae Romanaque tellus  
 debentur.” tali Cyllenius ore locutus  
 mortalis visus medio sermone reliquit,  
 et procul in tenuem ex oculis evanuit auram.  
 at vero Aeneas aspectu obmutuit amens,  
 arrectaeque horrore comae, et vox faucibus haesit.  
 ardet abire fuga dulcisque relinquere terras,  
 attonitus tanto monitu imperioque deorum. (30)

3. *The consul's army is ambushed in a mountain pass. Decius proposes a counter-move against the enemy.*

Ab Saticula profectus Cornelius consul exercitum incaute in saltum circa insessum ab hoste induxit; nec priusquam recipi tuto signa non poterant imminentem capiti hostem vidit. dum id morae Samnitibus est quoad totum in vallem infimam demitteret agmen, P. Decius tribunus militum conspicit unum editum in saltu collem, imminentem hostium castris, aditu arduum impedito agmini, expeditis haud difficilem. itaque consuli territo animi, “ Videsne tu,” inquit, “ A. Corneli, cacumen illud supra hostem? arx illa est spei salutisque nostrae si eam, quam caeci reliquere Samnites, impigre capimus. ne tu mihi plus quam unius legionis principes hastatosque dederis; cum quibus ubi evasero in summum, perge hinc omni liber metu, teque et exercitum serva; neque enim moveri hostis, subiectus nobis ad omnis ictus, sine sua pernicie poterit. nos deinde aut fortuna populi Romani aut nostra virtus expediet.” (25)

## L A T I N

HIGHER GRADE—(SECOND PAPER)

Monday, 26th 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 :—

The army was in extreme peril. The men were tired by the long marches ; they had insufficient food and water ; they were weary of fighting, and wanted to return home and cultivate their fields. The general himself was beset with anxieties. He realised the temper of the soldiers ; he knew that the enemy was lurking in the woods through which he had passed, and he feared that an attack would soon be launched upon him. Before issuing the order to retire he summoned his senior officers. “ I know,” he said, “ that I can trust your skill in warfare and your loyalty to myself. For two years now we have been fighting in this land, and we have won many victories over these tribes. At this moment Fortune seems to have deserted us. We cannot advance ; if we stay here, we shall be surrounded before nightfall. A Roman general may not speak of a truce or a surrender. We must retreat and make a way for ourselves with the sword through the midst of the enemy.” (35)

2. Translate into Latin :—

(1) I could not help laughing when I heard that the sailor had fallen into the sea.

(2) We are all wondering what price you paid for that dog.

(3) My wife and I are too poor to send our son to that schoolmaster.

(4) I am sure that he himself is afraid that he will not become consul next year.

(5) Before the foundation of Rome the Greeks had besieged Troy for ten years and taken it. (17)

3.

(1) Give the first person singular of the perfect indicative active of *claudio*, *domo*, *excutio*, *repello*.

(2) Give the perfect participle (nominative singular masculine) of *confiteor*, *cunctor*, *metior*, *ordior*.

(3) Give the gender and genitive plural of *dens*, *genus*, *vis*, *ordo*. (8)

## GREEK

## LOWER GRADE

Friday, 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.

1. Translate into English :—

*The Greeks are warned of the dangers of their position.*

Καὶ ἀφικνοῦνται ἐπὶ τὸν Τίγρητα ποταμόν· πρὸς ᾧ πόλις ἦν μεγάλη καὶ πολυάνθρωπος ἢ ὄνομα Σιττάκη, ἀπέχουσα τοῦ ποταμοῦ σταδίου πεντεκαίδεκα. οἱ μὲν οὖν Ἕλληνες παρ' αὐτὴν ἐσκήνωσαν ἐγγὺς παραδείσου μεγάλου καὶ καλοῦ, οἱ δὲ βάρβαροι διαβεβηκότες τὸν Τίγρητα· οὐ μέντοι καταφανεῖς ἦσαν. μετὰ δὲ τὸ δεῖπνον ἔτυχον ἐν περιπάτῳ ὄντες<sup>(1)</sup> πρὸ τῶν ὄπλων Πρόξενος καὶ Ξενοφῶν· καὶ προσελθὼν ἀνθρωπὸς τις ἠρώτησε τοὺς προφύλακας ποῦ ἂν ἴδοι Πρόξενον ἢ Κλέαρχον. ἐπεὶ δὲ Πρόξενος εἶπεν ὅτι αὐτός εἰμι ὃν ζητεῖς, εἶπεν ὁ ἀνθρωπος τάδε· “Ἐπεμψέ με Ἀριαῖος καὶ Ἀρτάζος, πιστοὶ ὄντες Κύρω καὶ ὑμῖν εὖνοι, καὶ κελεύουσι φυλάττεσθαι μὴ ὑμῖν ἐπιθῶνται τῆς νυκτὸς οἱ βάρβαροι· ἔστι δὲ στράτευμα πολὺ ἐν τῷ πλησίον παραδείσῳ. καὶ παρὰ τὴν γέφυραν τοῦ Τίγρητος ποταμοῦ πέμψαι κελεύουσι φυλακὴν, ὡς διανοεῖται αὐτὴν λῦσαι Τισσαφέρνης τῆς νυκτὸς, ἐὰν δύνηται, ὡς μὴ διαβῆτε ἀλλ' ἐν μέσῳ

ἀποληφθῆτε τοῦ ποταμοῦ καὶ τῆς διώρυχος<sup>(2)</sup>·” ἀκούσαντες ταῦτα ἄγουσιν αὐτὸν παρὰ τὸν Κλέαρχον καὶ φράζουσιν ἃ λέγει· ὁ δὲ Κλέαρχος ἀκούσας ἑταράχθη σφόδρα καὶ ἐφοβεῖτο. (30)

(1) ἐν περιπάτῳ εἶναι = to walk about. (2) = canal.

## 2. Translate into English :—

*How Alexander received an idea put before him by a merchant.*

Ἦρχε μὲν γὰρ ἤδη Ἀλέξανδρος Περσῶν, ἔδει δὲ πανταχόσε τῆς ἀρχῆς διαθεῖν<sup>(1)</sup> τοὺς γραμματαφόρους τὰ ἐπιτάγματα τοῦ Ἀλεξάνδρου κομίζοντας. ἐκ Περσῶν δὲ πολλὴ εἰς Αἴγυπτον ἐγίγνετο ἡ ὁδός· ἐκπεριμέναι γὰρ ἔδει τὰ ὄρη, εἶτα διὰ τῆς Βαβυλωνίας εἰς τὴν Ἀραβίαν ἐλθεῖν, εἶτα ἐρημίαν πολλὴν περάσαντα ἀφικέσθαι ποτὲ μόλις εἰς Αἴγυπτον. ἤχθετο οὖν ὁ Ἀλέξανδρος ἐπὶ τούτῳ, διότι Αἴγυπτίους τι παρακινεῖν<sup>(2)</sup> ἀκούων οὐκ εἶχε διὰ ταχέων ἐκπέμπειν τοῖς σατράπαις τὰ δοκοῦντά οἱ περὶ αὐτῶν. τότε δὴ ὁ Σιδώνιος ἔμπορος, Ἐγὼ σοι, ἔφη, ὦ βασιλεῦ, ὑπισχνοῦμαι δεῖξαι ὁδὸν οὐ πολλὴν ἐκ Περσῶν εἰς Αἴγυπτον. εἰ γὰρ τις ὑπερβαίῃ τὰ ὄρη ταῦτα—ὑπερβαίῃ δ' ἂν τριταῖος—αὐτίκα μάλα ἐν Αἰγύπτῳ οὗτός ἐστιν. καὶ εἶχεν οὕτω. ὁ δ' Ἀλέξανδρος οὐκ ἐπίστευεν, ἀλλὰ γόητα ᾤετο εἶναι τὸν ἔμπορον. (20)

(1) = run about. (2) = become disaffected.

## 3. Translate into Greek :—

- (1) The others were killed and I alone was saved.
- (2) Let us not forget our ancestors to-day.
- (3) Do you think that wine is sweeter than milk ?
- (4) While your mother was speaking, he began to weep.
- (5) I told those boys not to answer.
- (6) We have come to Athens ourselves to see your house.
- (7) Who will praise us, if we despise the poor ? (21)

4. (a) Give the first person singular of the aorist indicative active, and passive, of ἀκούω, τιμῶ, πράττω.
- (b) Give the first person singular of the aorist indicative of δύναμαι, ἔπομαι.
- (c) Give the nominative singular masculine of the superlative of ἐχθρός, εὐρύς, σπουδαῖος, μέγας.
- (d) Give the nominative plural and the dative plural of ἄστυ, πούς, λέων. (9)

## GREEK

## HIGHER GRADE—(FIRST PAPER)

Friday, 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.

Translate into English :—

1. *The heroism of the Athenian cavalry saves Mantinea.*

Οἱ δ' Ἀθηναῖοι ἰππεῖς ὀρμηθέντες ἐξ Ἐλευσίνος ἔδειπνοποίησαντο μὲν ἐν Ἴσθμῳ, διελθόντες δὲ τὰς Κλεωνᾶς ἐτύγχανον προσιόντες εἰς τὴν Μαντίνειαν καὶ καταστρατοπεδευσάμενοι ἐντὸς τείχους ἐν ταῖς οἰκίαις. ἐπεὶ δὲ δῆλοι ἦσαν προσελαύνοντες οἱ πολέμοι, ἐδέοντο οἱ Μαντινεῖς τῶν Ἀθηναίων ἰππέων βοηθῆσαι, εἴ τι δύναιντο· ἔξω γὰρ εἶναι καὶ τὰ βοσκήματα πάντα καὶ τοὺς ἐργάτας, πολλοὺς δὲ καὶ παιδας καὶ γεραιτέρους τῶν ἐλευθέρων. ἀκούσαντες δὲ ταῦτα οἱ Ἀθηναῖοι ἐκβοηθοῦσιν, ἔτι ὄντες ἀνάριστοι<sup>(1)</sup> αὐτοὶ καὶ οἱ ἵπποι. ἐνταῦθα δὴ τούτων αὖ τὴν ἀρετὴν τίς οὐκ ἂν ἀγασθεῖη; οἱ καὶ πολὺ πλείονας ὀρῶντες τοὺς πολεμίους, καὶ ἐν Κορίνθῳ δυστυχήματος γεγενημένου τοῖς ἰππεῦσιν, οὐδὲν τούτων ὑπελογίσαντο, οὐδ' ὅτι καὶ

Θηβαίοις καὶ Θετταλοῖς τοῖς κρατίστοις ἵππεῦσιν εἶναι δοκοῦσιν ἔμελλον μάχεσθαι· ἀλλ' αἰσχυρόμενοι, εἰ παρόντες μηδὲν ὠφελήσοιεν τοὺς συμμάχους, ὡς εἶδον τάχιστα τοὺς πολεμίουσ, συνέρραξαν,<sup>(2)</sup> ἐρῶντες ἀνασώσασθαι τὴν πατρίαν δόξαν. καὶ μαχόμενοι αἴτιοι μὲν ἐγένοντο τὰ ἔξω πάντα σωθῆναι τοῖς Μαντινεῦσιν, αὐτῶν δὲ ἀπέθανον ἄνδρες ἀγαθοί.

(30)

(1) ἄριστον = breakfast.

(2) = joined battle.

2. *At Athens poor citizens unable to earn a living through physical disablement received public relief. The speaker has been accused of accepting such relief without justification. He states and refutes the assertions made against him.*

Περὶ μὲν οὖν τούτων τσαῦτά μοι εἰρήσθω· ὑπὲρ ὧν δὲ μοι προσήκει λέγειν ὡς ἂν οἷόν τε διὰ βραχυτάτων ἐρῶ. φησὶ γάρ ὁ κατήγορος οὐ δικαίως με λαμβάνειν τὸ παρὰ τῆς πόλεως ἀργύριον· καὶ γὰρ τῷ σώματι δύνασθαι καὶ οὐκ εἶναι τῶν ἀδυνάτων, καὶ τέχνην ἐπίστασθαι τοιαύτην ὥστε καὶ ἄνευ τοῦ διδομένου τούτου ζῆν. καὶ τεκμηρίοις χρῆται τῆς μὲν τοῦ σώματος ῥώμης, ὅτι ἐπὶ τοὺς ἵππους ἀναβαίνω, τῆς δ' ἐν τῇ τέχνῃ εὐπορίας, ὅτι δύναμαι συνεῖναι δυναμένοις ἀνθρώποις ἀναλίσκειν. τὴν μὲν οὖν ἐκ τῆς τέχνης εὐπορίαν καὶ τὸν ἄλλον τὸν ἐμὸν βίον, οἷος τυγχάνει, πάντας ὑμᾶς οἴομαι γινώσκειν· ὅμως δὲ κάγω διὰ βραχέων ἐρῶ. ἐμοὶ γὰρ ὁ μὲν πατήρ κατέλιπεν οὐδέν, τὴν δὲ μητέρα τελευτήσασαν πέπαυμαι τρέφων τρίτον ἔτος τουτί, παῖδες δὲ μοι οὕπω εἰσὶν οἳ με θεραπεύσουσι. τέχνην δὲ κέκτημαι βραχέα δυναμένην ὠφελεῖν, ἣν αὐτὸς μὲν ἤδη χαλεπῶς ἐργάζομαι, τὸν διαδεξόμενον δ' αὐτὴν οὕπω δύναμαι κτήσασθαι. πρόσδοδος δὲ μοι οὐκ ἔστιν ἄλλη πλὴν ταύτης, ἣν ἂν ἀφέλησθέ με, κινδυνεύομαι· ἂν ὑπὸ τῇ δυσχερεστάτῃ γενέσθαι τύχη. μὴ τοίνυν, ἐπειδὴ γε ἔστιν, ὦ βουλή, σῶσαί με δικαίως, ἀπολέσητε ἀδίκως.

(35)

3. **Either (a) or (b)**—

(a) *Iphigeneia expresses her willingness to die as a sacrifice for the success of the Greek expedition to Troy.*

Ἡ δὲ σταθεῖσα τῷ τεκόντι πλησίον  
 ἔλεξε τοιάδ'· ὦ πάτερ, πάρειμί σοι  
 τοῦμόν δὲ σῶμα τῆς ἐμῆς ὑπὲρ πάτρας  
 καὶ τῆς ἀπάσης Ἑλλάδος γαίας ὑπερ  
 θῦσαι δίδωμ' ἐκοῦσα πρὸς βωμόν θεᾶς  
 ἄγοντας, εἶπερ ἐστὶ θέσφατον τόδε.  
 καὶ τοῦπ' ἐμ' εὐτυχεῖτε· καὶ νικηφόρου  
 δώρου τύχοιτε πατρίδα τ' ἐξίκοισθε γῆν.  
 πρὸς ταῦτα μὴ ψεύσῃ τις Ἀργείων ἐμοῦ·  
 σιγῇ παρέξω γὰρ δέρην εὐκαρδίως.

τοσαῦτ' ἔλεξε· πᾶς δ' ἐθάμβησεν<sup>(1)</sup> κλύων  
 εὐψυχίαν τε κἀρετὴν τῆς παρθένου.  
 στὰς δ' ἐν μέσῳ Ταλθύβιος, ᾧ τόδ' ἦν μέλον,  
 εὐφημίαν ἀνεῖπε καὶ σιγῆν στρατῶ·  
 Κάλχας δ' ὁ μάντις ἐς κανοῦν χρυσήλατον  
 ἔθηκεν ὄξυ χεῖρι φάσγανον σπάσας  
 κολεῶν<sup>(2)</sup> ἔσωθεν, κρᾶτά τ' ἔστεψεν<sup>(3)</sup> κόρης.

(1) = marvelled.

(2) κολεόν = scabbard.

(3) from the same root as στέφανος.

Scan the lines beginning with δώρου and πρὸς.

(30)

(b) *Telemachus visits Nestor, explains who he is, and says that he has come to him hoping to get news of his father Odysseus.*

Τὸν δ' αὖ Τηλέμαχος πεπνυμένος ἀντίον ἦῶδα  
 θαρσήςσας· αὐτὴ γὰρ ἐνὶ φρεσὶ θάρσος Ἀθήνη  
 θῆχ', ἵνα μιν περὶ πατρὸς ἀποιοχομένοιο ἔροιτο·  
 ὦ Νέστορ Νηληιάδη, μέγα κῦδος Ἀχαιῶν,  
 εἶρεαι ὅπποθεν εἶμέν· ἐγὼ δὲ κέ τοι καταλέξω.

ἡμεῖς ἐξ Ἰθάκης ὑπονηίου<sup>(1)</sup> εἰλήλουθμεν·  
 πρῆξις δ' ἦδ' ἰδίτη, οὐ δῆμιος, ἦν ἀγορευώ.  
 πατρός ἐμοῦ κλέος εὐρὸ μετέρχομαι, ἦν που ἀκούσω,  
 δίου Ὀδυσῆος ταλασίφρονος, ὃν ποτέ φασιν  
 σὺν σοὶ μαρνάμενον Τρώων πόλιν ἐξαλαπάξει.  
 ἄλλους μὲν γὰρ πάντας, ὅσοι Τρωσὶν πολέμιζον,  
 πευθόμεθ', ἧχι ἕκαστος ἀπώλετο λυγρῶ ὀλέθρῳ,  
 κείνου δ' αὖ καὶ ὄλεθρον ἀπευθέα θῆκε Κρονίων·  
 οὐ γὰρ τις δύναται σάφα εἰπέμεν, ὅπποθ' ὄλωλεν,  
 εἴ θ' ὅ γ' ἐπ' ἠπείρου δάμη ἀνδράσι δυσμενέεσσιν,  
 εἴ τε καὶ ἐν πελάγει μετὰ κύμασιν Ἀμφιτρίτης.  
 τούνεκα νῦν τὰ σὰ γούναθ' ἰκάνομαι, εἴ που ὅπωπας  
 ὀφθαλμοῖσι τεοῖσιν ἢ ἄλλου μῦθον ἄκουσας.

(1) lying beneath Neium (a promontory).

Scan the last two lines.

(30)

## GREEK

HIGHER GRADE—(SECOND PAPER)

Friday, 23rd 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 prose :—

When they learned who he was, they led him into the city, and on his arrival he addressed the citizens in this way :—“ Oh Athenians, I beg you to fight at once and not to make a truce with the enemy. Harken to what I say to you. If you are so foolish as to imagine that you can trust a Persian, you are much mistaken. I myself am a Greek, and I by no means desire to see you enslaved instead of free. I fear that you do not understand how great is your danger. You hope that the Spartans will come to



your aid. I know they will not. They value their own safety more highly than your freedom. They will not leave their own land until they hear that you have beaten the enemy. Then they will send hoplites and cavalry, and act more insolently than before towards you. If you are beaten, they will become friends of the Persians and betray Greece." (35)

2. Translate into Greek :—

- (1) If you are ill to-morrow, I shall send for the doctor.
- (2) One hundred soldiers happened to be sleeping in the market-place when the town was captured.
- (3) Whether it is good or bad to obey a tyrant, we must defend our native land.
- (4) Though I once ruled over all the Greeks, I should gladly have become a citizen of your city.
- (5) He is far too sensible to give these beautiful books to that child. (14)

3. (a) Give the first person singular of the future indicative active of

ἀφίστημι, γελῶ, ἀναμιμνήσκω, ἐθέλω.

(b) Give the first person singular :—

(i) of the aorist indicative active of

προσκαλῶ, περιμένω,

(ii) of the aorist indicative of

ἕδομαι, βούλομαι.

(c) Give the nominative plural and the dative plural of  
δόρυ, υἱός, πλοῦς, τριήρης. (6)

## FRENCH

### LOWER GRADE

Thursday, 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 :—

Grand-père venait de donner à ses enfants un vieux piano, dont un de ses clients l'avait prié de le débarrasser. Le cadeau n'avait pas été très bien accueilli.<sup>(1)</sup> Seul, le petit Christophe fut joyeux du nouveau venu, sans bien savoir pourquoi. Il lui semblait que c'était une boîte magique, pleine d'histoires merveilleuses, comme dans ce livre de contes dont grand-père lui lisait de temps en temps quelques pages, qui les enchantaient tous deux. Depuis le premier jour, il rôdait sans cesse autour de l'instrument : et, dès qu'on avait le dos tourné, il soulevait le couvercle et poussait doucement une touche. Quelquefois, dans sa hâte, il frappait un peu trop fort, et sa mère lui criait : " Ne te tiendras-tu pas tranquille ? Ne touche pas à tout ! " ou bien il se pinçait en refermant la boîte, et il faisait de piteuses grimaces, en suçant son doigt meurtri . .

Maintenant, sa plus grande joie est quand sa mère doit faire une course en ville. Il écoute ses pas descendre l'escalier ; les voilà dans la rue, ils s'éloignent. Il est seul. Il ouvre le piano, il approche une chaise, il se juche<sup>(2)</sup> dessus. Pourquoi attend-il d'être seul ? Personne ne l'empêcherait de jouer, pourvu qu'il ne fasse pas trop de bruit. Mais il a honte devant les autres, il n'ose pas.

*Romain Rolland.* (25)

<sup>(1)</sup> accueillir = to receive.

<sup>(2)</sup> se jucher = to perch oneself.

## 2. Translate into English :—

Murat monta dans notre appartement vers minuit et approcha de mon berceau. Mon père et ma mère étaient avec lui. Ils revenaient d'une partie de chasse, et rapportaient un petit faon,<sup>(1)</sup> que Murat plaça lui-même à côté de moi. Je m'éveillai à demi, et vis cette jolie petite tête de faon qui se penchait contre mon visage. Je jetai mes bras autour de son cou, et me rendormis sans pouvoir remercier le prince. Mais le lendemain matin, en m'éveillant, je vis encore Murat auprès de mon lit. Mon père lui avait dit le spectacle qu'offraient l'enfant et la petite bête endormis ensemble, et il avait voulu le voir. En effet, ce pauvre petit animal, qui n'avait peut-être que quelques jours d'existence, et que les chiens avaient poursuivi la veille, était tellement vaincu par la fatigue, qu'il s'était arrangé sur mon lit pour dormir, comme eût pu le faire

un petit chien. Il était couché en rond contre ma poitrine, il avait la tête sur l'oreiller, ses petites jambes étaient repliées comme s'il eût craint de me blesser, et mes deux bras étaient restés enlacés à son cou comme je les y avais mis en me rendormant. Ma mère m'a dit que Murat regrettait en cet instant de ne pouvoir montrer un groupe si naïf à un artiste. Sa voix m'éveilla, mais mes premières caresses furent pour le faon, qui semblait vouloir me les rendre, tant la chaleur de mon lit l'avait rassuré.

*George Sand.* (25)

(<sup>1</sup>) fawn.

3. Translate into French :—

A poor woman said to her son : " John, go into the forest and fetch some wood, but do not stay too long." The boy, who was only eleven years old, answered : " I shall be back(<sup>1</sup>) in two hours, mother." He took his sledge(<sup>2</sup>) and went quickly into the forest. It was in the month of January, and it was very cold. He had not gone very far when it began to snow, and when he arrived at the wood he found everything covered with snow. He gathered some wood and put it on his sledge, but he was so tired that he lay down and fell asleep. (20)

(<sup>1</sup>) de retour.

(<sup>2</sup>) le traîneau.

4. Translate into French :—

- (1) Tell me which lesson you have to learn for to-morrow.
- (2) He is old enough to know that he is wrong.
- (3) Mary has torn her dress, but she has not shown it to her mother.
- (4) It was raining when we arrived last night.
- (5) They used to live opposite the market, but now they live in the country. (10)

## FRENCH

## HIGHER GRADE—(FIRST PAPER)

Thursday, 22nd 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 :—

*Deux Frères*

1. J'avais cinq ans, lorsque Dieu, songeant aux besoins futurs de ma vie et de mon âme, me donna un frère. La plus ancienne joie dont je me souviens fut de voir ce beau petit frère endormi dans son berceau. Dès qu'il put marcher, je devins son protecteur ; dès qu'il put parler, il me consola, car l'affliction et la douleur n'épargnèrent point mes jeunes ans. Que de jours sombres changés en jours d'allégresse parce que cet enfant m'a aimé ! Nous allions ensemble à l'école ; nous revenions ensemble au logis. Toujours nous faisons cause commune. Je ne le laissais point insulter ; et lui, quand j'avais quelque affaire, sans s'informer du sujet de la querelle, sans considérer ni la taille ni le nombre de mes ennemis, il m'apportait résolument le secours de ses petits poings. Je n'ai pas subi une punition qui ne l'ait indigné comme une grande injustice. Si j'étais au pain sec, il savait bien me garder la moitié de ses noix, et la moitié de sa moitié de pomme. . . . Maintenant, après vingt ans, en évoquant les chers souvenirs, nous ne voyons pas que nous ayons voulu une seule fois méchamment nous affliger. Souvent j'aurais fait l'école buissonnière, mais il m'aurait suivi, et j'aimais mieux, quel que fût le beau temps, remplir mon devoir avec lui, que de lui faire partager la responsabilité de mon crime. Nous traversions des jardins pleins de choses tentantes, et je regardais tout d'un air stoïque. Ce n'était pas pour éviter de lui donner mauvais exemple ; c'était qu'il n'aurait pu, à son âge, fuir aussi lestement que moi.

*L. Veuillot.* (25)

## 2. Either (a) or (b) :—

(a) *Soir sur la Plaine*

Vers l'occident, là-bas, le ciel est tout en or ;  
 Le long des prés déserts, où le sentier dévale,<sup>(1)</sup>  
 La pénétrante odeur des foins coupés s'exhale,  
 Et c'est l'heure émouvante où la terre s'endort.  
 La faux des moissonneurs a passé sur les terres,  
 Et le repos succède aux travaux des longs jours :  
 Parfois une charrue, oubliée aux labours,  
 Sort, comme un bras levé, des sillons solitaires.

La nuit, à l'Orient, verse sa cendre fine ;  
 Seule, au couchant, s'attarde une barre de feu ;  
 Et, dans l'obscurité qui s'accroît peu à peu  
 La blancheur de la route à peine se devine.

Puis, tout sombre et s'enfonce en la grande unité.  
 Le ciel enténébré rejoint la plaine immense . . .  
 Ecoute ! . . . Un grand soupir traverse le silence . . .  
 Et voici que le cœur du jour s'est arrêté !

*Albert Samain.* (20)

(1) dévale = descends.

(b) (*Queen Isabella of Castille holds a council. Among those present is Carlos, a soldier of fortune, unknown to the queen, and despised by her courtiers. Before taking his place, Carlos has to tell who he is.*)

*Carlos.* Je dirai qui je suis, Madame, en peu de mots.

On m'appelle soldat : je fais gloire de l'être ;  
 Au feu roi par trois fois je le fis bien paraître.  
 L'étendard de Castille, à ses yeux enlevé,  
 Des mains des ennemis par moi seul fut sauvé ;  
 Cette seule action rétablit la bataille,  
 Fit rechasser le More au pied de sa muraille,  
 Et, rendant le courage aux plus timides cœurs,  
 Rappela les vaincus et défit les vainqueurs.  
 Ce même roi me vit dedans l'Andalousie  
 Dégager sa personne en prodiguant ma vie,  
 Quand tout percé de coups, sur un monceau de morts,  
 Je lui fis si longtemps bouclier de mon corps  
 Qu'enfin, autour de lui ses troupes ralliées,  
 Celles qui l'enfermaient furent sacrifiées ;  
 Et le même escadron qui vint le secourir  
 Le ramena vainqueur, et moi prêt à mourir.  
 Je montai le premier sur les murs de Séville,  
 Et tins la brèche ouverte aux troupes de Castille.

*Corneille.* (20)

3. *Oxford*

C'est un contraste d'une poésie délicieuse lorsque l'éveil du nouveau printemps s'accomplit dans une ville du moyen âge demeurée aussi intacte que l'antique Oxford. Depuis Venise, aucun paysage de cité n'a enlevé mon imagination à une telle distance de notre époque. Ce ne sont, une fois les faubourgs franchis, qu'édifices anciens, coupoles et tours, beffrois et clochers, se profilant sur tous les coins de l'horizon. Certaines rues glissent tout entières entre de hautes murailles de couvents, et par l'ouverture des portails, d'espace en espace, un profond jardin s'aperçoit: une verte pelouse, des arbres gigantesques et des fleurs sur le rebord des fenêtres. Même les maisons modernes qui se pressent autour des collèges anciens et des églises, ces maisons anglaises qui se ressemblent toutes d'une extrémité à l'autre de la grande île, ont pris ici un je ne sais quel air pittoresque et vieilli qui s'harmonise avec la physionomie du reste de la ville. De loin en loin, au milieu de la rue et dans l'ombre d'une chapelle, un cimetière s'étend, mais si heureux, si intime, si paisiblement funèbre! Si les morts qui sommeillent dans cet enclos de silence et de fraîcheur remontaient un jour, et s'ils se mêlaient à la foule de passants qui vont et qui viennent autour de la grille, certes, ils ne trouveraient guère de changements dans la figure des dix-neuf collègues. *Paul Bourget.* (25)

## FRENCH

## HIGHER GRADE—(SECOND PAPER)

Thursday, 22nd March—1.0 P.M. to 1.30 P.M.

*This Paper must not be seen by any candidate.*

*To be read out by the Teacher at 1.0 P.M. in the presence of the Supervising Officer.*

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

## DIRECTIONS FOR TEACHER.

1. *Inform the candidates that they may not ask for the repetition of any word or phrase.*
2. *Read the passage aloud distinctly and deliberately, but not slowly, the object being to bring out the meaning of the whole as clearly as possible. Observe the liaisons as marked.*
3. *Then dictate the passage slowly, saying each group of words (as indicated by vertical lines) twice, and pronouncing every word very distinctly. The punctuation should be indicated thus:—(.) ‘un point,’ (,) ‘virgule,’ (:), ‘deux points,’ (!) ‘point d’exclamation,’ (“) ‘ouvrez les guillemets,’ (”) ‘fermez les guillemets.’*
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

*Portrait de Vieillard*

Le vieillard marchait pieds nus dans la rosée. | Il avait pour tout vêtement | un pantalon de toile bleue, | qui, faute de bretelles, | tombait sur ses hanches, | et une chemise grossière. | On l’a vu, | jusqu’à plus de quatre-vingts ans, | aller tête nue au soleil le plus ardent, | et la veste entr’ouverte | à la bise des hivers. | Sa barbe brillait comme de l’argent. | Son crâne chauve était si luisant, | que la lune s’y reflétait | comme dans l’eau. | Il marchait lentement, | les mains derrière le dos, | la tête levée, | comme un homme qui surveille son empire. | Mais le plus souvent, | ses regards se perdaient dans le ciel, | et il interrompait sa conversation | pour dire en montrant la voûte étoilée : | “ Voyez cela, voyez comme c’est beau ! | ” C’est le seul paysan | que j’aie vu admirer le ciel, | ou tout au moins | c’est le seul que j’aie vu | se rendre compte de son admiration. |

(10)

## FRENCH

## HIGHER GRADE—(SECOND PAPER)

Thursday, 22nd 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 :—

When you were a bird you knew the fairies pretty well, and you know a good deal about them in your childhood. It is a great pity you can't write it down, for gradually you forget, and I have heard of children who said that they had never seen a fairy. Very likely they were looking at a fairy all the time, but they were cheated because she pretended to be something else. When they think you are not looking, the fairies pay no attention to you and go on playing happily ; but if you look, and they fear there is no time to hide, they stand quite still, pretending to be flowers. Then, after you have passed without knowing that they were fairies, they run home and tell their mothers about the adventure. . . . As for their houses, it is no use looking for them. You can't see them by day, for they are of the colour of night, and I have never known anyone who could see night during the day. One of the great differences between the fairies and us is that they never do anything useful. They look tremendously busy, as if they had not a moment to spare, but if you were to ask them what they are doing, they could not tell you in the least. (35)

2. Translate into French :—

- (1) Both these houses are mine ; which would you live in if they were yours ?
- (2) I have not seen them for two months. I wonder where they have gone.
- (3) Whatever talents you may have, you will not succeed unless you work.
- (4) My hair is too long. I am going to the barber's to have it cut.
- (5) Go to bed at once. You look tired and you have to be up early. (15)



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

Holidays by the seaside—a boating expedition—sudden squall (*une rafale*)—boat capsizes (*chavirer*)—struggles in water—accident observed from shore—Rescue. (20)

(Complete the story in your own way.)

## GERMAN

### LOWER GRADE

Tuesday, 27th 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. Failure to use the German script in the answers to questions 3 and 4 will lead to a loss of marks.**

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

*While Hunting, a Court Lady loses her way in a Forest*

Sie fing an müde zu werden; die Kniee zitterten ihr. Jagdtasche und Flinte wogen schwer; sie hatte tüchtigen Appetit, aber nicht ein Stück Brot bei sich. Und es war doch recht dumm, daß auch gar kein Weg kommen wollte. Der Wald war so entsetzlich groß, und so einsam. Der Wind rührte sich nicht mehr in den Bäumen; eine grauenvolle Stille lag über der Einöde, als wäre die ganze Welt ausgestorben. Da flog kein Vogel, da sprang kein Reh, da kletterte kein Eichhörnchen am Baum. Nur einmal ringelte sich eine Schlange durch das hohe Gras. Hunger und Durst stellten sich schärfer ein. Aber jetzt gab es nicht

einmal einen Quell. Die Geschichte fing an beschwerlich und langweilig zu werden. Wäre es das noch allein gewesen! Aber wie lange könnte das noch dauern? In dieser Besorgnis bog sie plötzlich ab, nach einer ganz andern Seite hin. Da kam es ihr wieder vor, als hätte sie nun eine wohlbekannte, sichere Gegend verlassen, um sich ganz in die Wüste zu verlieren. Auf einmal stolperte sie über eine Baumwurzel, fiel hin und blieb ermattet am Boden liegen. Indem sie sich aufrecht hinsetzte und das Knie rieb, welches sehr wehtat, bemerkte sie, daß ihr ein Stiefel zerrissen war. Nun fing sie an bitterlich zu weinen. Es kam ihr ganz schrecklich vor, daß sie da so verlassen, müde und hungrig im wilden Walde sitze! — eine Hofdame! hier am Bergabhang, wie ein Zigeunermädchen! (25)

2. Translate into English:—

*The Boy and the Goldfinch*

Ein bunter Stieglitz ward gefangen  
 Und einem Knaben auf Verlangen  
 Zu seinem Eigentum geschenkt,  
 Der, ganz entzückt, an nichts mehr denkt  
 Als seinen Vogel recht zu pflegen.  
 Er sucht ihm daher allermwegen  
 Sein liebstes Futter, füllt sein Glas  
 Des Tages oft mit frischem Naß,  
 Vergoldet ihm sein kleines Haus  
 Und bringt ihm manchen süßen Schmaus<sup>(1)</sup>.  
 Der Stieglitz aber findet doch  
 Zulezt ein unbemerktes Loch,  
 Durch welches er denn auch entkam  
 Und fröhlich seinen Abschied nahm.  
 Der Knabe rief ihm freundlich zu:  
 „Wohin, du armer Vogel du?  
 Was hat dir denn bei mir gefehlt,  
 Daß sich dein Flug das Weite wählt?  
 Hab' ich nicht alles dir gegeben,  
 Wovon die besten Vögel leben?“

<sup>(1)</sup> Schmaus = feast, banquet.

War nicht dein Käfig ein Palast,  
 Mit goldnem Draht schön eingefaßt?  
 Und ward dir nicht aus meiner Hand  
 Manch Stückchen Zucker zugewandt?  
 Komm wieder, bitt' ich dich, herein!" —  
 Der Stieglitz gab zur Antwort: „Nein!  
 Weg mit der goldnen Sklaverei!  
 Hier hab' ich mehr, denn ich bin frei". (25)

3. Translate into German:—

- (1) May I have a cup of coffee and a piece of cake, please?
- (2) She came out of the house and sat down on the seat before the window.
- (3) After reading the letter he put it in his pocket.
- (4) These pears cost a penny each and the grapes cost fourpence a pound.
- (5) The teacher ordered the pupil to leave the room at once. (15)

4. Translate into German:—

When he reached the inn Karl went to bed, for he had had a long journey and felt very tired. As he was falling asleep he suddenly heard a noise, and for a few minutes he lay still and listened. His black servant slept in a bed outside his door. Was the servant perhaps speaking in his sleep? No! For Karl, who was now fully awake, seemed to hear a second voice saying softly "Be quiet"! He then jumped up, went to the door, opened it and found—only his dog! (15)

## GERMAN

### HIGHER GRADE—(FIRST PAPER)

Tuesday, 27th 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. “*Fanny's First Play*”

Unsere Freundin erschien, Triumph im rosigen Gesichtchen, in den zarten Händen ein Manuskript, und verkündete uns, daß sie ein Theaterstück gedichtet und aufgeschrieben habe.

Nein, war's möglich? Aufgeschrieben, ein ganzes Theaterstück?—Nein, diese Fanny, wer hätte ihr das zugetraut! Sie lächelte still vergnügt, setzte sich an den Tisch und begann mit leiser, bewegter Stimme ihr Werk vorzulesen. Wir hörten mit gespannter Aufmerksamkeit zu; es gefiel uns außerordentlich; es war etwas Neues. Bisher hatten wir uns im Heroischen oder im Lustigen bewegt. Fanny brachte etwas Sentimentales. Die Rollenverteilung machte keine Schwierigkeiten; wir einigten uns rasch. Am zufriedensten war wohl ich. Mir war die Darstellung eines alten Onkels anvertraut, der zankt und poltert, sich aber zuletzt als der weichste Gemütsmensch entpuppt<sup>(1)</sup> und eine rührende Rede hält.

Der Abend wurde damit zugebracht, die Rollen auszusprechen. Um sie auswendig zu lernen, benutzten wir die Woche hindurch jeden freien Augenblick. Am nächsten Samstag fand die Probe, am übernächsten die Aufführung statt; nicht bei uns, sondern im Hause der Mutter unserer Dichterin. Ein kleines Theater war aufgestellt, ein kleines Publikum war eingeladen, die Vorstellung ging wie am Schnürchen. Alle Personen, die auftraten, wurden ernst genommen und erhielten Beifall; bloß der alte Onkel erregte immer nur Heiterkeit. Seine Zornesausbrüche wirkten komisch, und als er am Schlusse rührend werden wollte, brach das Publikum in Gelächter und der Mißverständene in Tränen aus. (25)

<sup>(1)</sup> Sich entpuppen = to turn out to be, to prove to be.

2. *The Blissful Days of Spring*

Wonnig ist's, in Frühlingstagen  
 Nach dem Wanderstab zu greifen  
 Und, den Blumenstrauß am Hute,  
 Gottes Garten zu durchschweifen.

Oben ziehn die weißen Wolken,  
 Unten gehn die blauen Bäche,  
 Schön in neuen Kleidern prangen  
 Waldbeshöh' und Wiesenfläche.

Auf die Bleiche bringt das Mädchen  
 Was der Winterfleiß gesponnen,  
 Und dem Hain erzählt die Amsel<sup>(1)</sup>  
 Was im Schnee sie still ersonnen.

Sind es auch die alten Töne,  
 Die bekannten, längst vertrauten,  
 Doch die Bleicherinnen lauschen  
 Gern den süßen, lieben Lauten ;

Gern den süßen, lieben Lauten,  
 Die in Berg und Tal erklingen ;  
 Hirtenbub und Köhlerknabe  
 Horchen auf, um mitzusingen ,

Mitzusingen frisch und freudig  
 Nach des Winters langen Schmerzen ;  
 All die halbvergeßnen Lieder  
 Werden wach im Menschenherzen.

Halbvergeßne alte Lieder  
 Werden wach in meiner Seele :  
 Hätt' ich nur, sie auszusingen,  
 Wilde Amsel, deine Kehle.

<sup>(1)</sup> die Amsel = blackbird.

3.

*A Grim Figure*

An einem Abend war ich in ein Kaffeehaus gegangen, wohin mich schon einmal ein Bekannter geführt hatte. Ich hoffte die neuesten Zeitungen zu finden. An einem Tischchen spielten zwei Herren nachdenkend ihre Partie Schach. Einige junge Männer saßen am Fenster in lebhaftem Gespräch über Geister. Ein kleiner, ällicher Mann in scharlach-rotem Überrock wanderte, die Hände hinter dem Rücken, im Zimmer auf und ab. Er hatte, wie in der Kleidung etwas Geschmackloses, auch in Gestalt, in Bewegungen, in Gesichtszügen etwas Auffallendes und Widerliches. Er war von weniger als mittlerer Größe, aber starkknochig, breitschulterig; mochte fünfzig bis sechzig Jahre alt sein und ging mit dem Kopfe gebückt wie ein Greis. Schwarzes, glänzendes Haar hing ihm glatt um den Kopf. Das schwarzgelbe Gesicht mit der Habichtsnase und den vorragenden Backenknochen hatte etwas Abstoßendes. Der, dachte ich, ist ein geborner Scharfrichter, oder Großinquisitor, oder Räuberhauptmann, oder Zigeunerkönig. Um des Spases willen könnte der Mann Städte in Flammen auflodern und Kinder an Speeren zappeln sehen. Ich möchte nicht mit ihm in einem Walde allein reisen. Er hat gewiß in seinem Leben noch nie lächeln können. (25)

## GERMAN

HIGHER GRADE—(SECOND PAPER)

Tuesday, 27th 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 that they may not ask for the repetition of any word or phrase, and warn them that marks will be deducted for failure to use the German script.*
2. *Read the passage aloud distinctly and deliberately, but not slowly, the object being to bring out the meaning of the whole as clearly as possible.*
3. *Then dictate the passage slowly, saying each group of words (as indicated by vertical lines) twice, and pronouncing every word very distinctly. The punctuation should be indicated thus—(,) 'Komma', (;) 'Semikolon', (.) 'Punkt'.*
4. *After an interval of five minutes read the text over again in the same manner as on the first occasion, but do not on any account repeat separate words at the request of individual candidates.*

## DICTATION

*The Sturdy Men of the Black Forest*

Wer durch Süddeutschland reist, | der sollte nie vergessen |  
 auch ein wenig | in den Schwarzwald hineinzuschauen ; |  
 nicht der Bäume wegen, | obgleich man nicht überall | solch  
 unermessliche Mengen | herrlich aufgeschossener Tannen |  
 findet, | sondern wegen der Leute, | die sich von den andern  
 Menschen ringsumher | merkwürdig unterscheiden. | Sie sind  
 größer als gewöhnliche Menschen, | breitschulterig, | von  
 starken Gliedern, | und es ist, | als ob der stärkende Duft, |  
 der morgens durch die Tannen strömt, | ihnen von Jugend  
 auf | einen freieren Atem, | ein klareres Auge | und einen  
 festeren, | wenn auch rauheren Mut | als den Bewohnern |  
 der Stromtäler und Ebenen | gegeben hätte. | Und nicht nur  
 durch Haltung und Wuchs, | auch durch ihre Sitten und  
 Trachten | sondern sie sich | von den Leuten, | die außerhalb  
 des Waldes wohnen, | streng ab. (10)

## GERMAN

## HIGHER GRADE—(SECOND PAPER)

Tuesday, 27th 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. Failure to use the German script in the answers to questions 1, 2(a) and 3 will lead to a loss of marks.

1. Translate into German :—

The lad called a servant, who carried the letter upstairs. I heard each step in the long passages, and the longer I waited the more intolerable my position became. On the walls hung old family pictures—knights in full armour,<sup>(1)</sup> ladies in old-fashioned costumes, and, in the midst of them, a woman in the white dress of a nun, with a red cross on her breast. I had often seen these pictures before, and I had never thought how a human heart had once beat in every one of them. But now it seemed as if I could suddenly read whole volumes in their features, and as if they all said to me, "We too once lived, we too once suffered." Under this iron armour there once lay secrets concealed. This white dress and this red cross are living witnesses that here too a struggle was fought, such as raged now in my breast. And then they all seemed to look on me with pity, as if they would say, "You do not belong to us." I was becoming more restless every minute, when suddenly a light step roused me from my dreams. (35)

<sup>(1)</sup>armour = die Rüstung.

2. (a) Translate into German :—

- (1) My train does not arrive at the station till eight-thirty p.m.
- (2) I wonder if you have been able to finish your letter.
- (3) Although he lives in Munich he speaks as if he came from North Germany.



(b) Translate into English :—

(1) Der Beamte auf dem Bahnsteig ruft „Alles einsteigen!“ und der Zug fährt gleich ab.

(2) Diese Wandervögel tragen alle Rucksäcke ; sie wollen in einer Jugendherberge übernachten. (10)

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

Lady calling on friend one autumn afternoon—leaves purse and gloves on hall-table—takes tea and remains some time chatting—on departure misses purse—hostess much concerned—ultimately sends for police—enquiry made without result—maid suspected, but nothing proved against her—Winter passes—much snow falls—next Spring two boys climbing trees in neighbouring wood—see strange object among branches—investigate—find it to be purse containing soaked pound notes.

(Complete the story in your own way.) (25)

## GAELIC

### LOWER GRADE

Tuesday, 27th 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 beul aithris ag ràdh gun robh fear de Chloinn Néill pòsda aig a' Bhaintighearna Leòdaich. Bha ise mór aisde fhéin agus geur-leanmhainneach air muinntir Bharraidh. Cha robh i riamh toilichte ann an Cismul a chionn

agus nach robh crodh air buaile aice, agus nach cluinneadh i luinneag na banaraich an ám bleoghann nam bó. Tha e air a ràdh gun robh i tinn aig aon ám agus gun deach cailleach de mhuintir Thangusdail a choimhead oirre. Bha so ann an teis meadhoin a' gheamhraidh, ann an tràithean dubha na Nollaige. Thug a' bhean bhochd leatha measgan de ìm ùr. Ràinig i Cismul, agus chaidh a toirt suas gu seòmar-laighe na baintighearna. An uair a chunnaic ise am measgan ime, chuir i a dh'iarraidh Mhic Néill, agus thuirt i ris: "Seall a' bhean bhochd so a Tangusdal, am pailteas a thig bho a làimh nach tig bho làimh na baintighearna—ìm ùr aig Nollaig. Cha chuir mise seachad geamhradh tuilleadh ann an Cismul, oir chan fhaodar a ràdh gu bheil pailteas aice-se nach 'eil aig baintighearna Mhic Néill."

Dh' fhàg iad Cismul, agus an uair sin chaidh tigh mór Eolaigearraidh a thogail.

*C. MacFadyen. (20)*

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

'S a' mhaduinn 's mi 'g éirigh 's neo-éibhinn atà mi,  
 Cha b'ionann is m'abhaist air àirigh nan gleann ;  
 O'n thàinig mi an taobh-s' chuir mi cùl ris gach mànrán,  
 'S cha bheag a' chùis ghràine leam cànrán nan Gall.  
 Ciamar dh'fheudainn bhith subhach 's mo chridhe an àit' eile,

Gun agam ach pàirt dheth 's an àit' anns a bheil mi ?  
 Fo dhubhar nam mór-bheann tha an còrr dheth, 's cha cheil mi,

'S gur gràin' leam bhith 'g amharc na th'agam 'n a gheall.

O, is tric bha mi falbh leat, a gheal-bhean na féile,  
 Ann an doire nan geug is air réidhleìn an driùchd,  
 'S air srathaibh a' ghlinne, far am bu bhinne guth smeòraich,

'S air iomair nan neòineanan feòirneanach cùr' ;<sup>(1)</sup>  
 A' d'eadh a' mhullaich 's a' tional na spréidhe  
 Gu innseag na tulaich, air iomain 's a' Chéitein,  
 Bu neoichionntach mànrán mo ghràidh-sa gun bheud ann ;  
 'S gum b'ait leam bhith 'g éisdeachd ri sgeula mo rùin.

*William Ross. (20)*

<sup>(1)</sup> cùr' = cùbhraidh.

## 3. Translate into Gaelic :—

Next morning, Sunday, June 29th, the boatmen knew not where they were. However, at last they made to the point of Waternish,<sup>(2)</sup> in the west corner of Skye, where they thought to have landed, but found the place possessed by a body of forces, who had three boats near the shore. One on board one of the boats fired at them to make them bring-to; but they rowed away as fast as they could, because there were several ships of war within sight. They got into a creek, and there remained some short time to rest the men, who had been all night at work, and to get their dinners of what provisions they had along with them. As soon as they could they set forward again. It was very lucky for them that it was calm then, for otherwise they must have perished or have been taken.

*Prof. Sanford Terry. (20)*

<sup>(2)</sup> Bhatairnis.

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

John MacCodrum, the famous Uist bard, paid a visit to his clanswoman, the celebrated Flora Macdonald, at her residence in Kingsburgh (Cinnseborg), Skye. He was admitted by a maid, who was not taken with the bard's shabby appearance, and directed to the kitchen.

"Where have you come from?" asked the maid, somewhat loudly and sharply.

"From Uist," said John.

"Oh," said the girl, "is it true that Clanranald is dead?"

"If not, a crime has been committed," was the reply

"What do you mean?"

"He was buried a fortnight ago."

The mistress of the house, hearing the loud talking, enters, recognizes, and welcomes the bard. (20)

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

## GAELIC

## HIGHER GRADE—(FIRST PAPER)

Tuesday, 27th 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 :—

Dh' fhalbh a' ghrian, ach bha fathast àirde nan speur air an òradh le gathannaibh àghmhor, a' lùbadh a nuas gu fann fathast air an t-saoghal, 's 'ga bheannachadh le eadar-sholus an anmoich. Bha an ceò a' sgaoileadh sìos air an leacainn, agus bha 'n t-ám dhomh nis am monadh fhàgail. Bu bheannaichte an t-sàmhchair a bha mach air feadh an domhain; bha còrr fhuaim ann, ach cha bu chulaidh-eagail no uamhais iad—torman nan allt, mar bha iad a' tuiteam leis an aonach o chreig gu creig; sgrìach na h-iolaire, 's i 'g itealaich air bile na creachainn, ag iarraidh a h-àil air an aisridh chorraich; an fheadag ghuanach o thom gu tom; gogail a' choilich-ruaidh 'gam dhoichioll o'n bheinn; a' chearc a' gairm a h-àil fo a sgéith, agus miogadaich nan gabhar ag iarraidh nam meann. O! cia lìonmhor mìle beò-chreutair air feadh an t-saoghail, smuainich mi, a bha 'sa' cheart ám so a' dol gu tàmh fo shùil-choimhead an Fhreasdail sin a bha faireadh thairis orra, agus a dh' uidheamaich àite tàimh do gach aon aca fa leth.

*N. Macleod. (25)*

2. Translate into idiomatic English :—

*Do Shir Eachann Ghearrloch*

Shir Eachainn Ruaidh nan curaidhean  
 Bu fhraochail guineach colg,  
 Nam pìob, nam pìc 's nam brataichean,  
 'S nan dubh-lann sgaiteach gorm;  
 D'an dualchas mòr-euchd gaisgeantachd  
 Le tapadh air chùl airm,  
 'S cha b'iongnadh leinn an dùthchas sin  
 Bhith leantainn dlùth an ainm.

'S craobh mhullaich dhosrach àghmhor thu  
 De'n abhall as àirde spéis ;  
 Gur droigheann ri do dhùsgadh thu,  
 Gur seabhag sùil-ghorm treun ;  
 Gur leòghann nach gabh mùiseag thu  
 Nan cuirt' gu d' chunntas streup ;  
 Gur didean do do chàirdean thu  
 Nach téid gun spàirn a leum.

Sàr cheannard air sluagh curant' thu  
 A dhòirteadh fuil 's a' bhlàr ;  
 Bhiodh cuimhneach ciallach faicilleach,  
 Neo-lapach anns an spàirn ;  
 Bhiodh reubach fuilteach faobharach  
 'S a' chaonnaig air an nàmh,  
 'S bu treunail colg nan Eachannach  
 Toirt euchd nan arm thar chàch.

Gur sealgair sìthne an garbhlach thu  
 Nan agh bu mheanmnaich leum,  
 Is cuilbheir caol neo-dhearmadach  
 'Nad gheal-ghlaic gun chearb gleus ;  
 Is t' fheara lùthmhor astarach  
 Gun airsneal as do dhéidh ;  
 'S bu cheòl gu min do chaiseamachd  
 'N uair dh'fhaclaicheadh do bheul.

*William Ross.* (25)

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

Dála na mBreathnach, iar n-imtheacht na Rómhánach uatha, tógbhuid cladh<sup>(1)</sup> fód ó mhuir go muir idir iad féin is Scuit is Picti. Agus ar n-a chlos do chine Scuit agus do na Pictibh gur thréigeadar Rómhánaigh na Breathnaigh, lingid ar na Breathnachaibh agus bristear an cladh agus airgthear an tír leo, gur bh'éigin do na Breathnachaibh teachta do chur an treas feacht go Rómhánachaibh 'ga iarraidh orra gan a léigean d'a námhaid bheith ag déanamh a luit go díbheargach,<sup>(2)</sup> amhail do bhádar. Leis sin cuirid Rómhánaigh légion oile d'a bhfurtacht ; agus ar rochtain na Breatan dóibh tugadar féin is Scuit is Picti iomad coinbhliocht d'a chéile, gur ruagadar Rómhánaigh tar teorainn<sup>(3)</sup> an mhúir do luaidheamar amach iad. Agus

(1) cladh, a dyke, rampart.

(2) díbheargach, vengeful, marauding.

(3) teora, g. teorann, f., a boundary.

ar bhfóirithin na mBreathnach mar sin dhóibh, adubhradar na Rómhánaigh riú nachar shochar dóibh fhéin teacht ar eachtra d'a bhfurtacht ní budh mhó, agus a fhéachain créad an modh 'n-a bhféadfadaois iad féin do chumhdach nó do dhíon orra. Ar n-imtheacht iomorro do shluagh na Rómhánach uatha do thionnscanadar an cladh atá ó mhuir go muir idir Albain is Breatain do dhéanamh d'obair chloiche, agus ocht dtroighthe 'n-a thighe, agus dá thriugh déag d'airde ann, do réir Bheda san 5 caibidil de'n chéid-leabhar do Stair na Sacsan.

*Geoffrey Keating. (25)*

## GAELIC

### HIGHER GRADE—(SECOND PAPER)

Tuesday, 27th 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

*Na h-eoin*

Cha bu toigh leam a' Chuthag riamh, | is cha toigh leam fhathast i. | Tha cuimhne agam aon mhaduinn, | is mi fann le cion mo bhrochain, | gun d'rinn i dìol | cho sgreadaidh orm | is nach robh mi gu maith | fad na bliadhna as a dhéidh. | Chuala mi a' ghogaid uair is uair | a' gùgail gu ladarna | gu robh an samhradh air tighinn, | agus mi fhéin | 'gam dhubh-reothadh | leis an fhuachd | ri taobh braidseal mór teine. | Is tha fios | aig a' bhaile gu léir | gum bi a' bhaobh | ri leughadh nan cupannan, | ged tha meomhair na fàidheadaireachd | d'a dìth. | Dh'innis i dhomh fhéin | o chionn còrr is fichead bliadhna | nach faicinn | ach dà nollaig eile; | dh'innis i dhomh an uiridh, | is aodann oirre | cho fada ris a' chlobha, | gu faicinn a dhà dheug eile. | Ach nach dìomhain domhsa | bhi leudachadh | air caithe-beatha na Cuthaige? | Mar thuirt an Calaman bochd, | is ceann-crom air leis an nàire: | "Am faca tu fhéin riamh | eun laghach 'sam bith | a' breith uighean | an tighean chàich?"

*K. MacLeod.* (10)

## GAELIC

## HIGHER GRADE—(SECOND PAPER)

Tuesday, 27th 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 on any one of the following subjects:—

- (a) Is tric bha dìchioll air thoiseach.
- (b) A walking tour in the Highlands or Islands.
- (c) The wild bird or animal life in your native district.
- (d) St. Columba.

(30)

2. Turn into idiomatic Gaelic :—
- (a) A tree is known by its fruit.
  - (b) You would be a fool if you were to go security for him.
  - (c) Would that I were freed from these bonds !
  - (d) They were striking him and her. (10)
3. Translate carefully into English :—
- (a) Na ceannaich an fheadil sin, is i air lobhadh.
  - (b) Chan fhuilear dhuit trì slatan de'n anart sin gu léine.
  - (c) Cha trom leis a' chaora a h-olann,  
'S cha truimide colann ciall.
  - (d) Nara slàn do fhear na fanaid thuirt ruinn  
"Caimbeul." (10)

## SECTION II

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

4. Give the Gaelic loan-words from six of the following Latin words :—pallium, quaestio, census, planta, crux, exemplum, imago, mensa. (5)

5. What territories are associated with each of the following :—Mac Mhic Ailein, Mac Cailein, Mac Dhomhnaill Duibh, Domhnall Gorm Mór, Siol Torcuill ? (5)

6. Give the Gaelic for :—Firth of Clyde, Sound of Sleat, Loch Linnhe, The Minch, The Atlantic Ocean. (5)

7. State briefly the significance of any *five* of the following terms :—"The Sudreys," "Brieve," "Seanchaidh," "Earasaid," "Am Breacan Uallach," "Fuidheall feachd," "Teine-éiginn," "Crann-tàra." (5)

8. Suggest Gaelic equivalents for :—receipt, risk (verb), grate, lead pencil, cigarette, wireless message, motor-boat. (5)

9. State briefly the characteristics of the poetry of William Ross or the prose of Donald Mackechnie. (5)

10. Quote a stanza from your favourite Gaelic poet and explain its metrical build. (5)



## SPANISH

## LOWER GRADE

Wednesday, 28th March—9.30 A.M. to 12 NOON

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

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

1. Translate into English :—

Por la misma época en que se terminaba la Reconquista apareció en España un hombre que luego había de ser famoso en el mundo entero. Se llamaba Cristóbal Colón. ¿Quién era y de dónde venía? La crítica histórica moderna tiene en este punto un gran problema que resolver. Por mucho tiempo se ha dado como seguro que el nombre de Colón era Cristóforo Colombo y que había nacido en la ciudad de Génova. Actualmente se tienen muchas dudas acerca de eso pues se ha demostrado la falsedad de algunos documentos en que tal afirmación se fundaba y existen muchos partidarios de la teoría de que Colón era español. Varias ciudades de España se disputan el haberle visto nacer; pero lo que tiene más probabilidades es que Colón fuese de Pontevedra. La explicación que se da de que él ocultase su origen es que era judío y temía encontrar en la corte católica grandes obstáculos para sus proyectos.

No se ha demostrado nada de una manera positiva y en realidad esto importa poco. Cualquiera que fuese la nacionalidad de Colón es indudable que el descubrimiento de América se debe a España. Sólo la reina Isabel entre muchos reyes de Europa comprendió y animó al navegante, sólo los españoles se atrevieron a una empresa tan arriesgada y españolas eran las tres carabelas que salieron de un puerto español para llegar por primera vez a tierras americanas. Considerado el descubrimiento de América como una gran empresa nacional el factor Colón pierde mucho de su importancia y el mérito es del impulso colectivo que le acompañó en su obra.

2. Translate into English :—

*Una Tempestad.*

De pronto, mientras subíamos un cerro elevado y roqueño por la orilla del mar, el ciclón se desencadenó con toda su furia cogiéndonos de frente. ¡Y qué lluvia! Es dudoso que fuera mayor durante el diluvio universal, a juzgar por sus efectos aquí. ¡Más de dos mil quinientas personas, no se sabe cuantos miles de cabezas de ganado ahogadas, y las plantaciones perdidas en su totalidad por el desbordamiento de los ríos, tal fué la obra de pocas horas de lluvia!

Quisiera enterarle de los pormenores de tan terrible calamidad. Mas Ud. no me creería, aunque sea imposible exagerar. Cien veces durante mi viaje creí que había llegado mi último día. Al fin llegamos a una casa; pero apenas hubimos entrado cuando se cayó el techo. Fué preciso huir. Eran las dos de la tarde. En este momento el ciclón empezó a rugir de una manera espantosa. (20)

3. Translate into Spanish :—

A young man had gone abroad in order to make money. He had left his father and mother at home. After many years he returned and went to see his parents. He entered their house, but he had been so long absent that they did not know him.

“Have you seen my son in the country you come from?” his father asked. “Tell me where he is and what he is doing.” “I shall tell you all that I know,” was the reply. “He is rich now and sends you this money. And he himself is at present not far from here.” (20)

4. Translate into Spanish :—

- (1) The voyage was very pleasant in spite of the weather.
- (2) I congratulated him on his success in the examination.
- (3) Do you know that your friend Charles has been here since this morning?
- (4) Our dog will be 14 next Tuesday.
- (5) We arrived at the station so late that we missed the train. (10)

## SPANISH

## HIGHER GRADE—(FIRST PAPER)

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

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

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

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

*La Corrida de Toros.*

No es cosa fácil por cierto señalar los tiempos o fijar la época en que comenzaron en España los espectáculos grandiosos que, sin ceder en magnificencia y poderío a los juegos circenses de los Romanos, tienen sobre ellos la ventaja de presentar a los luchadores, no como siervos envilecidos, sino cual hombres valerosos, ágiles y diestros, casando siempre los mayores esfuerzos del ánimo con las gentilezas y bizarrías de la persona.

Ello es que si tales regocijos fueran de origen romano, por fuerza habían de haberse encontrado en los escritos, monedas, mármoles o otras reliquias de aquella civilización, que con tal abundancia se encuentran en las bibliotecas, museos y gabinetes de los antiquarios, algún signo, alguna prueba o otro testimonio irrecusable que presentara al hombre burlando la ferocidad del toro, o rindiéndolo o postrándolo por el hierro o por la fuerza.

Ninguno de tantos investigadores como desde el renacimiento de las letras se han ocupado en revelarnos la manera de existir del pueblo rey, han hablado de usos y cosas que por ser tan importantes y de tal grandiosidad, no hubieran escapado a su curiosidad e investigación ; de modo que casi debe tenerse por sentado y cierto que los espectáculos del circo español no tienen parentesco alguno con los del circo romano.

*El Solitario.* (25)

## 2. Translate into English:—

*Rima.*

Saeta que voladora  
Cruza, arrojada al azar,  
Sin adivinarse donde  
Temblando se clavará ;

Hoja que del árbol seca  
Arrebata el vendaval,  
Sin que nadie acierte el surco  
Donde a caer volverá ;

Gigante ola que el viento  
Riza y empuja en el mar,  
Y rueda y pasa, y no sabe  
Qué playa buscando va ;

Luz que en cercos temblorosos  
Brilla, próxima a expirar,  
Ignorándose cual de ellos  
El último brillará ;

Eso soy yo, que al acaso  
Cruzo el mundo, sin pensar  
De donde vengo, ni adónde  
Mis pasos me llevarán.

*Gustavo Adolfo Bécquer. (20)*

## 3. Translate into English:—

*La Muerte de un Pobre.*

*Marqués* : Ciertamente que es una desgracia, pero ¿ qué quieres que haga el muchacho ?

*Don Pablo* : Nada : estarse con los brazos cruzados llorando al difunto.

*Marqués* : ¿ También te parece mal que sienta la muerte de un amigo ?

*Don Pablo* : Me parece mal que no tome una determinación.

*Marqués* : ¿ Cuál ?

*Don Pablo* : Irse ahora mismo a Madrid, ver si el difunto ha dejado algo y reclamar judicialmente el pago de la deuda.

*Marqués* : ¿ Estás en juicio ? Eduardo ha muerto punto menos que en la miseria, y en ningún caso había de consentir Rafael en infamar su memoria.

*Don Pablo* : Claro es : caballero andante no puede tener sentido común. Pues si Eduardo ha muerto en la miseria su padre es riquísimo : acúdase a él inmediatamente.

*Marqués* : El señor Ibañez no está en España.

*Don Pablo* : Correos hay.

*Marqués* : Ese hombre es un avaro.

*Don Pablo* : Pero ¿ qué se pierde en probar ?

*Marqués* : Mira, *Pablo* : el señor Ibáñez no debe nada a Rafael, y Rafael no puede pedirle nada. Tu sobrino tuvo un día la satisfacción y la honra de portarse como caballero, como hombre de bien, como buen amigo, a costa de doscientos mil reales. ¿ Y quieres que te diga la verdad ? Semejante satisfacción, semejante honra, no me parecen caras.

*Don Pablo* : Perfectamente, señor *Marqués* : estamos enterados, y no hay que hablar más del asunto. Beso a Ud. la mano. (20)

## SPANISH

### HIGHER GRADE—(SECOND PAPER)

Wednesday, 28th March—1.0 P.M. to 1.30 P.M.

*This Paper must not be seen by any candidate.*

*To be read out by the Teacher at 1.0 P.M. in the presence of the Supervising Officer.*

**To be written by the candidates on the separate sheets provided, which must be collected before the Second 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 :—(.) ' punto,' (,) ' coma,' (;) ' punto y coma.'*

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

### DICTATION

Bajo el imperio firme, | a par que templado, | de Don Fernando | y Doña Isabel, | hiciéronse | las grandes reformas | que hemos referido, | sin producir | la menor convulsión | en el Estado. | Lejos de esto, | se trajeron a orden | y armonía | los elementos discordes | que antes estremecían | con sus choques | el país, | y se consiguió | apartar | el turbulento espíritu | de los nobles | de las riñas | y facciones, | encaminándolo | a las honoríficas carreras públicas | de las armas | y de las letras. | El pueblo, | en general, | viendo asegurados | los derechos particulares, | se entregaba tranquilamente | a todas las labores útiles. | El comercio | no había caído aún, | como lo manifiestan abundantemente | las leyes de entonces, | en el desprecio | a que llegó | en los tiempos posteriores. | El trato | y comunicación | del país | con los extranjeros | se extendía más y más | de día en día; | veíanse | sus cónsules y agentes | en todos los puertos principales | del Mediterráneo | y del Báltico, | y el marinero español, | en lugar | de reducirse míseramente | a la navegación | de cabotaje, | se lanzaba | con audacia | a través del grande Océano, | a las regiones de Occidente. (10)

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### SPANISH

#### HIGHER GRADE—(SECOND PAPER)

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

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

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

## 1. Translate into Spanish :—

“ What’s the matter, Samson ? ” Francis asked kindly. “ Why are you crying ? ” “ I’m heart-broken,” he said. “ Tiny will not speak to me any more ! ” “ But I thought you were such good friends ! ” Francis exclaimed. “ What’s happened between you ? ”

“ It was all my fault ! ” the Strong Man, who had the heart of a child, replied disconsolately. “ I bowed three times after the performance to get the better of Tiny, who bowed only twice. He says he won’t speak to me again, because I’ve been so selfish ! ”

Frank and his cousin had difficulty in concealing their amusement. Only the fact that they could see that the Strong Man was really miserable kept them from laughing.

“ Well, don’t cry,” Francis consoled him. “ I’ll go and find Tiny at once and get him to forgive you ! ”

As soon as they were out of sight of the Strong Man, the two children burst out laughing. “ They’re just like children, though they are grown men,” Francis said. “ Hullo, here comes Tiny now. I’ll speak to him.”

But before either Frank or Francis could say anything, Tiny spoke himself, in a broken little voice, for he, too, was almost in tears. “ I don’t know what to do ! ” he said. “ I’ve told Samson I won’t speak to him again, just because he played a joke on me, and now I don’t know who is going to lift me into bed to-night ! ”

(40)

## 2. Translate into Spanish :—

(1) The more trouble you take, the more likely you are to succeed.

(2) He tripped against a stone and very nearly broke his leg.

(3) It is at least six years since I was last in Madrid.

(4) We are very glad to hear that you have been well this winter.

(5) As soon as he arrives, I shall tell him the whole story.

(15)

3. Write in Spanish a continuous story, based on the following summary. The story should be about one and a half times the length of your answer to Question 1, and

should on no account exceed twice that length. **Failure to comply with this instruction may lead to a loss of marks.**

Fisherman has two sons—fond of sea—younger boy out alone in small boat—loses oars<sup>(1)</sup>—boat drifts away<sup>(2)</sup>—lands on lonely island—adventure and return home. (20)

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

<sup>(1)</sup> oars = remos.

<sup>(2)</sup> drifts away = va arrastrado por la corriente.

## MATHEMATICS

### LOWER GRADE—(FIRST PAPER)

Tuesday, 20th March—9.30 A.M. to 11.30 A.M.

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

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

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

### SECTION I

*All the questions in this Section should be attempted.*

1. Prove that the straight line joining the mid-points of two sides of a triangle is parallel to the third side and equal to half of it. (12)

2. Prove, for the case of an acute-angled triangle, that the three perpendicular bisectors of the sides meet in a point, and that this point is equidistant from the three vertices. Draw the figure for the case in which the triangle is obtuse-angled. (13)



3. Make and prove the construction for finding the length of the side of a square equal in area to a given rectangle. (12)

4. Prove that the common chord of two circles is at right angles to the straight line joining their centres and is bisected by it. (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. Prove that the quadrilateral formed by joining the mid-points of the sides of a kite figure (two isosceles triangles on opposite sides of a common base) is a rectangle. (Section I, 1.)

(You may assume the chief properties of the kite figure.) (17)

6. Prove that the centre of the circumscribing circle of an isosceles triangle is equidistant from the middle points of the equal sides.

If the vertical angle of the isosceles triangle measures  $120^\circ$  and the equal sides are each  $2\frac{1}{2}$  inches long, find, otherwise than by measurement, the radius of the circumscribing circle. (Section I, 2.) (17)

7. State (without proof) what is the *complete* plane locus of the vertices of triangles on a given base and of given area, and also what is the *complete* plane locus of the points at which a given finite straight line subtends a given angle.

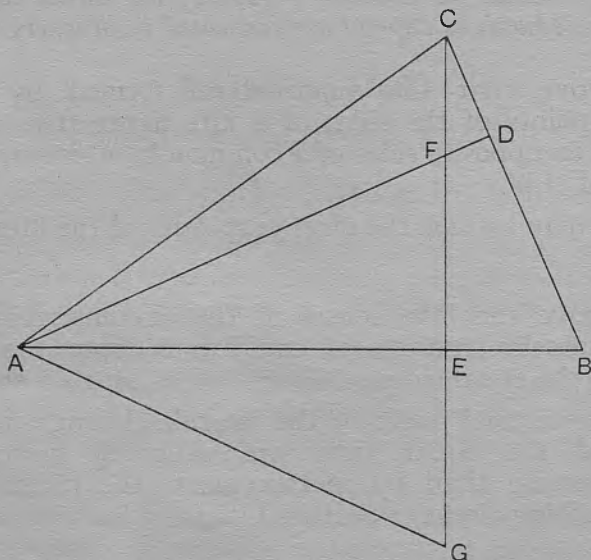
Draw any triangle  $PQR$ . On  $QR$  describe a triangle having the same area as  $PQR$ , and a vertical angle equal to half the vertical angle  $RPQ$ . Prove your construction. (17)

8. The bisectors of the exterior angles at the vertices  $A$  and  $C$  of the triangle  $ABC$  meet at  $Q$ . Prove that the angle  $AQC$  is half of the sum of the interior angles at  $A$  and  $C$ . (17)

9. In the figure (*which need not be copied in your examination book*),  $CE$  and  $AD$  are perpendicular respectively to  $AB$  and  $BC$ , and  $CE$  is produced to  $G$ , so that  $EG = FE$ .

Prove that—

- (a) a circle can be described to pass through the points  $A, E, D, C$  ;  
 (b) the angle  $BCE$  is equal to the angle  $DAB$  ; and a circle can be described to pass through the points  $A, G, B, C$ . (17)



## MATHEMATICS

LOWER GRADE—(SECOND PAPER)

Tuesday, 20th 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. Find by means of your tables the values of—

$$(a) \sqrt{\frac{6.73 \times 496}{13.75 \times 9.99}};$$

$$(b) 7.624^3 - 3.812^3. \quad (13)$$

2. Find the total area of the walls of a room 20 feet 9 inches long, 17 feet 6 inches broad, and 12 feet 3 inches high, if the windows, fireplace and door together measure 157 sq. feet 18 sq. inches.

Find also the cost of painting the walls at 1s. 10½d. per square yard. (13)

3. (a) Solve the equations—

$$(i) \frac{1}{x-2} - \frac{3}{x-1} - \frac{4}{(x-1)^2} = 0$$

(values of  $x$  correct to the nearest tenth).

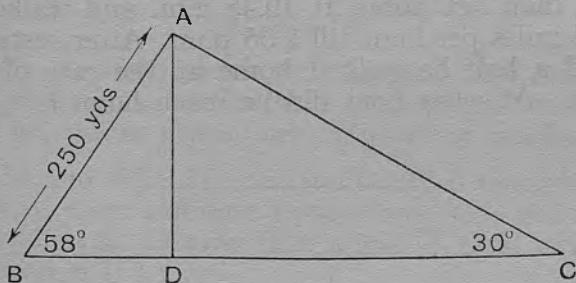
$$(ii) \frac{x-4}{5} - \frac{y+6}{4} = 0; \quad \frac{2x-9}{3} + \frac{3y+6}{5} = 3.$$

(b) Simplify—

$$\left( \frac{a-b}{a+b} - \frac{a+b}{a-b} \right) \div \left( \frac{b-a}{b+a} + \frac{b+a}{b-a} \right). \quad (13)$$

4.  $ABC$  is the plan of a triangular field, and  $AD$  is perpendicular to  $BC$ .

Calculate from the data given on the plan the lengths of  $BD$ ,  $DA$ ,  $AC$  and  $DC$ . (13)



## SECTION II

Only THREE questions should be attempted from this Section.

5. Factorize completely—

- (i)  $xy^2 - a^2y^2 - ax + a^3$ ;  
 (ii)  $3p^4 - 3p^2q^2 - 216q^4$ ;  
 (iii)  $(x - 4)(x + 4)^2 - (x - 4)(2x - 1)^2$ ;  
 (iv)  $4a^2 - b^2 - c^2 + 2bc$ . (16)

6. A grocer has two kinds of tea. When he mixes the cheaper with the dearer in the ratio 1:6, the mixture is worth 2s. 7d. per lb.; and when he mixes the cheaper with the dearer in the ratio 6:1, the mixture is worth 2s. 2d. per lb.

Find the value of each kind of tea. (16)

7. Write down the formula for the volume of a sphere in terms of its radius.

The external radius of a hollow metal sphere weighing  $x$  pounds is  $r$  inches. If it were solid it would weigh  $y$  pounds. Assuming that it is of uniform thickness  $t$  inches, prove that—

$$\frac{x}{y} = \frac{r^3 - (r - t)^3}{r^3}.$$

Use this result to find  $t$  when  $x = 21$ ,  $y = 24$ ,  $r = 5$ . (16)

8. If  $a$ ,  $b$ ,  $c$ ,  $d$  are in proportion, prove that  $ad = bc$ , and that—

$$\frac{a^2 + 2c^2}{b^2 + 2d^2} = \frac{2a^2 + c^2}{2b^2 + d^2}.$$

What number must be subtracted from each of the numbers 7, 10, 13, 25, in order to leave four numbers which are in proportion? (16)

9. A man left home at 10.45 a.m. and walked at the rate of 4 miles per hour till 2.35 p.m. After resting for an hour and a half he walked home at the rate of  $3\frac{1}{2}$  miles per hour. At what hour did he reach home? (16)

## MATHEMATICS

## HIGHER GRADE—(FIRST PAPER)

Tuesday, 20th March—9.30 A.M. to 11.30 A.M.

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

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

*Four-place logarithmic tables are provided.*

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

## SECTION I

*All the questions in this Section should be attempted.*

1. Prove that an angle at the circumference of a circle is half the angle at the centre standing on the same arc.

(13)

2. Construct a fourth proportional to three given straight lines, proving your construction.

(12)

3. Obtain the equation of a straight line in the form

$$\frac{x}{a} + \frac{y}{b} = 1, \text{ interpreting the constants } a \text{ and } b. \quad (12)$$

4. Prove that the area of a triangle is  $\frac{1}{2} bc \sin A$ , whether  $A$  be obtuse, a right angle or acute. (You may assume that the area of a triangle is measured by half the product of the base and the altitude.)

(12)

## SECTION II

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

*The propositions in Section I (above) on which certain of these deductions depend are indicated in brackets.*

5.  $APB$  and  $AQB$  are two right-angled triangles on the same side of their common hypotenuse  $AB$ , and  $C$  is the mid-point of  $AB$ . Prove that angle  $PCQ$  is twice angle  $PAQ$ . (Section I, 1.)

(17)

6.  $OX$  and  $OY$  are rectangular axes.  $A$  is the point  $(3, 0)$ ,  $B$  is  $(4, 0)$ ,  $C$  is  $(0, 6)$  and  $D$  is  $(0, 4)$ .  $AC$  and  $BD$  intersect at  $P$ .

Find the equation of the line  $OP$ , and show that angle  $POX = 45^\circ$ . (Section I, 3.) (17)

7. Two circles intersect at  $A$ , and the tangents to them at  $A$  meet the circles again at  $B$  and  $C$ . Prove that  $AB$  and  $AC$  are proportional to the diameters of the circles. (17)

8. A right pyramid  $OABCD$  stands on a square base  $ABCD$ , of side 2 feet, and the slant faces  $OAB$ ,  $OBC$ , etc. are equilateral triangles. Make a sketch of the section of the pyramid by the plane through the vertex and the mid-points of  $AB$  and  $CD$ , indicating in surd form the lengths of the sides of the section. Calculate the height of the pyramid and show that its volume is  $\frac{4\sqrt{2}}{3}$  cubic feet. (17)

9. From a ship sailing due North two lighthouses are seen in a line due West. After an hour's sailing, the bearing of the farther lighthouse is S.W. and of the nearer  $\theta^\circ$  W. of S. If the lighthouses are  $m$  miles apart, prove that the ship is sailing at  $\frac{m}{1 - \tan \theta}$  miles an hour. (17)

## MATHEMATICS

### HIGHER GRADE—(SECOND PAPER)

Tuesday, 20th 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. The rain that falls on a flat roof, 40 ft. 3 in. by 17 ft. 6 in., is collected in a cylindrical tank, 3 ft. 6 in. in diameter. After a period of rain the water in the tank is found to have risen 11 inches. Find, correct to the nearest tenth of an inch, the depth of rainfall in the period. ( $\pi = \frac{22}{7}$ .) (12)

2. A retailer buys 64 tons of goods at 3s. 6d. per stone, and is allowed a trade discount of  $4\frac{1}{2}$  per cent. If he sells the goods at  $3\frac{1}{2}$ d. per lb., find his total profit, correct to the nearest penny. (12)

3. (a) Solve the equations—

$$x + y + z = 4$$

$$3x + 4y - z = 18$$

$$4x - 8y - 5z = 1.$$

(b) Find the values of  $y$  which satisfy the equation

$$y + \frac{1}{a} = \frac{1}{y} + a.$$

Hence find the values of  $x$  which satisfy the equation

$$\frac{x + a - 1}{x} + \frac{1}{a} = \frac{x}{x + a - 1} + a. \quad (12)$$

4. (a) Factorize  $9x^4 - 10x^2y^2 + y^4$ .

(b) If  $x = a^3 + b^3$  and  $y = \frac{1}{a + b}$ , prove that

$$(a^2 + b^2)(xy - b^2)(a^2 - xy) = ab(x^2y^2 - a^2b^2). \quad (12)$$

5. In any triangle, prove that

$$\tan \frac{1}{2}(B - C) = \frac{b - c}{b + c} \cot \frac{1}{2}A.$$

If  $A = 53^\circ 8'$ ,  $b = 6$ ,  $c = 5$ , find  $B$  and  $C$ . (12)

6. Write down the formulae for  $\sin 2A$  and  $\cos 2A$ , and deduce a formula for  $\tan 2A$  in terms of  $\tan A$ .

Prove that

$$(i) \sin 4A = 4 \sin A \cos^3 A - 4 \sin^3 A \cos A,$$

$$(ii) \sin A (1 + \tan A) + \cos A (1 + \cot A) =$$

$$\frac{1}{\sin A} + \frac{1}{\cos A}. \quad (12)$$

## SECTION II

Only two questions should be attempted from this Section.

7. If  $\alpha$  and  $\beta$  are the roots of the equation

$$x^2 + px + q = 0$$

prove that  $\alpha + \beta = -p$ ,  $\alpha\beta = q$ .

If  $\alpha$  and  $\beta$  have the values given above and  $\gamma$  is a root of the equation  $x^2 + px + r = 0$ , prove that

$$(\gamma - \alpha)(\gamma - \beta) = q - r. \quad (14)$$

8. Define  $\log_a N$ , and prove that  $\log_a MN = \log_a M + \log_a N$ .

If  $5^{6-4x} = 2^{x+3}$ , prove that  $x = \frac{3(3 \log 5 - 1)}{3 \log 5 + 1}$ , where the base of the logarithms is 10. (14)

9. Draw the graph of  $\cos x^\circ - \sin x^\circ$  for values of  $x$  between 0 and 180, taking values of  $x$  at intervals of 15 for plotting points.

Find from your graph a solution of the equation  $\cos x^\circ = \sin x^\circ$ , and also the numerically greatest value (independent of sign) of  $\cos x^\circ - \sin x^\circ$  and the corresponding value of  $x$ . (14)

10. Three positive numbers are in arithmetical progression. The sum of their squares is 210, and the product of the first and last is 55. Find the numbers.

Find also the sum of ten terms of the arithmetical series of which the first three terms are these numbers in descending order of magnitude. (14)

## MATHEMATICS (ARITHMETIC)

Tuesday, 20th 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. The cost of running a motor-car for 875 miles is £11 18s. 0d. Find, to the nearest hundredth of a penny, the cost per mile. (7)

2. 11,368 half-crown tickets for a lottery are issued. One-seventh of the sum subscribed is taken for expenses, and the remainder goes to three prize-winners in the proportion of 9 : 4 : 1. Find the value of each prize. (11)

3. A certain ore yields 17 per cent. of its weight of metal, and requires  $2\frac{1}{2}$  times its own weight of coal to smelt it. If the ore costs 17s. 6d. a ton and the coal 15s. a ton, find, to the nearest penny, the cost of the material required to produce a ton of the metal. (13)

4. A house is sold for £2,225 at a loss of 15 per cent. If it had been sold for £2,400, what would have been the approximate loss or gain per cent., to one decimal place? (Neglect fractions of £1 in your calculations.) (12)

5. A rectangular plate is cut from sheet metal that weighs 1.4 gm. per sq. cm. The plate measures 13 cm. by 8 cm., and has six circular rivet-holes of diameter 1 cm. drilled in it. Find its weight. (Take  $\pi = \frac{22}{7}$ .) (12)

6. In a company of 16 men and 13 women it is found that one man is 6 ft. in height, four are 5 ft. 11 in., four are 5 ft. 10 in., six are 5 ft. 9 in., and one is 5 ft. 8 in. Of the women, one is 5 ft. 10 in., one is 5 ft. 9 in., three are 5 ft. 8 in., five are 5 ft. 7 in., and three are 5 ft. 6 in.

Find, to the nearest inch, the average height (i) of the men, (ii) of the women, and (iii) of the whole company. (12)

7. A stack of road metal, in the shape of a triangular prism lying lengthwise, is 48 yards long, 8 feet high, and 12 feet wide at the ground line. If it averages a ton weight for every 36 cubic feet, find its value at 8s. 3d. a ton. (13)

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## ELEMENTARY ANALYSIS

ADDITIONAL MATHEMATICAL SUBJECT  
(Higher Grade)

Wednesday, 21st March—9.30 A.M. to 12 NOON.

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

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

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

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

## SECTION I

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

1. (a) If  $\omega = \frac{-1 + i\sqrt{3}}{2}$ , prove that  $x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x + \omega y + \omega^2 z)(x + \omega^2 y + \omega z)$ .

• (b) By inspection, find values of  $y$  and  $z$  that will make  $x^3 - 6x + 9$  identical with  $x^3 + y^3 + z^3 - 3xyz$ , and use the result in (a) to solve completely the equation  $x^3 - 6x + 9 = 0$ . (15)

2. Obtain from first principles the number of combinations of  $n$  things taken  $r$  at a time.

Show that the number of ways of forming a team of eleven members, by selecting nine of a first and two of a second eleven is 3025. (15)

3. Assuming that the infinite series involved may be multiplied together as if finite, prove that the coefficient of  $x^n$  in the expansion of

$(1 + ax + \frac{a^2x^2}{2!} + \frac{a^3x^3}{3!} + \dots)(1 + bx + \frac{b^2x^2}{2!} + \frac{b^3x^3}{3!} + \dots)$   
is  $(a + b)^n/n!$ .

Show that the coefficient of  $x^{10}$  in the expansion of  $e^{-x}(1 + 3x + \frac{9x^2}{2!} + \frac{27x^3}{3!} + \dots)(1 - x + \frac{x^2}{2!} - \frac{x^3}{3!} + \dots)$  is  $\frac{1}{10!}$ . (15)

4. Differentiate  $x^5$  from first principles. Find the equation of the tangent to the graph  $y = x^5$  at the point (1, 1). Differentiate

$$\cos^2 x \sin 2x, \frac{x}{2x + \frac{x}{3x + 1}}. \quad (15)$$

5. Integrate

$$\frac{3x + 4}{(2x + 1)(x + 3)}, \quad 2 \sin 3x \cos x, \quad \cot^2 x. \quad (15)$$

## SECTION II

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

6. The function

$$y = \frac{1}{(1 + ax)(1 + bx)}$$

has a minimum value when  $x = -\frac{1}{12}$ .

If the graph of the function has a tangent parallel to the straight line

$$y - x = 0$$

where the curve cuts the axis of  $y$ , find the numerical values of  $a$  and  $b$ , and sketch the curve. (20)

7. Prove from first principles that the series

$$1 - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \dots$$

converges.

Prove also that the geometrical progression

$$36 + 30 + 25 + 20\frac{5}{6} + \dots$$

converges; and find how many terms must be taken in order that their sum may differ from the sum to infinity by less than  $\frac{1}{10000}$ .

(Use logarithms.) (20)

8. By using Demoiivre's Theorem or otherwise prove that  
 $2^7 \cos^5 \theta \sin^3 \theta = 6 \sin 2\theta + 2 \sin 4\theta - 2 \sin 6\theta - \sin 8\theta.$

Hence evaluate  $\int_0^{\frac{\pi}{2}} \cos^5 \theta \sin^3 \theta d\theta.$  (20)

9. Assuming the expansion of  $a^x$ , prove that, if  
 $-1 < x < 1$ , then

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

Hence show that, if  $n > 0$ ,

$$\frac{1}{2} \log\left(1 + \frac{1}{n}\right) = \frac{1}{2n+1} + \frac{1}{3(2n+1)^3} + \frac{1}{5(2n+1)^5} + \dots$$

Evaluate  $\log_e 1.2$  to six decimal places. (20)

## GEOMETRY

### ADDITIONAL MATHEMATICAL SUBJECT (Higher Grade)

Wednesday, 28th 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 bisectors of the angles between the straight lines

$$ax^2 + 2hxy + by^2 = 0;$$

What is the equation of the bisectors of the angles between the straight lines

$$a(x-1)^2 + 2h(x-1)(y-2) + b(y-2)^2 = 0?$$

2. Find the equation of the tangent to the circle

$$x^2 + y^2 + 2gx + 2fy + c = 0$$

at the point  $x_1 y_1$  on the circle.

Find the length of the perpendiculars on this tangent from the extremities of the diameter  $x + g = 0$  and prove that their sum is constant for all tangents.

3. Find the value of  $c$  in terms of  $a$  and  $m$ , if the straight line  $y = mx + c$  touch the parabola  $y^2 = 4ax$ .

Find also, in terms of  $a$  and  $m$ , the co-ordinates of the point of contact.

4. The co-ordinates of the middle point of a chord of the ellipse

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

are  $x_0, y_0$ ; prove that the equation of the chord is

$$(x - x_0) \frac{x_0}{a^2} + (y - y_0) \frac{y_0}{b^2} = 0.$$

Prove that the locus of the mid-points of chords of the ellipse

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

which pass through the fixed point  $(f, g)$  is given by the equation

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

5. Find the equation of the normal to the hyperbola

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

at the point  $x_1 y_1$  on the curve.

If  $G$  is the point where this normal meets the axis of  $x$ , find the equation of the straight line through  $G$  perpendicular to either asymptote.

## SECTION II

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

6. Perpendiculars are drawn from a point  $Q$  on the circumcircle of the triangle  $ABC$  to the sides of the triangle. Prove that the feet of these perpendiculars lie on a straight line which bisects the distance of  $Q$  from the orthocentre of the triangle.

7. (a) Perpendiculars  $OD$ ,  $OE$ ,  $OF$ , are drawn from a point  $O$  to the sides  $BC$ ,  $CA$ ,  $AB$ , of a triangle  $ABC$ . Prove that the sum of the squares on  $BD$ ,  $CE$ ,  $AF$ , is equal to the sum of the squares on  $DC$ ,  $EA$ ,  $FB$ .

(b) The perpendiculars from the vertices  $A$ ,  $B$ ,  $C$ , of the triangle  $ABC$  on the opposite sides are  $AD$ ,  $BE$ ,  $CF$ . Prove that the perpendiculars from  $A$ ,  $B$ ,  $C$ , on  $EF$ ,  $FD$ ,  $DE$ , meet in a point.

(You may assume the truth of the converse of the proposition in (a).)

8. A point moves so that the tangents from it to two fixed circles are equal. Prove that its locus is a straight line.

Prove that the radical axes of three circles taken in pairs, when the centres of the circles are not in a straight line, meet in a point at a finite distance. Discuss the cases where the centres are in a straight line.

9. Prove that two straight lines which are each parallel to the same straight line, but not in the same plane with it, are parallel to one another.

The vertical section containing the line of the ridge of a slated roof is a trapezium with parallel sides 10 feet and 20 feet long, and slope sides each 10 feet long. The vertical section at right angles to the ridge is an isosceles triangle whose base is 10 feet long.

Find the slated area.

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## DYNAMICS

ADDITIONAL MATHEMATICAL SUBJECT  
(Higher Grade)

Friday, 23rd 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.  
 $g = 32 \text{ ft./sec.}^2$

## SECTION I

All the questions in this Section should be attempted.

1. What do you understand by *uniform acceleration* ?

Prove the formula connecting the initial velocity, the time, and the space covered, when the acceleration is uniform and in the same straight line as the initial velocity.

Explain why a stone when dropped from the top of a vertical cliff reaches the ground in less time than when dropped from an ascending balloon at the same height. Find the difference in time if the height is 320 feet, and the balloon is ascending at the rate of 16 feet per second. (15)

2. Define the terms *couple* and *moment of a couple*.

Two men are carrying on their shoulders a load of 2 cwt. slung from a uniform horizontal pole 6 feet long, and weighing 14 lb. If, when their shoulders are respectively 10 and 12 inches from the ends of the pole, they bear the total weight equally, find how far from the centre of the pole the point of suspension of the load is. Show also, by means of a *sketch*, on which side of the centre the point of suspension is. (15)

3. State Newton's second law of motion, and define carefully the terms used.

A body of mass 6 lb. and moving with a velocity of 96 feet per second strikes a body of mass 108 lb. which is at rest. With what velocity will the larger body move on, if the smaller body is reduced to rest by the impact ?

If the bodies had moved on with the same velocity, what would the common velocity have been ?

(In both cases the line of motion after impact is the same as before impact.) (15)

4. Explain why, in a liquid at rest, the pressure is the same at all points in the same horizontal plane.

A tube closed at the lower end and open at the upper end and 95 cm. long stands vertically, full of mercury. What is the pressure per square centimetre at the lower end, if the barometer reading is 76 cm. ?

(1 c.c. of mercury weighs 13·6 grams.)

If the open end is now closed by means of the thumb and the tube is inverted, find the pressure per square centimetre exerted on the thumb by the mercury, when the tube makes an angle of  $60^\circ$  with the vertical. (15)

## SECTION II

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

5. A pile-driver weighing  $2\frac{1}{2}$  cwt. falls through a height of 16 feet on to a pile. Assuming that there is no rebound, and that the "loss" of kinetic energy (transformed into sound and heat) is negligible, find the average resistance against which the pile moves, if it is driven  $1\frac{1}{2}$  inches into the ground by the blow.

Find also the time taken by the pile to penetrate the distance of  $1\frac{1}{2}$  inches. (20)

6. Explain why a balloon rises in still air.

The maximum capacity of the envelope of a balloon is 50,000 litres, and its gross weight when deflated is 30,000 grams.

Find the greatest weight which this balloon can lift in a still atmosphere weighing 1·296 grams per litre, if the envelope is inflated with a gas weighing 0·356 gram per litre. (20)

7. State the laws of statical friction.

A small ball to which a thread is attached rests on a rough inclined plane whose inclination to the horizon is  $\alpha$ , the inclination of the thread to the horizon being  $2\alpha$ . If the ball is on the point of moving up the plane when the



tension of the thread is half the weight of the ball, prove that the coefficient of friction is given by the equation:—

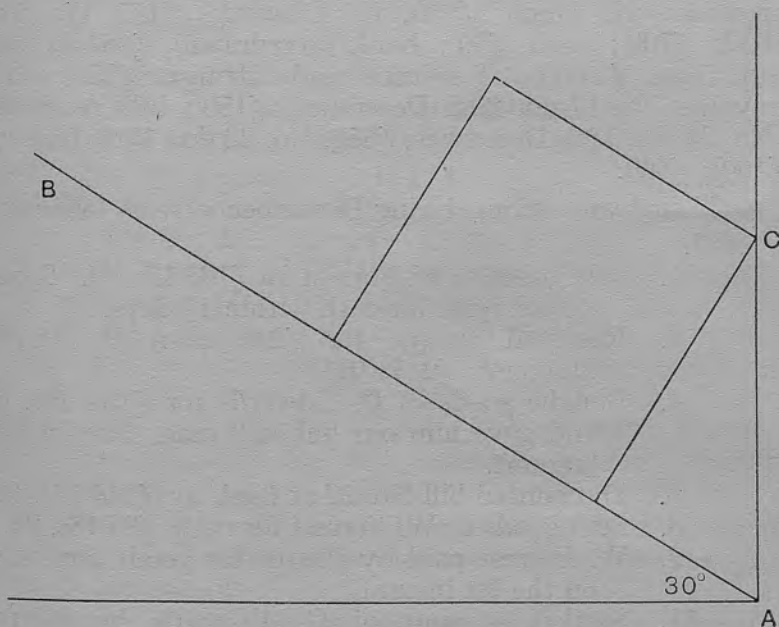
$$\mu = \frac{1 - 2 \tan \alpha}{2 - \tan \alpha}.$$

If the angle of repose is  $21^\circ 48'$ , find  $\alpha$ . (20)

8. The diagram shows the vertical section through the centre of gravity of a uniform cubical block weighing 10 lb. resting on a smooth plane AB inclined at  $30^\circ$  to the horizontal. The edge of the block passing through C lies against a smooth vertical plane AC.

Make a careful copy of the diagram, and show on it the directions and points of application of the forces which act on the block. Assume that the action between the cube and the planes is in each case equivalent to a single force in the plane of the vertical section.

Find also the magnitudes of the forces. (20)



## BOOKKEEPING

Friday, 23rd 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. Name three kinds of shares often issued by limited companies, and state how they differ. (4)

2. On which side of a trial balance would you expect to find the balance of the following accounts:—Property, Trade Expenses, Drawings? Give reasons for your answer. (6)

3. The balance sheet of Messrs. Rowan and Strong at 30th November, 1933, contained the following assets and liabilities:—Capital—Rowan, £1,500, Strong, £1,500; debtors—H. Arnold, £345 9s. 2d., L. Cartwright, £384 8s. 4d.; creditors—N. Dunn, £350, G. Edwards, £175 17s. 1d.; stock, £700; cash, £50; bank (overdrawn), £154 0s. 5d.; buildings, £1,600; furniture and fittings, £250; bills payable (No. 17 due 29th December), £150; bills receivable (No. 21 due 13th December, £350, No. 22 due 17th January, £150), £500.

Their transactions during December were as follows:—  
1933.

- Dec. 1. Sold goods to W. Forrest for £165 17s. 6d. Terms, 2½ per cent. for cash within 10 days.
2. Received cheque for £240 from H. Arnold. Discount, £2 7s. 6d.
4. Bought goods of G. Edwards for £130 10s. 6d. and gave him our bill at 3 mos. date for that amount.
6. Discounted bill No. 22 at bank for £148 17s. 11d.
8. Sold goods to W. Forrest for cash, £35 18s. 9d.
9. W. Forrest paid by cheque for goods purchased on the 1st instant.
11. Settled account of G. Edwards by cheque. Discount, £3 19s. 1d.
13. Bill No. 21 (L. Cartwright) due today dishonoured. Paid noting charges, 5s., cash.
14. Bought goods of G. Edwards for £97 11s. 8d.
16. Purchased bookcase for office, £15 10s. Paid cash.

1933.

- Dec. 18. Bank charge for interest on overdraft, £4 3s. 9d.  
 19. Accepted N. Dunn's draft for £350 at 2 mos.  
 21. Sold goods to H. Arnold for £190 18s. 6d.  
 22. Returned to G. Edwards goods value £17 8s. 2d.  
     purchased on 14th instant.  
 23. Received H. Arnold's acceptance at 3 mos. for  
     value of goods sold him on the 21st instant.  
 27. Drew £20 from bank for office cash.  
 29. Bill No. 17 due today met at bank.  
 30. Cash payments for month: Wages, £32 10s.;  
     Xmas boxes to staff, £10 10s. 6d.; petty  
     expenses, £7 3s. 4d.  
     Rowan drew from bank £50 and Strong £30, for  
     their own use.

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

All payments were made by cheque, except where otherwise stated, and all cash and cheques received were paid into bank the same day. (55)

4. The following balances at 31st December, 1933, were extracted from the books of Messrs. Brooks and Young:—

Stock, at 1st June, 1933, £2,906 12s. 10d.; purchases, £2,070 11s. 2d.; sales, £7,131 4s. 7d.; bills payable, £445 10s. 6d.; drawings—Brooks, £250, Young, £240; repairs, £189 0s. 2d.; debtors, £2,000 4s. 3d.; creditors, £649 15s. 8d.; wages, £1,723 19s. 8d.; salaries, £781 14s. 6d.; trade expenses, £167 7s. 4d.; rent, rates and taxes, £366 15s. 7d.; discounts allowed, £73 6s. 11d.; discounts received, £57 3s. 1d.; carriage, £250 14s. 3d.; fire insurance, £75; bad debts reserve, £150; cash, £75 16s. 4d.; bank, £712 3s. 5d.; machinery, £3,500; investments, £3,000; returns inwards, £50 7s. 5d.; capital—Brooks, £6,000, Young, £4,000.

The stock of goods at 31st December, 1933, was valued at £2,650. Book debts to the amount of £200 were bad and had to be written off.

Make up a Trial Balance, and prepare Trading Account, Profit and Loss Account and Balance Sheet. Provide for depreciation of machinery at 10 per cent. per annum. Profits are divided equally after crediting each partner with interest on capital at 5 per cent. per annum. (35)

## COMMERCIAL ARITHMETIC

(FIRST PAPER)

Friday, 23rd 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.
276	: 11	: 10	467	: 19	: 7	831	: 16	: 5	.....	.....	.....
795	: 0	: 6	1,799	: 9	: 9	9,279	: 9	: 7	.....	.....	.....
8,694	: 15	: 7	296	: 15	: 3	892	: 8	: 8	.....	.....	.....
389	: 7	: 3	431	: 16	: 2	5,249	: 17	: 10	.....	.....	.....
884	: 8	: 9	945	: 9	: 7	510	: 12	: 1	.....	.....	.....
943	: 13	: 5	7,580	: 7	: 7	459	: 19	: 6	.....	.....	.....
2,188	: 3	: 4	333	: 18	: 0	920	: 5	: 3	.....	.....	.....
455	: 19	: 8	390	: 10	: 5	537	: 17	: 5	.....	.....	.....
304	: 5	: 9	1,355	: 10	: 11	1,426	: 10	: 9	.....	.....	.....
940	: 18	: 8	876	: 9	: 3	785	: 16	: 7	.....	.....	.....
<hr/>			<hr/>			<hr/>			<hr/>		
£	:	:	£	:	:	£	:	:			
<hr/>			<hr/>			<hr/>					

(8)

2. Subtract :—

£	s.	d.	£	s.	d.	£	s.	d.
43,016	: 12	: 9	36,125	: 16	: 11	74,246	: 10	: 7
39,024	: 15	: 10	19,915	: 17	: 4	54,275	: 19	: 9
<hr/>			<hr/>			<hr/>		
£	:	:	£	:	:	£	:	:
<hr/>			<hr/>			<hr/>		

(3)

3. Write down the values of :—

47,321 - 39,547 + 13,298 .....	.....
$\frac{5}{8}$ ths of £11,000 .....	.....
100 articles at 2s. 6d. per dozen .....	.....

(5)

## COMMERCIAL ARITHMETIC

## (SECOND PAPER)

Friday, 23rd 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. The inside measurements of a tank are :—length, 1.25 metres ; breadth, 0.75 metre ; depth, 48 centimetres. How many gallons of water would half fill the tank ? (1,000 c.c. = 1.76 pints.) (6)

2. A County Council required a sum of £4,291 for public purposes and of this sum  $\frac{3}{8}$ ths was payable by owners and  $\frac{5}{8}$ ths by occupiers. If the owners' rate was calculated on a valuation of £18,540 and the occupiers' rate on a valuation of £18,300, find to the nearest penny the rate per £ levied on (a) owners, (b) occupiers. (7)

3. The value of the £ sterling in New York on a particular day was 18s.  $8\frac{1}{4}$ d. The par of exchange was  $4.86\frac{2}{3}$  dollars to the £. Find the actual rate of exchange. (8)

4. A man bought 750 £1 shares in a limited company at 5s. 6d. per share. The nominal value of the shares was afterwards written down by the company from £1 to 8s. 0d. each, and a dividend of 2 per cent. declared thereon and paid. If the shares were then sold by him at 5s. 3d. each, how much did he gain or lose altogether ? (9)

5. A man's income was £575 of which £510 was "earned" and the rest "unearned." He was allowed a total of £335 free of income tax. If he paid at the rate of 2s. 6d. in the £ on the remaining £175 of his "earned" (9)

income and at the rate of 5s. in the £ on his "unearned" income, what was the total amount of his income tax? Find also the average rate per £ calculated on his whole income. (10)

6. A greengrocer's selling prices were fixed at 75 per cent. above cost price, but 20 per cent. of his stock was lost by wastage. His expenses for the year were:—rent, £50; rates, £16 16s.; lighting and heating, £7 10s. 6d.; wages, £26; and carriage, etc., £12 10s. 6d. If his net profit was £350, what was the total amount of his sales? (12)

7. Find, by logarithms, the rate per cent. compound interest at which £5,350 would amount to £6,573 in 6 years. (12)

## SCIENCE

### HIGHER GRADE—(BOTANY)

Tuesday, 27th March—1.45 P.M. to 3.45 P.M.

**FIVE** questions in all should be attempted.

**Answers should, wherever possible, be illustrated by diagrams.**

*20 marks are assigned to each question.*

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

1. What is transpiration? From what parts of the plant does it take place, how is it controlled by the plant, and what effect do light, heat, and wind have on it?

2. Describe the changes that take place up to the time of production of the first foliage leaf, when a dry seed or grain (such as pea, bean or maize) is supplied with moisture, air and warmth.

3. What do you understand by fertilization? Illustrate your definition by an account of the life-history of *Spirogyra* or of any other alga you have studied. Make careful diagrams.

4. Select any *three* plants from the following list, and say (a) where they are to be found growing, (b) how they are adapted to their habitat :—

Heather, Male Fern (*Aspidium*), Marram Grass, Water Lily, Bog Moss (*Sphagnum*), Daisy, Sea-pink (Thrift), Pine, Bramble (Blackberry).

5. The trunk of a tree when cut across shows a number of concentric rings in the wood. Why are these called "annual rings," and to what are they due? Describe carefully how they are formed.

6. Write a short essay on *one* of the following :—

- (a) Climbing plants.
- (b) The vegetation of a pond or lake.
- (c) A wood in autumn.

7. Select *one* of the following natural orders :—

*Labiatae, Rosaceae, Cruciferae.*

Give the characters by which you would recognize the order. Make a list of the most important members (genera) of the order, and give a large-scale, carefully named drawing of *one* typical example from your list.

## SCIENCE

### HIGHER GRADE—(CHEMISTRY)

Wednesday, 28th 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.**

Na = 23, C = 12, O = 16, S = 32.

*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. Mention four classes of oxides, stating the principal characteristics of each class. Give the formulae for the following oxides:—carbon monoxide, carbon dioxide, cupric oxide, potassium oxide, magnesium oxide, manganese dioxide. State the class to which each belongs, and give in each case your reason for assigning the oxide to its class. Mention one other oxide in each of the four classes.

2. Explain the meaning of the term *diffusion*, illustrating your answer by referring to any two practical applications of this property of gases.

Describe briefly two experiments you could perform to demonstrate difference in the rates of diffusion of different gases.

It was found by experiment that, taking the speed of diffusion of hydrogen as 1, the speed of diffusion of another gas under identical conditions was 0.21. Find the density of the other gas.

3. State very briefly the method you would adopt to prepare a specimen of each of the following acids: hydrochloric, hydrobromic, hydriodic. Write the equations representing the reactions.

Write a note on the action of sulphuric acid on (a) the chloride, (b) the bromide, and (c) the iodide of sodium.

4. Given a normal solution of sulphuric acid and a pure specimen of anhydrous sodium carbonate, detail the method you would adopt to find the equivalent of sodium carbonate. Mention the indicator you would choose, and give a reason for your choice.

15 gms. of partly hydrated sodium carbonate are dissolved in water to form 250 c.c. of solution. If 25 c.c. of the solution exactly neutralise 28 c.c. of 0.93 N. sulphuric acid, find the percentage of anhydrous sodium carbonate in the given specimen.

5. Using sodium nitrate and any other chemicals required indicate *very briefly* how you would prepare nitric oxide. Give full experimental details of the method you would employ in preparing nitrous oxide.

Give three tests you would apply to distinguish between these two gases.

6. Six unlabelled bottles are known to contain pure finely powdered specimens of the following substances:—sodium carbonate, calcium carbonate, sodium sulphite,



potassium chloride, potassium nitrate, ammonium chloride. Outline the tests you would apply to identify the contents of each bottle with a view to labelling correctly.

7. **Either**—(a) Write an account of the manufacture of water gas. State two uses to which this gas is put.

50 c.c. of water gas were exploded with 50 c.c. of oxygen. The volume after the explosion was 50 c.c. On introducing sodium hydroxide the volume was further reduced to 25 c.c. Explain the changes in volume, calculate the percentage composition of the water gas, and show that excess of oxygen was used for the explosion.

**Or**—(b) Write notes on *two* of the following :—

- (i) The existence of some elements was predicted, and their properties were described, before these elements were actually discovered.
- (ii) In assigning atomic weights to the elements, oxygen 16 is taken as the standard.
- (iii) The explosion of gunpowder.

## SCIENCE

### HIGHER GRADE—(ENGINEERING)

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

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

20 marks are assigned to each question.

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

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

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

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

### SECTION A

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

1. Define *momentum*, and *kinetic energy*.

During shunting operations at a railway siding a truck weighing 15 tons is detached from the train when running at 18 miles per hour. What is its kinetic energy in foot pounds?

If the resistance to its motion is 16 lb. per ton, how far will the truck travel before coming to rest on an incline of 1 in 90 (a vertical rise of 1 foot per 90 feet of railway track)?

If when the speed of the truck has decreased to 5 miles per hour it collides with a second truck weighing 12 tons and the two trucks then move forward together, with what speed will the trucks begin to move forward?

2. What is the *mechanical advantage* and the *velocity ratio* of a mechanism?

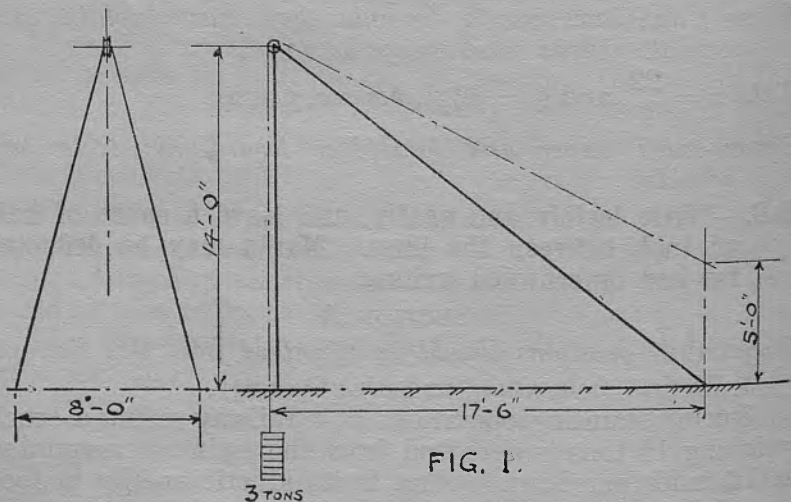
With reference to a simple machine, such as a pulley-block or a screw jack, describe briefly how you would carry out an experiment to determine the *law of the machine*.

In an experiment it was found that the law of the machine was given by the expression  $E = 4.6 + 0.041W$ , where  $E$  was the effort applied and  $W$  was the load moved. The velocity ratio was known to be 30. Determine the mechanical advantage and the efficiency of the machine when the load was 350 lb.

State the limiting value of this efficiency.

3. Figure 1 shows a crane structure in which the jib is formed by shear legs, shown in the end view. The maximum load to be lifted is 3 tons. For that load determine graphically—

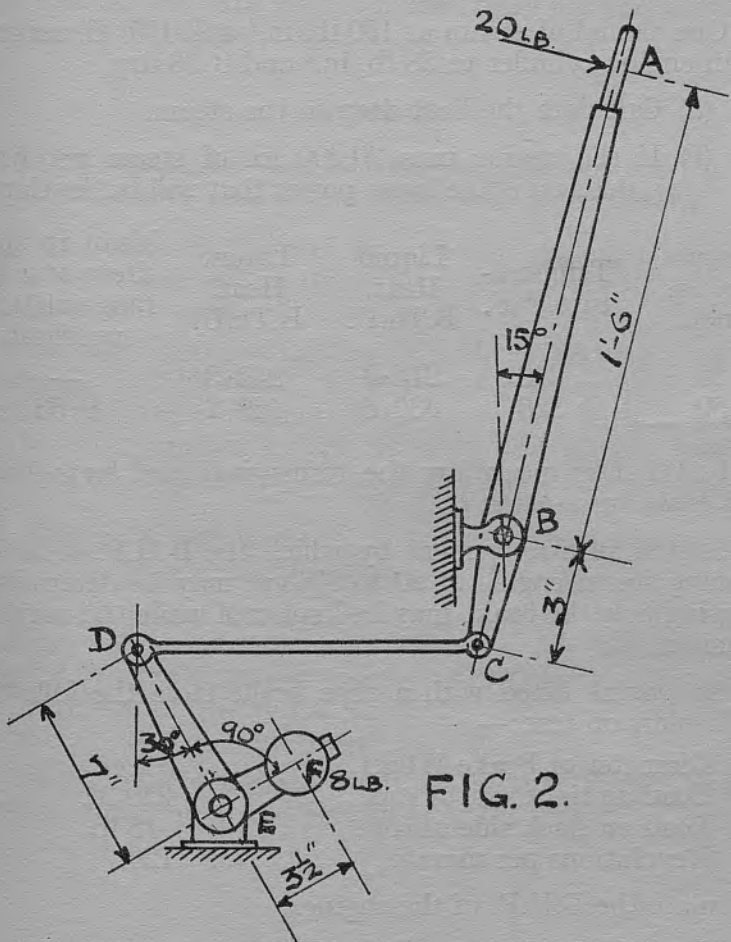
- the direction and magnitude of the resultant thrust on the pulley shaft,
- the stress induced in the tie and in each leg of the jib.



4. Define the *moment of a force* about a given point, and the *turning moment of a force*.

Figure 2 shows a lever system in a machine mechanism. Lever ABC pivots about pin B, while the bell crank DEF is fixed to a shaft at E; the arm EF of the crank carries a balancing mass F of 8 lb. weight.

Determine the turning moment on the shaft at E for an applied push of 20 lb. at handle A. (The direction of the push is at right angles to the handle.)



## SECTION B

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

5. One pound of water at  $32^{\circ}$  F. is contained in a cylindrical vessel under a pressure of 150 lb. per sq. inch. Describe the changes that take place when the water is heated at constant pressure until superheated steam is formed at  $450^{\circ}$  F., and state the heat taken in by the water and the steam at each stage.

One pound of steam at 150 lb./in.<sup>2</sup> and  $450^{\circ}$  F. expands in an engine cylinder to 28 lb./in.<sup>2</sup> and 0.98 dry.

(a) Calculate the heat drop in the steam.

(b) If the engine uses 20,000 lb. of steam per hour, determine the horse-power that will be developed.

Pressure, lb./sq. inch.	Tempera- ture, $^{\circ}$ F.	Liquid Heat, B.Th.U.	Latent Heat, B.Th.U.	Mean Specific Heat over a range of $100^{\circ}$ superheat.
28	246	214.8	949.3	—
150	358	330.5	869.2	0.56

6. What is meant by the terms *indicated horse-power*, and *brake horse-power*?

Sketch an arrangement by which the B.H.P. of a slow running steam engine of 20 to 30 h.p. may be determined, showing how the brake may be kept cool while the engine is running.

An engine fitted with a rope brake gave the following particulars on test:—

Diameter of Brake Wheel	.. ..	5 feet.
Load on tight side of rope	.. ..	220 lb.
Load on slack side of rope	.. ..	45 lb.
Revolutions per minute	.. ..	120.

Calculate the B.H.P. of the engine.

If the rise in temperature of the water used to cool the brake rim is not to exceed  $50^{\circ}$  F., estimate the gallons of water required per hour. (1 gallon of water weighs 10 lb.)

7. The propelling machinery of a cargo vessel consists of a single-acting two-stroke Diesel engine, with six cylinders, each 32 inch diameter and 50 inch stroke. During a voyage the engine room log showed the following particulars:—

Speed	.. .. .	98 revs. per minute.
M.E.P. (from cards)	.. .. .	88 lb. per sq. inch.
Oil consumption	.. .. .	0.41 lb. per I.H.P. hour.

Assuming the calorific value of the fuel to be 19,000 B.Th.U. per lb., determine the indicated thermal efficiency of the engine.

If the oil costs 70s. per ton, determine the fuel cost for a voyage of 22 days.

### SECTION C

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

8. Describe any form of storage cell, explain its action, and make a line sketch of an arrangement for charging a battery of such cells.

A storage battery has an E.M.F. of 95 volts and a resistance of 0.25 ohm. If it is charged by means of a dynamo sending a current of 20 amps. for 10 hours, find (a) the P.D. supplied by the dynamo, and (b) the energy, in Board of Trade units, which it delivers to the battery.

9. With reference to a D.C. motor give the meaning of—  
(a) *electrical horse-power*; (b) *torque*.

A D.C. motor has a pinion on its shaft for driving a machine. The motor runs at 550 revs. per minute when supplied with a 40 amps. current at 250 volts. Assuming the efficiency of the motor to be 92 per cent., determine the E.H.P., B.H.P., and torque.

The pinion on the motor shaft has a diameter of 8 inches. What is the effort at the periphery of the pinion?

## SCIENCE

## HIGHER GRADE—(TECHNICAL DRAWING)

Wednesday, 28th 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.

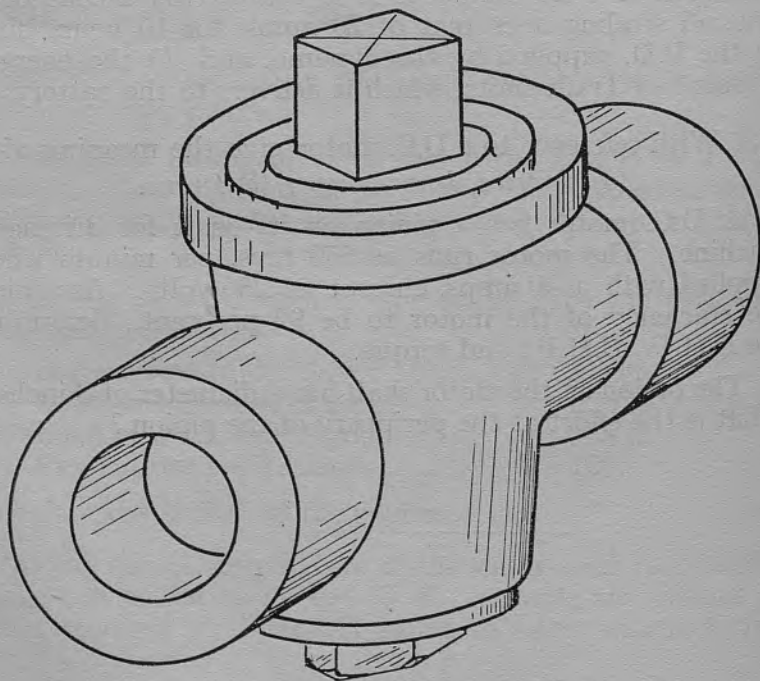
*50 marks are assigned to each question.*

1. Figure 1 (pages 1 and 4 of the paper of drawings) shows the component parts of a water plug cock. A pictorial view of the water plug cock is reproduced below.

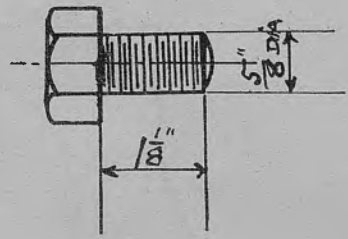
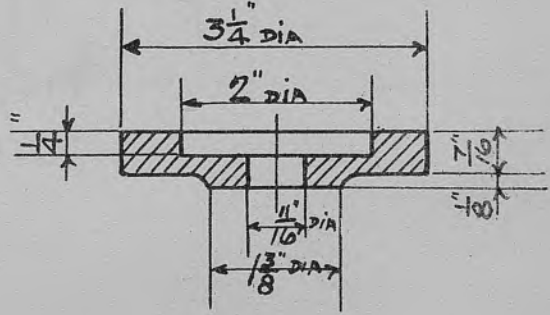
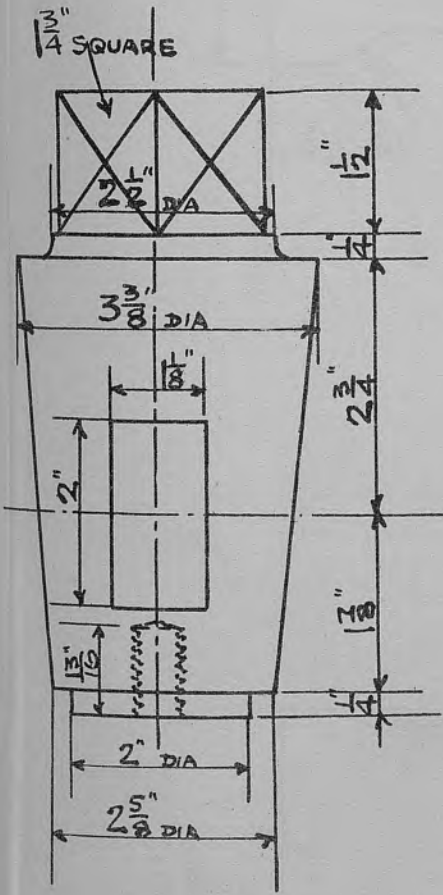
Make a full-size drawing showing the various parts assembled into a complete cock, with the plug shown in the "open" position. The following views are to be drawn:—

- (a) An elevation with the left-hand half in section through the centre line of the cock, and the right-hand half as an outside view.
- (b) An outside end view.

The drawings should be made in bold outline and the principal dimensions only should be shown. The figures should be distinct and the title and scale neatly printed. No projection lines should be shown on the drawing.



To be distributed with the TECHNICAL DRAWING question paper.



URE 1.

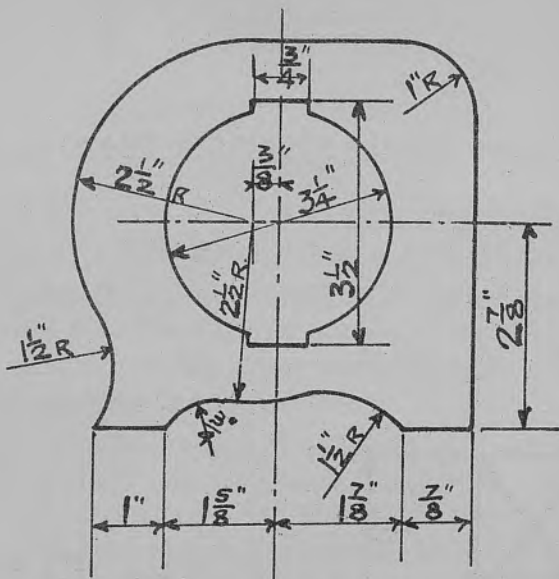


FIG. 2.

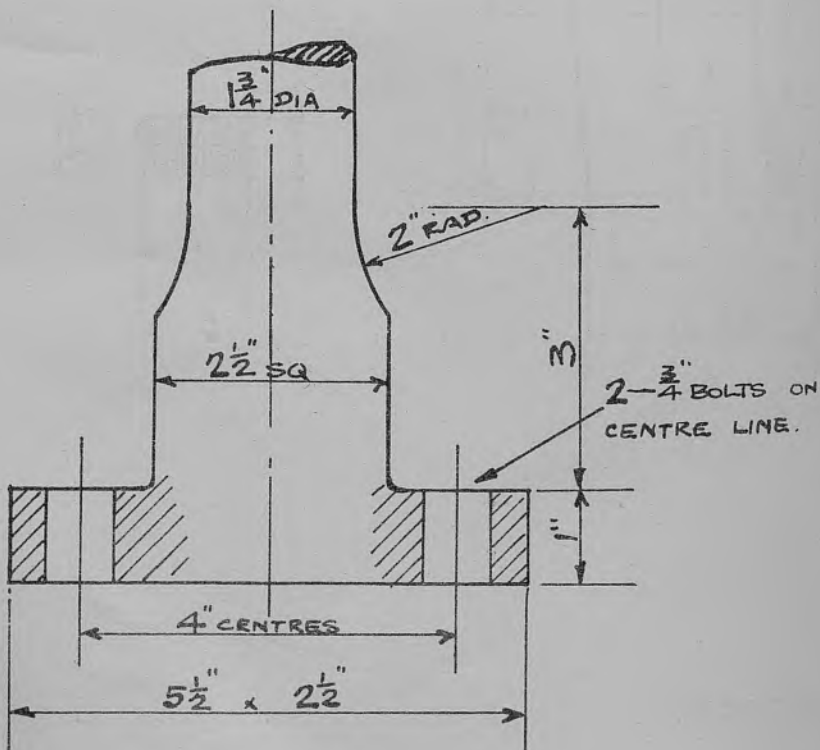


FIG 3



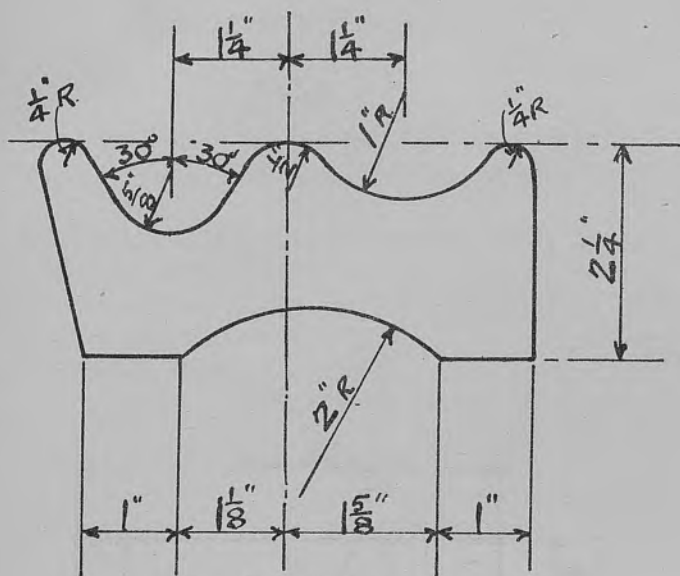


FIG. 4.

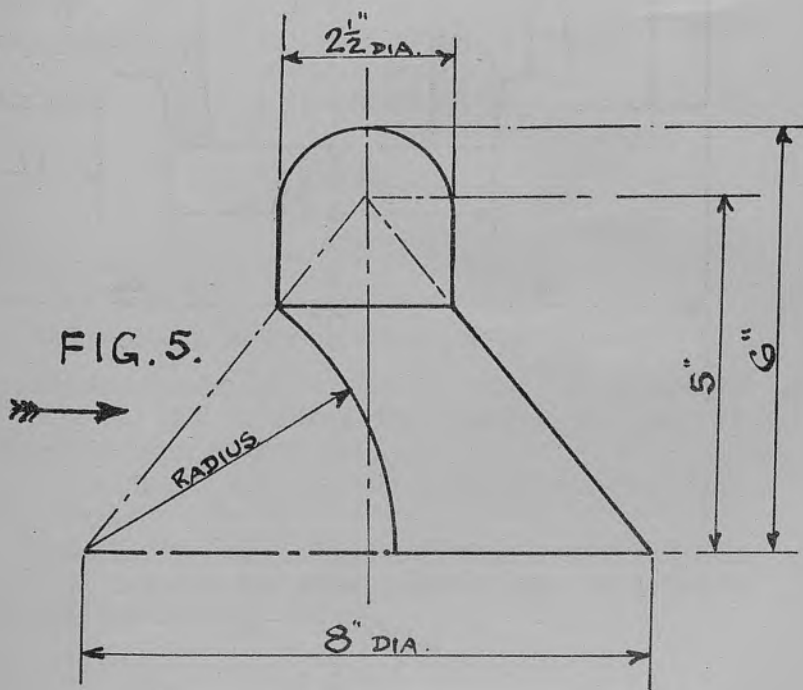
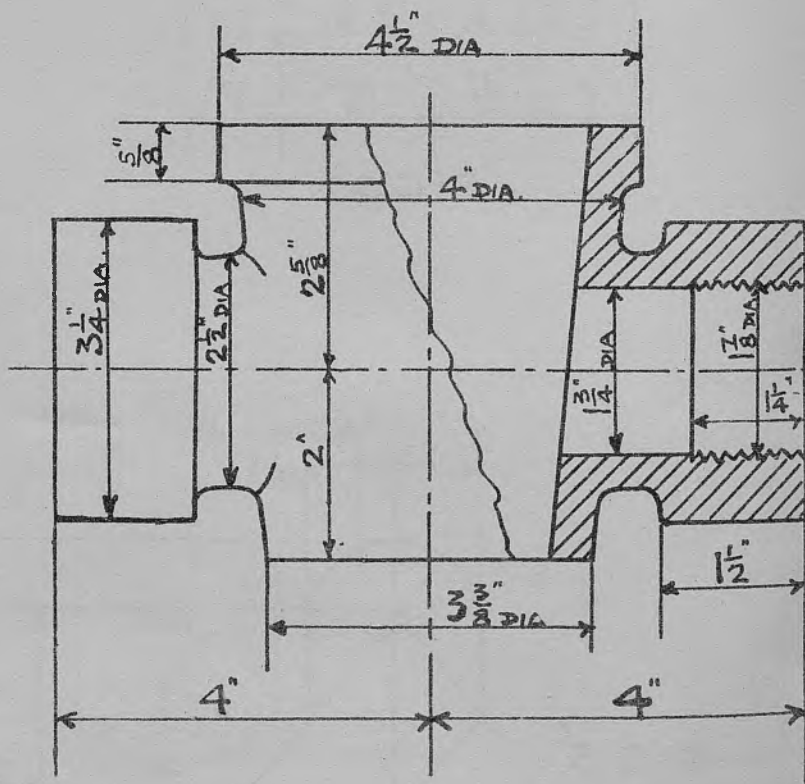


FIG. 5.



**Either**

2. (a) Draw (full size) the template shown in Figure 2.  
 Show clearly how the centres of the arcs are obtained.  
 Mark all tangent points, showing clearly how these are obtained.
- (b) The elevation of the end of a foundation bolt is shown in Figure 3.  
 Draw (full size): (1) a plan ;  
 (2) the elevation as given, but with the curve of intersection between the square and the round bar accurately projected.

**Or**

3. (a) A section of the earthenware support for electric cables is shown in Figure 4.  
 Draw this section (full size), showing clearly how the centres of the arcs are obtained.  
 Mark all tangent points, showing clearly how they are obtained.
- (b) A conical lamp shade with a dome-shaped top and a circular piece cut out is shown in Figure 5.  
 Draw (full size): (1) the elevation as given ;  
 (2) a plan ;  
 (3) an end elevation looking in the direction of the arrow.

**SCIENCE****LOWER GRADE—(GEOGRAPHY)**

Wednesday, 21st March—9.30 A.M. to 12 NOON

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

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

**N.B.**—Write legibly and neatly, 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. On the accompanying map of the British Isles—
- (a) Shade and name the Ochil Hills, the Coolin Hills, the Mourne Mountains, the Cleveland Hills, the Wicklow Mountains, Dartmoor.
  - (b) Draw the railway route from London to Glasgow via Leeds, Dumfries, and Kilmarnock. Mark and name all the towns mentioned. Mark and name the Aire Gap.
  - (c) Draw the following steamship routes—Stranraer to Larne, Holyhead to Dun Laoghaire (Kingstown), Liverpool to Douglas (I.O.M.), Southampton to Havre. Measure and note the length in miles along each route.
  - (d) Shade and name the South Wales Coalfield and the Fife and Lothians Coalfield.
  - (e) Name and mark with S four important shipbuilding centres.
  - (f) Insert two isotherms, one for January and one for July. (20)
2. On the accompanying map of the world—
- (a) Insert (without boundaries) the names of the following countries :—Bolivia, Finland, Siam, Sierra Leone ; name Bermuda, Formosa, Hawaii Is., Philippine Is. ; mark and name the capitals of Greece, Turkey, the United States, the Commonwealth of Australia.
  - (b) Shade four areas of very dense population outside Europe, and shade (in a different way) the hot deserts of the southern hemisphere.
  - (c) Indicate *one* area where large quantities of each of the following commodities are produced :—wheat, rice, cotton, wood-pulp, silk, wool, tin. Print the name of the commodity over the area.
  - (d) Draw the following routes :—the shortest sea-route from Liverpool to San Francisco, the Trans-Siberian Railway from Moscow to Vladivostock, the main railway line from Cape Town to Katanga, a trans-continental railway across South America.

- (e) Mark a place P that is fixed by the following data :—
- (i) P is 1,380 miles from the equator,
  - (ii) when it is noon at Greenwich it is 8 p.m. at P,
  - (iii) the January isotherm of 88° F. and the July isotherm of 68° F. pass through P. (20)

## SECTION B

*Two questions should be attempted from this Section.*

3. How would you find the latitude of a place in the northern hemisphere by observing the Pole Star? Give a diagram showing how to find the Pole Star. (15)
4. What are the chief characteristics of a Mediterranean type of climate? Show how the plants of Mediterranean lands are suited to their environment. (15)
5. Select any region that depends upon irrigation for its agricultural prosperity. Describe briefly and account for the system of irrigation that has been adopted. (15)
6. Describe the work of ice under the heads of erosion, transportation, and deposition. As far as possible refer to localities actually visited by you. (15)
7. Write a brief account of exploration in the nineteenth century in *one* of the following regions :—Africa, Australia, the Arctic, the Antarctic. (15)

## SECTION C

*Two questions should be attempted from this Section.*

8. Write a short geographical description of *one* of the following :—the Orkney and Shetland Islands, the Inner Hebrides, the Channel Islands. (15)
9. A text-book of Geography refers to “ the evolution of the strategic town of former times into the railway centre of to-day.” Select *one* of the following towns :—York, Carlisle, Shrewsbury, Stirling, and account for its development from a fortified town to a railway centre. (15)
10. Select *one* important coalfield in the continent of Europe. State its position and account for the industries that have developed upon it. (15)

11. Give a brief description of the climate, productions, and industries of the Ganges valley. Illustrate your answer by a sketch-map. (15)

12. Describe the course of the Nile from source to sea, with special reference to the climate and vegetation of the regions through which it flows. Illustrate your answer by a sketch-map. (15)

13. Select *three* large seaports on the west coast of North America, and describe and account for the trade that passes through each port. (15)

## SCIENCE

### HIGHER GRADE—(GEOGRAPHY)

Wednesday, 21st 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 shows a part of Great Britain on the scale of one inch to one mile.

- (a) In what part of Great Britain is the region represented situated?
- (b) Describe the main physical features of the region, and comment particularly on the estuary of Afon Mawddach and the range of Cader Idris.
- (c) Describe and account for the routes taken by the roads and railways, and explain why the railway is frequently on lower ground than the road.
- (d) Write a brief account of the distribution of population in the area, and add notes on the position of Dolgelley and of Barmouth. (36)

## SECTION B

Two questions should be attempted from this Section.

2. What do you understand by the scale of a map? What are the chief scales on which Ordnance Survey maps are drawn? For what purposes are maps on each of these scales used? (16)

3. In the summer of 1933 a squadron of Italian sea-planes flew from Italy to Chicago. The route was as follows:—

	<i>Miles.</i>
Orbetello .. .. .	—
Amsterdam .. .. .	875
Londonderry .. .. .	625
Reykjavik (Iceland) .. .. .	940
Cartwright (Labrador) .. .. .	1,500
Shediac (New Brunswick) .. .. .	750
Montreal .. .. .	500
Chicago .. .. .	875

Discuss the advantages and disadvantages of the route chosen. (16)

4. The following figures give the mean temperatures for January and July, and the annual rainfall at three stations in Canada in approximately the same latitude. How do you account for the very different climates of these three places?

	<i>Jan.</i>	<i>July.</i>	<i>Rainfall.</i>
Vancouver (British Columbia)	35° F.	63° F.	72 in.
Winnipeg (Manitoba) .. .. .	-3° F.	66° F.	20 in.
Anticosti (Quebec) .. .. .	13° F.	57° F.	30 in.

(16)

5. What are the more important reasons for seasonal variations in the volume of rivers? How may these variations be advantageous to man, or the reverse? (16)

6. Show that the search for mineral wealth has played an important part in the exploration and settlement of new lands. (16)

## SECTION C

*Two questions should be attempted from this Section.*

7. Draw a sketch-map showing the natural regions of Southern England (south of a line between London and Bristol). Explain the principles on which you base the division. (16)

8. How do Eastern and Western Europe differ as regards relief, climate, and access to the sea? Show that the different ways in which civilisation has developed in the two areas have been influenced by these geographical conditions. (16)

9. Write a short geographical sketch of Manchuria, indicating the reasons for its importance to (a) China, (b) Japan. (16)

10. The central part of the Congo basin, with an equatorial climate, has on an average about 10 people to the square mile. Bengal, with a monsoon climate, has over 600. How do you account for this difference? (16)

11. Give a reasoned description of the distribution of the chief crops of the United States between the Appalachian Highlands and the Rocky Mountains. (16)

12. How do you explain the fact that all the large towns of Australia are situated on or near the coast? (16)

## SCIENCE

## HIGHER GRADE—(PHYSICS)

Wednesday, 21st March—1.0 P.M. to 3.30 P.M.

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

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

*20 marks are assigned to each question.*

*Mathematical tables will be supplied to those who desire them.*



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

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

### SECTION I (MECHANICS)

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

1. Enunciate the theorem known as "the triangle of forces," and describe an experiment you have performed to prove it.

A mass  $C$  is supported by two strings  $CA$ ,  $CB$ , which pass over pulleys at  $A$  and  $B$  and have weights of two and three pounds attached to their ends. If the angle  $ACB$  is  $120^\circ$ , find graphically (or otherwise) the weight of the mass.

(The weight of the strings and the friction of the pulleys may be taken as negligible.)

2. State two laws of statical friction and outline briefly experiments which you would carry out to illustrate the two you select.

A horizontal pull of 2 lb. weight is just sufficient to move a stone slab weighing 10 lb. resting on a rough horizontal plane. Find by calculation whether (the pull being removed) the slab will move down the plane, when the latter is tilted till it makes an angle of  $10^\circ$  with the horizontal.

3. Define the following units in the foot-pound-second system :—

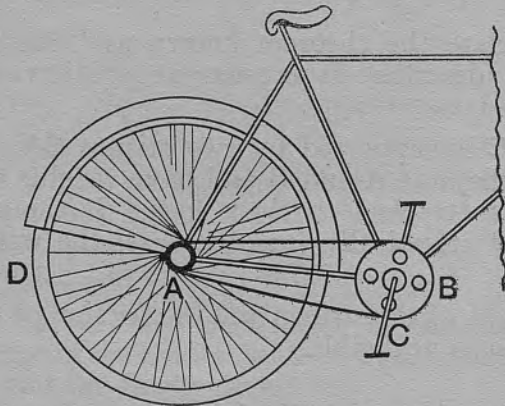
(a) unit of force, (b) unit of work.

Describe any experiment which you have carried out to determine the value of "g" either in this system, or in the centimetre-gram-second system of units.

Taking "g" as equal to 32.2 in the ft.-lb.-sec. system, find its value in the c.g.s. system, and say why it is not necessary to take into account the change from lb. to gm. (1 inch = 2.54 cm.)

4. Define *velocity-ratio* and *mechanical advantage*. Find the efficiency of a machine whose velocity-ratio is 10, if an effort of 5 lb. weight is just sufficient to move a load of  $42\frac{1}{2}$  lb. weight. Why is the efficiency of a machine always less than unity?

The rough sketch given below shows the arrangement on an ordinary push bicycle. There are 18 teeth on the spur-wheel A and 45 teeth on the chain-wheel B. If the length of the pedal crank C is 8 inches and the diameter of the wheel D is 28 in., what is the velocity-ratio?



## SECTION II (HEAT AND HYDROSTATICS)

5. State the principle of Archimedes, and describe any experiment which you have carried out to illustrate this principle in the case of a solid which floats in water.

The dimensions of a uniform block of wood (s.g. 0.75) are:—length 10 cm., breadth 5 cm., thickness 2 cm. If it floats in salt water (s.g. 1.03) with its 10 cm. by 5 cm. faces horizontal, find how far below the surface of the water the centre of gravity of the block is.

Find also in grams weight the resultant upward pressure of the water on the block.

6. Explain the terms *thermal capacity* and *water-equivalent*.

Describe an experiment to find the water-equivalent of a calorimeter.

A calorimeter contains 58.4 grams of water at 15° C. When 45.5 grams of water at 42° C. are added, the resulting temperature is 26° C.

Find (a) the thermal capacity, (b) the water-equivalent of the calorimeter.

If the calorimeter weighs 82.0 grams, find the specific heat of the material of which it is made.

7. The coefficient of expansion of glass (linear) and of mercury (cubical) are given in tables as 0.0000086 and 0.000182 respectively. Explain what is meant by these figures. Show that for equal rises in temperature the expansions per c.c. of these substances are approximately in the ratio of 0.14 to 1.00.

A 50 c.c. density bottle containing 7 c.c. of mercury and 43 c.c. of turpentine at 15° C. is weighed at this temperature and is afterwards placed on a water bath, whose temperature is first slowly raised from 15° C. to 95° C. and then kept steady at that point for about twenty minutes. The bottle and its contents are weighed again after being allowed to cool. From the following figures calculate the coefficient of expansion of turpentine :—

Weight of bottle + mercury	.. ..	105.20 gm.
„ bottle + mercury + turpentine before heating	.. ..	142.70 gm.
„ bottle + mercury + turpentine after heating	.. ..	140.00 gm.

Show also that your answer is the *absolute* (and not the *apparent*) coefficient of expansion.

8. The Therm is defined as 100,000 British Thermal Units. State as clearly as you can what this means. How would you find the number of therms produced by burning—

- Either* (a) 1,000 cu. ft. of coal gas in a bunsen burner,  
*Or* (b) 1,000 c.c. of methylated spirit in a spirit lamp ?

Four cu. ft. of gas are consumed in raising 10 lb. of water in a copper kettle weighing 5 lb. from freezing point to boiling point. Calculate the number of therms furnished per 1,000 cu. ft. (S.H. of Copper = 0.1). (Neglect the loss of heat due to radiation.)

### SECTION III (SOUND AND LIGHT)

9. Explain as clearly as you can how a note is produced when you blow across (a) one end of a piece of glass tubing, open at both ends, (b) the open end of a test tube.

Describe and explain how you would find the velocity of sound in air by means of a tall glass cylindrical jar and a tuning fork of known frequency. State, with reasons, how you would find from your result the velocity of sound at the standard temperature ( $0^{\circ}$  C.).

10. A tuning fork, middle C, is marked 256. Explain this figure and describe an experiment by which you could verify it.

State briefly how, by using this fork, you would determine the frequency of a second fork marked C which was found to be very slightly flat.

11. State the formula connecting the positions of the focus, object and image, for a double convex lens, and describe an experiment to verify the formula.

A pin 1 in. long is placed vertically with its point on the principal axis of a double convex lens ( $F = 2$  in.) and 6 in. from the centre of the lens. Make a clear full size drawing to find the position and size of the image. Show that your measurements agree with the formula.

12. State the laws of reflection of light and show how you would illustrate each of them in the laboratory.

A plane mirror 6 ft. high is placed vertically against a wall, the lower edge being 2 ft. above the floor. A man whose eyes are 6 ft. above the floor stands before the mirror and at a distance of 4 ft. from it. An opaque screen exactly half the size of the mirror is placed so as to cover (a) the bottom half of the mirror, (b) the top half. Show by diagrams how much of himself the man sees in each case.

### SECTION IV (MAGNETISM AND ELECTRICITY)

13. Explain the terms *horizontal component*, *dip* (inclination), *declination* (variation), as applied to the earth's magnetism.

How would you determine the angle of dip? State the various errors which might arise, and indicate the precautions you would take to eliminate them.

Show how a dip circle may be used to find the magnetic meridian at any point on the earth's surface.

14. Define *specific resistance*. What effect has change of temperature on the specific resistance of a conductor? Show how you would investigate this effect in the case of copper.

The average temperature coefficient of resistance of copper is 0.0043, and the resistance of one metre of copper wire of diameter 0.046 cm. is found to be 0.105 ohm at 0° C. Find the resistance at 100° C. of ten metres of copper wire whose diameter is 0.092 cm.

15. How does the heat produced by an electric current in a conductor depend on (a) resistance, (b) current strength? Outline experiments in support of your answers.

Two long wires of the same material have equal lengths but different thicknesses. They are so supported that they are parallel and in the same horizontal plane. When a current passes along the wires connected in series, the thinner wire sags below the thicker; but when a current passes along the wires connected in parallel, the thicker wire sags below the thinner. Explain this.

16. Explain the action of any form of condenser. Say what is meant by the term *capacity* as applied to a condenser, and describe briefly experiments you have made to determine the three factors on which the capacity depends.

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## SCIENCE

HIGHER GRADE—(PURE ZOOLOGY)

Friday, 23rd 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. Describe the structure of Hydra and show clearly how there is "division of labour" among its cells.

2. **Either** (a) Give an account of the life-history of an insect, preferably of one which you have studied on living specimens.

**Or** (b) Describe a hen's egg and state what you know of its development.

3. **Either** (a) Name five animals, some of which live in fresh water and the others in the sea, and point out how each of them is adapted to its environment.

**Or** (b) Write a short essay on animals whose colour and markings cause them to blend with their environment.

4. Explain how respiration is accomplished in an insect, a crayfish, and a frog.

5. Write clear explanatory notes on *four* of the following :—

- (a) hibernation,
- (b) regeneration of lost parts,
- (c) enzymes (ferments),
- (d) the differences between arteries and veins,
- (e) the struggle for existence.

6. Point out clearly the differences between a fish and a mammal, in the structure of the heart and the course of the blood.

7. State briefly the chief distinguishing characters of Protozoa, Mollusca, Arthropoda, Amphibia, and Reptilia ; and name an example of each group.

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## SCIENCE

HIGHER GRADE—(ZOOLOGY AND HUMAN PHYSIOLOGY)

Friday, 23rd 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. Describe the structure of Hydra and show clearly how there is "division of labour" among its cells.

2. **Either** (a) Give an account of the life-history of an insect, preferably of one which you have studied on living specimens.

**Or** (b) Describe a hen's egg and state what you know of its development.

3. **Either** (a) Name five animals, some of which live in fresh water and the others in the sea, and point out how each of them is adapted to its environment.

**Or** (b) Write a short essay on animals whose colour and markings cause them to blend with their environment.

4. Explain how respiration is accomplished in an insect, a crayfish, and a frog.

## SECTION II—HUMAN PHYSIOLOGY

5. How may the temperature of the body be ascertained? What would you expect it to be in a healthy person? Explain fully by what means heat is lost by the body and how the heat of the body is maintained.

6. **Either** (a) Why do we eat potatoes with meat? Trace the changes which meat (lean and fat) and potatoes undergo from the time they are taken into the mouth until digestion is completed and the nutriment absorbed.

**Or** (b) Write clear explanatory notes on *four* of the following :—

(a) milk teeth and permanent teeth ;

(b) the constitution and form of the pelvic girdle ;

(c) the position and movements of the diaphragm ;

(d) the advantages of breathing through the nose ;

(e) hormones.

7. What is meant by the terms *sensory nerve* and *motor nerve*? Give two examples of reflex action and explain as fully as you can in *one* of these cases how the nervous system is concerned.

## MUSIC

## LOWER GRADE

Friday, 23rd 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.*

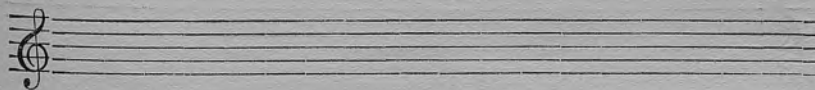
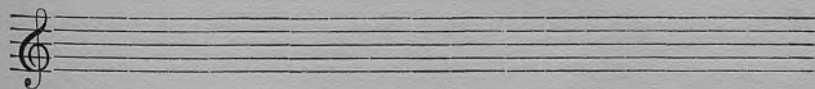
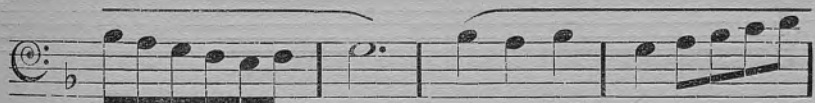
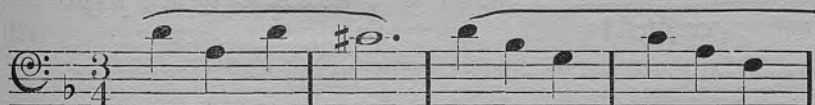


## SECTION I

ALL the questions in this Section should be attempted.

1. (a) In what key is the following passage written? Name the keys into which the melody modulates.

(b) Rewrite the passage in the treble clef a perfect fifth higher, adding the new key-signature.



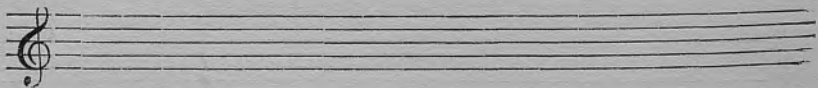
(c) Write the scale of E minor, ascending and descending, without key-signature, indicating by means of accidentals the intervals as they occur. (Any form of the minor scale will be accepted.)



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

“Nae Luck about the Hoose” (F major), “The British Grenadiers” (B major), “Charlie is my Darling” (D minor), “The Laird o’ Cockpen” (A minor), “Bonnie Dundee” (F major), “Duncan Gray” (A major), “There was a Lad” (D major).

Write also the first four bars of any *two* melodies other than the above, remembered by you, giving the name of each. (*Melodies quoted in Question 6 of this paper will not be accepted.*) (22)



3. Write melodic phrases in Staff Notation suitable to the poetic rhythms of the following lines. Key-signatures, time-signatures, bar-lines, and musical terms or metronome marks to indicate the *tempo* must be added, and each syllable placed under the note or notes to which it is to be sung:—

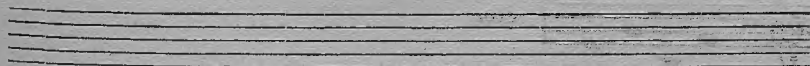
- (a) "The little black cat with bright green eyes  
Is suddenly purring there."

*Harold Munro.*



- (b) "O softly blow, thou biting blast,  
O'er Yarrow's lonely dale."

*The Ettrick Shepherd. (18)*



## SECTION II

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

4. Name any five important composers. Indicate approximately the periods in which they lived either by dates or by reference to some historical incident during their lifetime. Select any one of these composers and state why he is considered important. (10)

(13820 C)

F



5. Explain any *five* of the following :—

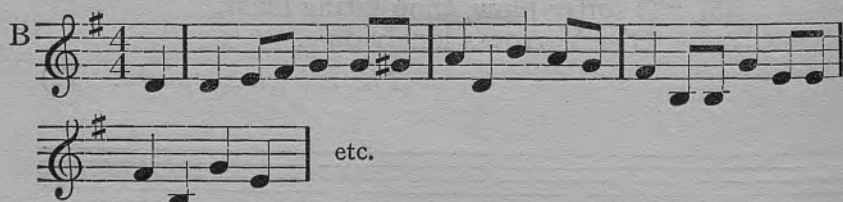
bassoon, scherzando, French horn, allargando, spinet,  
andante con moto, castanets, prelude, overture. (10)

6. 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. (10)

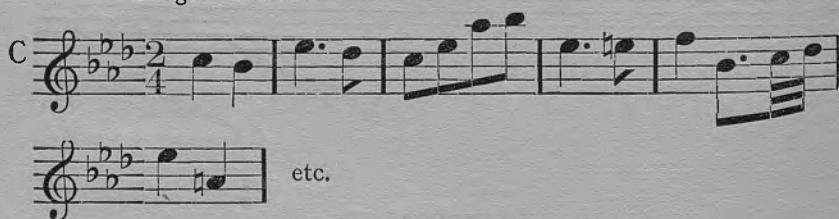
*Andante.*

A 

*Allegro vivace.*

B 

*Adagio cantabile.*

C 

*Andante maestoso.*

D 

*Allegro con fuoco.*

E

etc.

*Adagio sostenuto.*

F

etc.

*Moderato.*

G

etc.

*Tempo di Mazurka.*

H

etc.

J



etc.

*Allegro moderato.*

K



etc.

*Allegro molto moderato.*

L



etc.

*Allegro.*

M



etc.

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## MUSIC

## HIGHER GRADE

Friday, 23rd 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 passage in *three parts* for treble, alto, and bass, making each chord complete. (The treble is the part given.)

*Andante.*

(b) Harmonise this passage in *four parts*, using rests if desired.

(c) Harmonise this passage in *four parts*. The alto and tenor parts may be in any rhythm you please, but the bass must consist of dotted crotchets.

*Allegretto.*



2. **Either** (a) Harmonise in *four parts* in short score:—

6 5 6 6 5 4 7 6 5 (15)

Or (b) Add a melodious alto part to this treble part. Rests may be used.

(15)

3. **Either** (a) Continue the following to make not less than eight bars in all, completing the musical sentence:—

*Gavotte.*

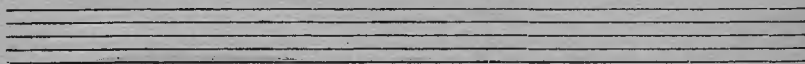
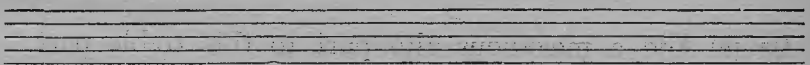
(15)

**Or** (b) Write a melody in staff notation suitable to the poetic rhythm and atmosphere of the following words. A key-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 it is to be sung:—

“ Oh, whiles we would tak’ the turnpike  
 An’ lauch at the Norlan’ win’,  
 An’ whiles we would try the lown<sup>(1)</sup> roads  
 An’ the wee hill tracks that rin.”

*Charles Murray.*

<sup>(1)</sup> Lown = sheltered.



(15)

## SECTION II

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

4. Write a brief description of the rondo as found in a sonata. If the movement be in the key of C, what keys are usually found in the various sections? (10)

5. Define shortly any *four* of the following:—

    sarabande, sonatina, minuet, fugue, ground bass,  
 tarantelle, strathspey.

Illustrate your answer by reference to some work or, if a dance be selected, quote a phrase to indicate the rhythm of the dance. (10)

## SECTION III

Only ONE question from this Section should be attempted.

6. Choose *one* of the following composers ; estimate his importance in the development of music, illustrating your answer by quoting in staff notation two themes from his works, and naming the works from which they are taken :—

Haydn, Schubert, Chopin, Wagner. (15)

7. Give a brief description of Elizabethan music, mentioning specially in what respects it differs from music in the XIXth century, and naming any two outstanding composers of the Elizabethan period. (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)

*Allegro.*

A

etc.

*Allegro moderato.*

B

*Andante.*

C

*Allegro molto.*

D

*Moderato.*

E

*Allegro di molto.*

F

*Andante.*

G

etc.

*Moderato.*

H

etc.

*Allegro.*

J

etc.

*Allegro molto moderato.*

K

etc.

L

Musical notation for the left hand (L) in 4/4 time. The key signature has two flats (B-flat and E-flat). The notation consists of a sequence of eighth notes, with slurs and accents over groups of notes.

etc.

*Allegro.*

M

Musical notation for the middle part (M) in 3/4 time. The key signature has two flats. The notation consists of a sequence of half notes, with slurs over groups of notes.

Musical notation for the right hand (R) in 4/4 time. The key signature has two flats. The notation consists of a sequence of eighth notes.

## APPENDIX

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### 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.

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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.  
 The Lords of Council and Session (for purposes of the Law Agents' Act).  
 The Society of Solicitors before Supreme Courts.  
 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.

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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 Royal Institute of British Architects.  
The Institution of Civil Engineers.  
The Institution of Mechanical Engineers.  
The Institution of Municipal and County Engineers.  
The Institute of Chemistry of Great Britain and Ireland.  
The National Froebel Union.  
The Institute of Physics.  
The Royal College of Veterinary Surgeons.  
The British Optical Association.  
The Chartered Institute of Patent Agents.  
The Library Association.  
The Textile Institute.  
\*The Institute of Transport.

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\* See footnote on page 114.



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

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Circular 80 (Draws attention of Managers of Certified Schools to recommendations of Committees on Sexual Offences and Young Offenders). (January, 1929.) Price 1*d.*; post free, 1½*d.*

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Circular 84 (Mentally Defective Children). (January, 1931.) Price 1*d.*; post free, 1½*d.*

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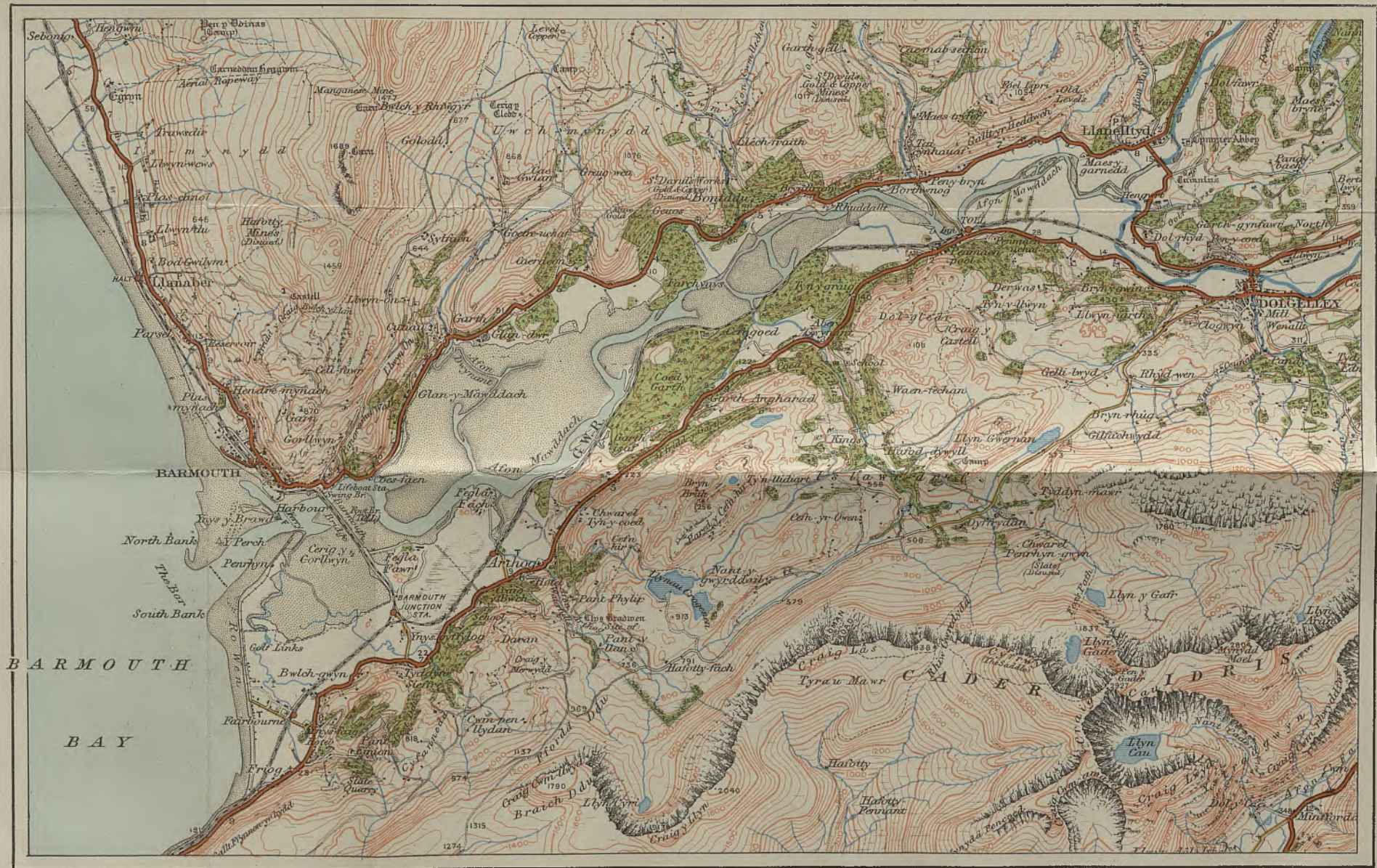
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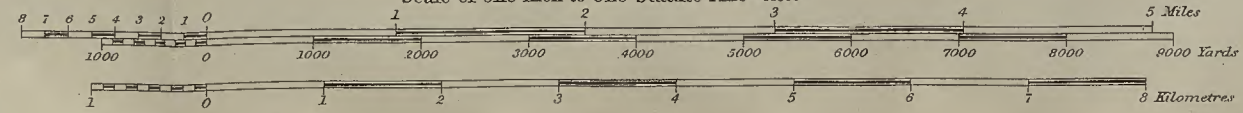




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