APPENDIX A.

HIGH SCHOOL ENTRANCE EXAMINATION, JUNE, 1927.

The High School Entrance Examination was held on June 22nd, 23rd, and 24th at 151 centres throughout the Province.

The number of pupils who were successful in obtaining certificates follows:—

On recommendation	4,428
On examination	1,367
Total	5,795

The names of the winners of His Excellency the Governor-General's bronze medals are:—

District.	Name.	School.	Marks.
No. 1	James Alan Spragge	Monterey Avenue School, Oak Bay	427
No. 2	George Samuel Emerick	Quennell School, Nanaimo	428
No. 3	Eugene John K. Kari	Strathcona School, Vancouver	417
No. 4	Dorothy Muir Lean	David Lloyd George School, Point Grey	433
No. 5	Dorothy Alice Ryan	Atchelitz School, Chilliwack	419
No. 6	James Wallace Drinkwater	Lloyd George School, Kamloops	415
No. 7	Gladys Lillian Griffin	Consolidated School, Vernon	409
No. 8	Edward Christopher Pearce	Central School, Trail	405
No. 9	Olive Letitia Norgrove	Central School, Cranbrook	413
No. 10	Archie Thompson	Booth Memorial School, Prince Rupert	426

HIGH SCHOOL AND UNIVERSITY MATRICULATION EXAMINATIONS, 1927.

The following are the results of the June Examinations:—

	No. of Candidates.	No. passed in all Subjects.	No. granted Supplementals.	No. granted Partial Standing.*
Grade IX	441	191	91	95
Grade X	253	108	59	55
Grade XI. (Normal Entrance)	349	155	87	125
Grade XI. (Junior Matriculation)	1,910	861	548	478
Grade XI. (Normal Entrance and Junior Matriculation)	106	58	38	10
Grade XII	203	52	59	92
Third-year Commercial	105	84	4	17
Third-year Household Science	29	4	9	15
Third-year Technical	35	5	17	12
Totals	3,431	1,518	912	899

* Candidates who fail to obtain the necessary aggregate mark are given credit for a pass standing in all subjects in which they obtain 50 per cent. or more.

Supplemental Examinations were held at eleven centres during the week August 29th to September 3rd. At these examinations 403 were successful in completing Normal Entrance or Junior Matriculation, and 25 Senior Matriculation standing.

The number of candidates sitting for Grades IX. and X. Examination is comparatively small owing to the fact that in all the high schools the principals have the right to determine promotions in these grades. Students of these grades who are granted supplementals or standing in four or more subjects on the June Examinations, and satisfy their principal by oral or written examinations given at the opening of school in September that they have gained a fair standard of proficiency in the subjects in which they failed in June, may be promoted by the principal to the next grade without further Departmental Examinations.

His Excellency the Governor-General's silver medals which are awarded annually to the five leading Junior Matriculation students have been won this year by the following:—

Name.	High School.	Percentage.
Barbara L. Dawson	King George, Vancouver	88.3
Lawrence B. Jack	John Oliver, South Vancouver	88.3
Mavis M. E. Holloway	North Vancouver	87.0
Malcolm H. Hebb	King Edward, Vancouver	86.6
Shirley I. Mayse	Britannia, Vancouver	85.5

The winners of the Royal Institution Scholarships of $150 each awarded by the University of British Columbia on the results of the Junior Matriculation Examinations were Barbara Lilian Dawson, King George High School, Vancouver, and Lawrence B. Jack, John Oliver High School, South Vancouver, each of whom made 88.3 per cent.

Scholarships of $100 each which are awarded annually to the six Junior Matriculation students who obtain the highest standing in their respective districts were won by:—

District.	Name.	High School.	Percentage.
No. 1	Idele L. Wilson	Victoria	85.2
No. 2	Mavis M. E. Holloway	North Vancouver	87.0
No. 3	Bertie A. F. Black	King George, Vancouver	87.6
No. 4	Mary Herbison	John Oliver, South Vancouver	88.0
No. 5	Allan Page	Armstrong	76.2
No. 6	Robert Ellison	Technical, Trail	79.3

The winner of the Royal Institution Scholarship of $75 awarded by the University of British Columbia on the results of the Senior Matriculation Examination is Gordon William Hall, Kelowna High School, who obtained 847 marks out of a possible 1,000.

APPENDIX B.

HIGH SCHOOL ENTRANCE EXAMINATION, JUNE, 1927.

ARITHMETIC. (Time, 2½ hours.)

PART 1.

[NOTE.—*The questions in Part 1 can be solved mentally, but candidates who find any of the problems too difficult to perform mentally may work them out with pen and ink. The answer to each question must be placed on the blank to the right of the question.*]

	Answer.	Value.
60 is ⅘ of what number?	.....	1
Give three prime factors of 30.	.....	1
Give three multiples of 30.	.....	1
Find the H.C.F. of 8, 12, 20.	.....	1
Find the L.C.M. of 8, 12, 20.	.....	1
Give:—		
(*a.*) the square of 15;	.....	1
(*b.*) the square root of 121.	.....	1
What part of:—		
(*a.*) a yard is 8 inches,	.....	1
(*b.*) a shilling is 9 pence,	.....	1
(*c.*) 2 tons is 5 cwt.,	.....	1
(*d.*) a metre is 7 decimetres,	.....	1
(*e.*) a rod is a yard?	.....	1
Express:—		
(*a.*) ⅝ as a decimal,	.....	1
(*b.*) 2¾ as a percentage,	.....	1
(*c.*) .68 as a common fraction in its lowest terms,	.....	1
(*d.*) 78% as a decimal,	.....	1
(*e.*) 78% as a common fraction in its lowest terms.	.....	1
How many yards of gingham can be bought for:—		
(*a.*) $3 at 15c. a yard,	.....	1
(*b.*) 2s. 10d. at 4d. a yard,	.....	1
(*c.*) 39 francs at 1½ francs a yard?	.....	1
(*a.*) Add 2.3 and 10.02.	.....	1
(*b.*) Add 4⅞, 8¾, and 3½.	.....	1
(*c.*) Subtract 2.3 from 10.02.	.....	1
(*d.*) Subtract 19⅝ from 27½.	.....	1
(*e.*) Multiply .08 by .19.	.....	1
(*f.*) Divide 6 by .12.	.....	1
(*g.*) Divide 6 by $^5/_7$.	.....	1
The edge of a cube is 8 inches. Find:—		
(*a.*) the area of one of its sides,	.....sq. in.	1
(*b.*) the total area of its sides,	.....sq. in.	1
(*c.*) the volume of the cube.	.....cu. in.	1

	Answer.	Value.
Gunpowder is composed of sulphur, charcoal, and nitre in the proportion of 5, 7, and 33. How many pounds of nitre are in 90 pounds of gunpowder?	.....	2
I sell a horse for $75 and lost $5. Find the loss per cent.	.....%	2
I sell for $75 and gain $5. Find the gain per cent.	.....%	2
A field is 20 chains long and 16 chains wide:—		
(*a.*) How many acres does it contain?	.....	2
(*b.*) What will it cost to fence it at $3 a chain?	$.....	2
A room is 18 feet long and 15 feet wide. Find:—		
(*a.*) the area of the floor.	.....sq. ft.	2
(*b.*) how many strips of carpet 27 inches wide would have to be purchased to cover the floor if carpet is laid lengthwise.	.....	2
(*c.*) how many strips 30 inches wide would have to be purchased if the carpet is laid crosswise.	.....	2
Two ships are 75° of longitude apart. What is the difference in their time?	.....hours	2
How many books must an agent sell at $2 each to earn $60, if his commission is 40%?	.....	2

PART 2 (WRITTEN WORK).

Value.

8 1. The circumference of a circular park is one mile. How many acres does it contain?

10 2. A merchant in Toronto imported 480 cans of coffee valued at $5.50 a can, each can containing 17½ pounds. He paid a specific duty of 2c. a pound and an ad valorem duty of 15%. Transportation cost $36. How much did the coffee cost him a can?

10 3. A man at the age of 35 took out a straight life insurance policy for $6,500. The premium was $28.10 per $1,000. If he died after making 15 payments, how much more did his heirs receive than he paid in premiums?

12 4. In 1925 a farm containing 160 acres was assessed at $85 an acre. The buildings were assessed at $3,200 but were subject to taxation only for 75% of their assessed value. How much did the owner have to pay in taxes that year on the farm and buildings at the rate of 12.8 mills on the dollar, if he were allowed 7½% rebate for prompt payment?

10 5. On March 5, 1926, H. S. Walters bought a house and lot for $6,750 in Toronto, giving in payment $4,000 in cash and a promissory note for the balance due in 9 months without interest. If the note was discounted on July 15th at 7%, find (*a*) the bank discount, (*b*) the proceeds.

CANADIAN HISTORY. (Time, 1½ hours.)

22 1. In each blank fill in the word or words necessary to make the statement complete.

In 1778 while searching for the.....Passage, Captain James Cook reached the coast of British Columbia at..... From there he proceeded north and entered the.....Ocean through.....Strait. In 1792 another explorer, ..., set out on a similar mission from Fort Chipewyan on Lake Athabaska and proceeded up the..... River to Fort York, where he spent the winter. In the following spring he traced the river to the source of its southerly branch. He then crossed a divide and made his way to a large navigable river which is now called

Value.

..... After rowing down the river for a few days he turned westward and finally reached the.....Ocean at..... The explorations made by these two men proved the impracticability of such a passage, but on their discoveries .....based much of her claim to the coast of British Columbia. Her real supremacy throughout the Northern Pacific Coast was established later by the.....and .....Fur Companies. One of these companies had its chief post at.....on the Columbia River. As the Government of the United States claimed this territory and later obtained it under the.....Treaty, the Company moved its headquarters to Fort....., now..... Six years later, in 1849, ...was made a Crown Colony under the Hudson's Bay Company with..... as its first Governor. The discovery of gold on the mainland which caused a great rush of miners and settlers there, led to the formation of a second Crown Colony in the year.....with..... as its first Governor. The two colonies were united in.....under the name of.....

24 2. The British North America Act, which came into effect in the year....., gives the Dominion of Canada a.....form of Government and divides the legislative powers between the..... Government and the.....Governments. At the head of the Dominion Government is the....., who represents the Crown and is advised by the..... and his Cabinet. The two chambers which make the laws are the..... ..... and the ..... In the House of Commons, Quebec always has.....members and the other provinces are represented in the ratio of their population to that of Quebec, British Columbia having.....members. Since Confederation Canada has admitted the following provinces: (1)..... (2)..... (3)..... (4)..... (5)..... Her two greatest statesmen since Confederation have been..... .....and..... The World War greatly strengthened Canada's position and gave her a new importance. Her Prime Minister at that time, ..., sat in the British War Cabinet and represented Canada at the Peace Conference. Since 1920, Canada has been a full member of the ..... at Geneva. She has won the right to make her own treaties. At the last Imperial Conference held in.....she was represented by..... ....., and with the other Dominions secured a formal admission of.....status with Great Britain. Recently she has appointed the Honourable Vincent Massey to be the Canadian..... at .....

15 3. By the terms of the British North America Act some of the public affairs of the Dominion are placed under the authority of the Dominion Government, others under the authority of the Provincial Governments. Following are various matters falling within the jurisdiction of either the Dominion or the Provincial Governments. Place those that fall within the jurisdiction of the Dominion Government in the column to the left and those that come under the Provincial Governments in the column to the right:—

Education, Trade and Commerce, Postal Service, Militia and Defence, Mining, Navigation and Shipping, Currency and Coinage, Banking, Indian Affairs,

Value.

Weights and Measures, Naturalization of Aliens, Naval Service, Lighthouses, Treaties with Foreign Countries, Civil and Municipal Law.

Dominion Government.	Provincial Government.
1.	1. .....
2.	2. .....
3.	3. .....
4.	4. .....
5.	5. .....
6.	6. .....
7.	7. .....
8.	8. .....
9.	9. .....
10.	10. .....
11.	11. .....
12.	12. .....
13.	13. .....
14.	14. .....
15.	15. .....

15 4. Read each question carefully and *draw a line under the best answer.*

1. America was discovered in the (1) 14th, (2) 15th, (3) 16th, (4) 17th century.
2. Britain's claim to the eastern coast of North America was based upon the discoveries of (1) Columbus, (2) Cook, (3) Hudson, (4) the Cabots.
3. The first colonists to settle at Plymouth, Mass., came from (1) France, (2) Spain, (3) England, (4) Italy.
4. In return for a monopoly of the fur-trade, the Company of One Hundred Associates was to (1) educate the Indians, (2) colonize New France, (3) fight for France, (4) explore the New World.
5. The closing event of the Seven Years' War in America was (1) the capture of Quebec, (2) the capture of Louisburg, (3) the capture of Niagara, (4) the surrender of Montreal.
6. The Treaty of Aix-la-Chapelle closed (1) Queen Anne's War, (2) King William's War, (3) the Great War, (4) King George's War.
7. The "United Empire Loyalists" received this name because of their loyalty to Britain during (1) the struggle with the French for the possession of Canada, (2) the American Revolution, (3) the Fenian Raids, (4) the North-West Rebellion.
8. The Industrial Disputes Act, passed in 1907, was intended to (1) help settle strikes, (2) provide work for the unemployed, (3) legalize trades unions, (4) help avoid strikes.
9. Before Confederation, free trade in natural products was established between the British provinces and the United States by the (1) Washington Treaty, (2) Oregon Treaty, (3) Reciprocity Treaty, (4) Ashburton Treaty.
10. The "National Policy" provided (1) protection of industries, (2) tariff for revenue only, (3) free trade, (4) reciprocity in natural products.
11. When Parliament has completed a session, but its full time of office has not expired, it is (1) dissolved, (2) adjourned, (3) prorogued, (4) purged.
12. Lord Elgin, by signing the Rebellion Losses Bill, made himself very unpopular with (1) the Conservatives, (2) the Reformers, (3) the British Government, (4) the Baldwin-Lafontaine Ministry.
13. Responsible Government was brought into force in Canada by the (1) Constitutional Act, (2) Proclamation of 1763, (3) British North America Act, (4) Act of Union.

Value.

14. The coast of British Columbia was first surveyed and charted by (1) Mackenzie, (2) Vancouver, (3) Meares, (4) Fraser.

15. The Behring Sea Dispute concerned (1) navigation rights, (2) territorial rights, (3) fishing rights, (4) sealing rights.

8 5. In the left-hand column below you will find the names of persons who rendered conspicuous service in Canada. In the right-hand column you will find *descriptions* of the service they rendered. You are required to place on the blank before each description the number that appears before the name of the person to whom the description applies. For example, you have first to find which of the men "opposed the Family Compact in Upper Canada." After reading the names in the left-hand column, you conclude that it was William Lyon MacKenzie. Place on the blank before the description the figure which you find before the name "William Lyon MacKenzie"—namely, "5."
Now complete the rest of the exercise.

1. George Brown	5 Opposed "Family Compact" in Upper Canada.
2. Sir Hugh Allan	..... Established first trading post in British Columbia.
3. Lord Strathcona	..... Leader of opposition to "Family Compact" in Maritime Provinces.
4. Joseph Howe	..... First white man to see Rocky Mountains.
5. William Lyon MacKenzie	..... Established first Canadian Steamship Line.
6. David Thompson	..... Editor Toronto Globe, A Father of Confederation.
7. Sir James Douglas	..... C.P.R. Financier and Canadian High Commissioner to London.
8. Verendrye	..... Explorer of Columbia River.
9. Captain John Meares	..... First Governor of British Columbia.

16 6. Complete the following statements by putting the proper word or name on the dotted line:—

1. The Governor-General of Canada is.....
2. The Lieutenant-Governor of British Columbia is.....
3. The Chief Officer in a City is called.....
4. The Chief Officer in a Rural Municipality is called.....
5. The Premier of Canada is.....
6. The Premier of British Columbia is.....
7. The Leader of the opposition in the House of Commons is.....
.....
8. The first ship to be built on the north-west coast of Canada was built at
.....
9. The Grand Trunk Pacific Railway was built during the Premiership of.....
.....
10. The University of British Columbia is located at.....
11. Coal was first discovered in British Columbia at.....
12. The World War ended in the year.....
13. Dominion Day is on.....
14. Old Fort Garry is now called.....
15. In the War of 1812 Tecumseh fought on the side of the.....
16. The City of Quebec was founded in 1608 by.....

DRAWING. (Time, 2¼ hours.)

Value.

18 (*a.*) Select three examples of work from your drawings, as follows:—

(1.) An example of shading in pencil (nature-work).

(2.) An example of colour-work (geometrical design).

(3.) An example of model or object drawing.

Freehand Object-drawing.

26 (*b.*) Draw *one* of the following (no ruling allowed):—

(1.) A group of two objects based on the cylinder, having one of the objects in an *oblique* position.

(2.) A group of two objects composed of a jug and a book.

(3.) A group of two models composed of a cube and a cone on a supporting surface, with shading.

28 (*c.*) Construct a rectangle 6 inches by 3½ inches and letter therein *one* of the following:—

(1.) An Advertisement for a School Concert,

(2.) *or* A Menu Card for a Dinner Party,

(3.) *or* The following lines:—

Teach me, my God and King,
In all things Thee to see,
And what I do in anything,
To do it as for Thee.

Then add a suitable border to the rectangle.

28 (*d.*) In a semi-circle, having a 3-inch radius, make a design using *one* of the following units:—

(1.) Oak leaves and acorns.

(2.) Tulip leaves, flowers, and buds.

(3.) Any Greek or Egyptian design you have studied during the year.

GEOGRAPHY. (Time, 2¼ hours.)

15 1. In each blank fill in the word or words necessary to make the statement complete. For example, in the sentence, "The capital of British Columbia is.....," you would put in the blank the word "Victoria."

(*a.*) A. represents a point at 10 degrees North Latitude and B. represents a point due south of A. at 10 degrees South Latitude. The distance between A. and B. is approximately.....miles. If these points, A. and B., are at sea-level, the climate of A. as compared with that of B. will be ..... If B. has an altitude of 2,000 feet, while A. is at sea-level, the climate of A. will be.....than that of B. If the position of the city of Quebec is 47 degrees North Latitude, the distance from Quebec to the North Pole is.....degrees.

(*b.*) A country is said to have an oceanic climate when the prevailing winds blow from the.....and to have a continental climate when it is situated.....away from the modifying influence of the.....or when the prevailing winds are from the..... Therefore, the climate of the prairie provinces of Canada is.....while that of the coast of British Columbia is..... Southern Ontario has less extreme temperatures than Southern Manitoba chiefly owing to the influence of the.....

Value.

(*c.*) All winds North of the Equator, no matter in what direction they start, are deflected to the....., and all winds South of the Equator are deflected to the....., owing to the.....
The trade winds have a marked effect upon climate. As they blow towards the Equator they become.....and thus become..... winds. Therefore, when they blow over level plains there will be..... .....rainfall and such regions will be.....
When the trade winds blow against land sloping upwards they....., the air becomes.....and there is.....rainfall.

10 2. Under the headings given below, write the names of the countries drained by the following rivers and the waters into which the rivers empty.

River.	Country or Countries it drains.	Water into which it empties.
Mississippi.....	.....	.....
Mackenzie.....	.....	.....
Amazon.....	.....	.....
Nile.....	.....	.....
Yang-tse-kiang....	.....	.....
Ganges.....	.....	.....
Volga.....	.....	.....
Danube.....	.....	.....
Congo.....	.....	.....
Columbia.....	.....	.....

10 3. Locate definitely the following places in British Columbia and state the chief industry of each:—

Place.	Location.	Industry.
Penticton.....	.....	.....
Anyox.....	.....	.....
Trail.....	.....	.....
Chilliwack.....	.....	.....
Quesnel.....	.....	.....
Cumberland.....	.....	.....
Britannia Beach.....	.....	.....
Powell River.....	.....	.....
Princeton.....	.....	.....
Ocean Falls.....	.....	.....

Value.

13 4. Locate the following cities and state the main industry or most important feature connected with each:—

City.	Location.	Industry.
Hamilton		
Montreal		
Detroit		
Birmingham		
Glasgow		
Hamburg		
Marseilles		
Sao Paulo		
Karachi		
Johannesburg		
Melbourne		
Yokohama		
Havana		

10 5. Write under the heading "Source of Supply" the names of the countries which are the chief sources of supply of the following commodities (one country for each commodity):—

Commodity.	Source of Supply.
Wool	
Woollen goods	
Raw cotton	
Tea	
Silk	
Coffee	
Gold	
Asbestos	
Diamonds	
Rubber	

10 6. Write a description of Argentina, Japan, Italy, or Mexico, under the following headings:—

(*a.*) Surface and drainage.

(*b.*) Climate.

(*c.*) Chief products.

(*d.*) Two chief cities with location of each.

Value.

19 7. On the accompanying map of Europe show:—

(1.) The following countries, locating each by placing in the proper position on the map the *number* that appears before the name of the country. (For example, you are required to place the figure "1" on the map to locate the British Isles instead of printing the words "British Isles.")

1. British Isles.	9. Denmark.	16. Rumania.
2. France.	10. Poland.	17. Czechoslovakia.
3. Germany.	11. Yugoslavia.	18. Greece.
4. Italy.	12. Russia.	19. Bulgaria.
5. Switzerland.	13. Finland.	20. Hungary.
6. Austria.	14. Norway.	21. Spain.
7. Holland.	15. Sweden.	22. Portugal.
8. Belgium.		

(2.) The following cities, locating each by placing the capital letter corresponding to each city on the proper position on the map. (For example, print the capital letter "A" where London should be located on the map, and so on.)

A. London.	D. Rome.	G. Warsaw.
B. Paris.	E. Madrid.	H. Vienna.
C. Berlin.	F. Moscow.	I. Constantinople.

(3.) Print neatly in the proper positions the following: North Sea, Bay of Biscay, Baltic Sea, Kiel Canal, Adriatic Sea, Black Sea, Bosphorus.

13 8. On the accompanying map of British Columbia show plainly:—

(1.) Fraser, Skeena, and Columbia River Systems;

(2.) Main lines of the Canadian Pacific and the Canadian National Railways;

(3.) The following cities, printing neatly the name of each city in the proper position on the map and placing a small circle at the point where the city is located:—

1. Vancouver.	6. Kamloops.
2. Victoria.	7. Revelstoke.
3. Nanaimo.	8. Nelson.
4. Prince Rupert.	9. Kelowna.
5. Prince George.	10. Cranbrook.

GRAMMAR AND COMPOSITION. (Time, 2½ hours.)

22 1.

When the darkness of night has fallen
And the birds are *fast* asleep,
An army of silent searchers
From the dusky shadows creep.

As I sat *dreaming* by the camp-fire, I *little* thought *that* the *very* wolf *which* had dogged my footsteps all the morning was watching my every movement from behind a clump of evergreens near which I had pitched my tent.

(*a.*) Give the clauses (principal and subordinate) that you find in the above sentences. State the kind and the relation of each clause.

9 (*b.*) Give the "part of speech" and the "relation" of each word in italics in the sentences for analysis.

4 (*c.*) In the first sentence for analysis find an adjective phrase and also an adverb phrase. State what word each phrase modifies.

Value.

11 2. In the left-hand column below you will find a list of sentences in each of which there are two words in brackets. Only one of the words is required in the sentence. Draw your pen through the word that is not required. Then read the rules in the right-hand column. When you find the rule that applies to the choice you made, place on the dotted line before the sentence the figure you find before the rule.

..... The school clock or my watch (is) (are) not right.	1. A predicate noun or pronoun is in the nominative case.
..... A person should be careful of (his) (their) reputation.	2. A participle, when used as a part of the predicate, is always accompanied by an auxiliary.
..... We admire (that) (those) kind of people.	3. The object of a preposition is in the objective case.
..... He (don't) (doesn't) like to go to school.	4. A verb agrees with its subject in number.
..... It is (I) (me).	5. An adjective should be used to modify a noun.
..... Mary felt very (happily) (happy) over her good fortune.	6. A pronoun agrees with its antecedent in number.
..... His teacher says he (done) (has done) good work.	7. The object of a verb must take the objective form.
..... Let you and (I) (me) the battle try.	8. An adverb should be used to modify a verb.
..... He gave a pencil to each of (us) (we) boys.	9. Singular subjects joined by "or" or "nor" take a singular verb.
..... Drive (slow) (slowly).	10. The subject of a verb must take the nominative form.
..... (Her) (She) and her friends called on us to-day.	11. The adjective "that" is used with a noun of singular number.

11 3. (*a.*) The servant asked his master where the officers had gone.
(*b.*) Carry this parcel to the store.
(*c.*) We were recognized by a person who was passing.
(*d.*) If Harry were here he would help us.
(*e.*) There is a box which I have not yet opened.
(*f.*) As you are doing good work you will soon be promoted.
Give the voice, mood, tense, number, person, and class (transitive or intransitive) of the verbs and verb phrases in the above sentences.

7 4. In the space to the right give:—
(*a.*) Plural of "Governor-General" .....
(*b.*) Plural of "calf" .....
(*c.*) Plural of "alley" .....
(*d.*) Plural of "basis" .....
(*e.*) Plural of "brother-in-law" .....
(*f.*) Feminine of "earl" .....
(*g.*) Masculine of "maid" .....
(*h.*) Masculine of "landlady" .....
(*i.*) Feminine of "wizard" .....
(*j.*) Objective plural of "I" .....
(*k.*) Possessive singular of "us" .....
(*l.*) Comparative degree of "last" .....

Value.

(*m.*) Positive degree of "less unkindly"....

(*n.*) Superlative degree of "pleasantly"....

14 5. (*a.*) Express in indirect speech:—

Nelson signalled to his fleet, "England expects every man to do his duty."

(*b.*) Write a suitable word in each blank:—

a drove of....; a troop of....;
a flock of....; a squadron of....

(*c.*) Use each of the following words in a sentence: Suite, counsel, assent, prey, peal, mettle, rout, currant.

22 6. (*a.*) You are the manager of the Economy Book Company, with offices at 347 Printers Lane, Vancouver, B.C. You have received an application for the position of local salesman from Mr. C. L. York, 475 Pine St., Victoria, B.C., and you wish him to start work on July 2nd. Write a suitable letter to Mr. York.

(*b.*) Write a composition of about 20 lines on one of the following topics:—

The Annual Picnic.
The School Library.
The School Garden.

PENMANSHIP AND DICTATION AND SPELLING. (Time, 1½ hours.)

(25 marks for Penmanship and 75 marks for Dictation and Spelling.)

[NOTE.—*The Supervisor shall read Sections A and B to the candidates three times—the first time to enable them to gather the meaning; the second time slowly and clearly in subsections as marked by the bars, allowing all the candidates sufficient time to write the words; and the third time for review. He should repeat words and phrases, when necessary, in order that every candidate may hear distinctly. Punctuation marks should not be dictated. Candidates are not permitted to rewrite the passages.*]

25 A. The child's natural tendency | to promote his own health and strength | by incessant exercise | receives a more or less decisive check | as soon as he embarks | upon his school career, | for he is then required | to sit or stand | in prescribed positions | for some hours each day | for purposes of instruction. | When all has been done | that can be done | to improve the hygienic conditions | of school work, | and when due allowance | has been made | for such out-of-door instruction | as can be given, | it remains true | that school life | is on the whole | unfavourable to sound physical development, | unless counteracting agencies | are at work. | Such agencies are supplied, | at least in part, | by the well known games | and sports | which stand | as modern representatives | of traditional forms | of recreation, | such as cricket, | football, | hockey, | tennis, | rowing, | fencing, | running, | and jumping. | Upon the number and variety | of these pastimes, | and the skill and enthusiasm | of their devotees, | no country | has a better right | than our own | to pride itself, | and it would be difficult | to overestimate | the physical and moral advantages | which they offer, | when pursued | under proper conditions.|

16 B. "Does he use corporal punishment?" | I ventured to ask.|

"No, he uses capital punishment. | If we don't do as he tells us, | he cuts off our heads."|

"How terrible!" I exclaimed.|

"Not at all. | We used to think so, | and complained to Mother Nature | about it; | but she told us | it was for our good; | and, of course, | whatever she says | is right."|

Value.

"It most certainly is," | I assented.|

"So we pay strict attention | to the Professor | and never, never forget | our lessons. | The hours are not long. | School remains in session | from 9 a.m. to 9:15 a.m., | with a recess | of ten minutes. | Mother Nature | says her children | must not be crammed | with knowledge | which they cannot digest." |

16 C. (*a.*) An exceedingly hungry wolf | knocked at the front door | of the country cottage.|

(*b.*) A violent wind storm | blew furiously | for several days | over a section | of the territory | surrounding the Gulf of Mexico.|

(*c.*) Plain stationery was purchased | for recording purchases | by the stationary engineer.|

(*d.*) A catalogue | reviewing extremely valuable books | was received by me | on Wednesday.|

(*e.*) Reputations of industrious persons | are oftentimes | injuriously affected | by the unjust criticisms | of mischievous persons.|

(*f.*) The superintendent of the bureau | foretold a decided change | in the weather.|

(*g.*) During his few leisure moments | he engaged in a hasty survey | of the surrounding region.|

18 D. ability.
provision
curious
political
attraction
university
proclaim
vacant
distinguish
lightning
combination
religion
affair
prominent
disappoint
sphere
virtue
receipt
mystery
oppress
representative
contrary
jealousy
assign
genius
subdue
revenue
exceeding
disease
premium
allege
victuals
twilight
analysis
vehicle
discern

APPENDIX C.

HIGH SCHOOL EXAMINATION, JUNE, 1927.

Grade IX.

ALGEBRA. (Time, 2 hours.)

Value.

12 1. (*a.*) Add $x^3 - \frac{1}{2}x + \frac{1}{4}$ and $x^2 - \frac{1}{2}x - \frac{1}{4}$.

(*b.*) From $x^3 - \frac{1}{2}x + \frac{1}{4}$ subtract $x^2 - \frac{1}{2}x - \frac{1}{4}$.

(*c.*) Multiply $x^3 - \frac{1}{2}x + \frac{1}{4}$ by $x^2 - \frac{1}{2}x - \frac{1}{4}$.

(*d.*) Divide $x^3 - \frac{1}{2}x + \frac{1}{4}$ by $x^2 - \frac{1}{2}x - \frac{1}{4}$.

15 2. (*a.*) Find the numerical value of the following expression when $a = 6$, $b = -3$, $c = 5$, $d = 1$, $e = 0$:—

$$\frac{11a + b(2c + ad - ce)}{3b + \sqrt{6ac^2}}.$$

(*b.*) Substitute $k - 1$ for n in the expression $\frac{1}{6}n(n+1)(2n+1)$.

(*c.*) Show that $x^3 + 10x$ is equal to $7x^2$ for each of the values $x = 2$, $x = 5$, $x = 0$. Which of these expressions is the greater, and by how much, when $x = 6$?

16 3. (*a.*) Remove all brackets and combine like terms:—

$$35\left[\frac{3x - 4y}{5} - \frac{1}{10}\left\{3x - \frac{5}{7}(7x - 4y)\right\}\right] + 8(5y - 2x).$$

(*b.*) Simplify:—

$$\frac{27m^2}{60n} \times \frac{36p^3q^2}{81mn} \div \frac{\sqrt{m^2p^2x^{10}}}{\sqrt[3]{n^6x^9y^3}}.$$

24 4. Solve:—

(*a.*) $\frac{9}{4}(x - 1) - 5(x - 4) = \frac{24}{5}(x - 6) + \frac{5}{4}$.

(*b.*) $1.7(x - 2) - .3(2x + .9) = .73$.

(*c.*) $3x + 4y = 7$
$5x = 2y + 29$.

15 5. Resolve into factors:—

(*a.*) $2x^2 - 2x - 4$.

(*b.*) $x^2 + 5x + 6 + px + 3p$.

(*c.*) $pq + rs + ps + qr$.

18 6. A lazy boy was told to divide one-half of a certain number by 6, and the other half by 8, and then to add the quotients. To save trouble he divided the number itself by 7. His answer was too small by 7. Determine the number.

ARITHMETIC. (Time, 2 hours.)

[*All work must be shown.*]

Value.

1. Copy and fill in the blanks:—

1 (*a.*) There are ..... rods in a mile.

1 (*b.*) There are ..... pens in a gross.

1 (*c.*) There are ..... acres in a quarter-section.

1 (*d.*) There are ..... gallons in a cubic foot of water.

1 (*e.*) There are ..... cubic feet in a cord of wood.

1 (*f.*) There are ..... inches in a metre.

2 (*g.*) There are ..... decigrams in a kilogram.

2 (*h.*) There are ..... pounds (avoirdupois) in a kilogram.

2 (*i.*) A kilometre equals ..... mile (nearly).

2 (*j.*) There are ..... pounds in 2 tons 3½ hundredweight.

2 (*k.*) 56 is ⅞% of .....

2 (*l.*) A bottle holds ⅘ quart. It will require ..... gallons to fill 75 such bottles.

8 2. (*a.*) Express as decimals ½%; 3¾%; 225%.

(*b.*) Express as per cents 1/25; 3.6; .00125.

(*c.*) Write 1927 in Roman numerals.

8 3. A gallon is equal to 4.543 litres. How many cubic centimetres are contained in 1 pint?

10 4. A milk dealer received in one month 257,395 pounds of milk, for which he paid 3.9 cents a pound. The cost of shipping, filtering, pasteurizing, bottling, and factory and office expenses amounted to 15 cents per gallon. Milk weighs 8.5 pounds per gallon and sells at 15 cents a quart. How much did the dealer make or lose on his month's business?

10 5. A house that rents for $50 a month costs the owner $120 for taxes and $75 for repairs during the year. There is a mortgage for $3,000 on which he pays 5% interest. By what sum does the rent exceed the expenses?

10 6. Mr. Smith bought his son, Robert, a $150 bond, bearing interest at 4½%, on the date that it was issued, June 15th, 1925. If Robert keeps it until it matures, June 15th, 1945, cashing the interest coupons as they come due, what will be the total amount he will receive for the coupons?

10 7. A man paid $25.60 income-tax, $700 of his income being exempted. The rate of taxation was 16 mills on the dollar. What was his income?

13 8. A boy deposited in the savings-bank on January 1st, 1924, the sum of $25; on July 1st he deposited another $25; on January 1st, 1925, another $25. The bank compounds its interest on June 30th and December 31st at 4% per year. How much did the boy have to his credit on July 1st, 1925?

13 9. A man bought 300 shares of a certain stock at 87½. Later he received 15 shares of the stock as a dividend on his 300 shares. Becoming alarmed because the dividend was not in cash, he sold his holdings at 81⅞. Find his loss, brokerage of ⅛% for both buying and selling being allowed.

DRAWING. (Time, 2 hours.)

A. Selections from Drawings.

[*The time taken to collect these drawings is not to be deducted from the two hours allowed for this paper.*]

Select the following from the drawings you have made during the past year, and write your distinguishing number at the top right-hand corner of each. Before beginning your drawing give these to the Examiner.

Value.

6 1. An example of lettering.

6 2. An example of shading (either nature-drawing or object-drawing).

6 3. An example of ornamental design.

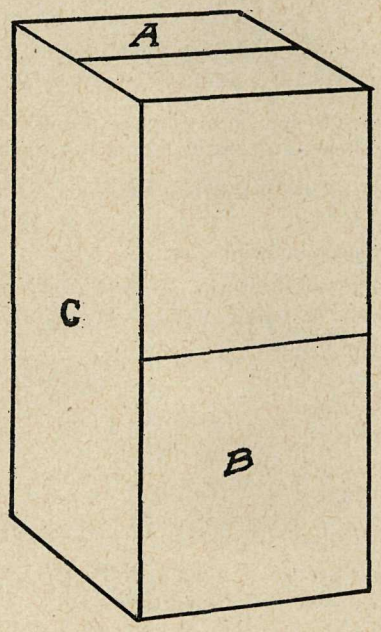
B. Object-drawing.

10 Make a drawing not less than 6 inches high of the illustration given below.

10 Let "A" represent a lid and change this part of the drawing to show a lid opened in a vertical position.

15 Let "B" represent a door. Open the door towards the right side, and show a shelf inside.

15 On the side of the illustration marked "C," letter, in a vertical direction, the word Gramophone.



C. Design.

32 Work *one* of the following questions:—

(1.) Draw the elevation of a lamp-shade 6 inches wide, height in suitable proportions. Decorate with an appropriate design and indicate the colours you would use.

(2.) Draw the plan of an oblong box-lid 6 inches long, width in suitable proportions. Decorate with an appropriate design and indicate the colours you would use.

(3.) Draw a poster to include the following words: Bapco Paint Co., Victoria, B.C., and indicate the colours you would use. Size, 10 inches by 8 inches.

ENGLISH COMPOSITION. (Time, 2 hours.)

Value.

8 1. What is wrong with the following sentences? Rewrite each in correct form.

(*a.*) The School Board donated uniforms to the team.

(*b.*) Between you and I, he does not know as much as he thinks he does.

(*c.*) Each of the books were very heavy.

(*d.*) So much progress is now being made in air travel that the aeroplane will soon step into the shoes of the railway train.

10 2. Find the adverbs in the following sentences and substitute for each adverb an appropriate adverbial phrase:—

(*a.*) He used his power illegally.

(*b.*) The man spoke very logically.

(*c.*) The boy walked deliberately into the middle of the street.

(*d.*) Subsequently, I decided not to send the letter.

(*e.*) We expect the weather will soon clear.

12 3. Change the following from direct to indirect narration:—

"Tell me about your uncles, Clive," said the Colonel, as they walked on arm in arm.

"What about them, sir?" asked the boy, "I don't think I know much."

"You have been to stay with them. You wrote about them. Were they kind to you?"

"O, yes, I suppose they were very kind," replied Clive, "they always tipped me; only you know, when I go there I see very little of them."

10 4. Write a note addressed to your local postmaster informing him that you have changed your place of residence and asking him to forward your mail to your new address.

60 5. Write a composition of not more than two hundred words on *one* of the following subjects:—

(1.) My Experiences in Gardening.

(2.) The Character of Ebenezer Balfour. (*Kidnapped.*)

(3.) A Description of Doone Valley. (*Lorna Doone.*)

(4.) A Motor-trip.

ENGLISH LITERATURE. (Time, 2 hours.)

[*Candidates will answer Section A, Part I. or Part II.; Section B; and* either *Section C* or *Section D.*]

SECTION A.

Part I. Narrative English Poems, Part I.

15 1. By a careful analysis of *one* of the following poems show that it is typical of ballad poetry:—

(*a.*) "Brignal Banks."

(*b.*) "The Feud."

15 2. Explain briefly but carefully:—

(*a.*) On me
Rested the hopes of Italy.

Value.

(*b.*) Thou art a God too,
O Galilean!
And thus single-handed
Unto the combat,
Gauntlet or Gospel,
Here I defy thee!

(*c.*) But misery still delights to trace
Its semblance in another's case.

10 3. Contrast the two poems "Ivry" and "The Battle of Blenheim."

Or

Discuss the pictorial power of Ralph Hodgson as revealed in the poem, "The Bull."

Part II. Narrative English Poems, Part II.

15 1. Discuss at some length your interpretation of the meaning of either of the following poems:—

(*a.*) "The Raven."

(*b.*) "Goblin Market."

15 2. Explain briefly but carefully:—

(*a.*) Since then, at an uncertain hour,
That agony returns:
And till my ghastly tale is told,
This heart within me burns.

(*b.*) He saw the school close, sunny and green,
The runner beside him, the stand by the parapet wall.

(*c.*) An' losses on the roundabouts means profits on the swings.

10 3. Discuss the pictorial power of Tennyson as revealed in "The Lady of Shalott."

SECTION B. ENGLISH PROSE SELECTIONS, PART I.

[NOTE.—*Write on question 1 and* either 2 or 3.]

15 1. Write a paragraph on *one* of the following topics:—

(*a.*) The Eccentricities of Sir Roger de Coverley.

(*b.*) The Character of Will Wimble.

(*c.*) The Citizen of the World as a Severe Critic of English Society.

(*d.*) The Whimsical Humor of Lamb.

(*e.*) The Charm of Habit ("A Plea for Gas Lamps").

15 2. Write on *one* of the following themes:—

(*a.*) The Versatility of Oliver Goldsmith.

(*b.*) The Lesson of the Great War ("The Cross of Sacrifice").

(*c.*) The Duty of the House of Lords as Suggested in "An Address to the Throne."

(*d.*) A Brief Biography of Lamb as Revealed in his Letter to Wordsworth.

(*e.*) Rupert Brooke's Discontent with New World Scenery.

Or

3. Draw up a carefully planned outline for an essay based on the subject-matter of one of the short stories from *English Prose Selections, Part I.*

SECTION C. KIDNAPPED.

10 1. Write a paragraph on *one* of the following topics:—

(*a.*) The Vanity of Alan Breck Stewart.

(*b.*) The Treachery of Uncle Ebenezer.

Value.

20 2. Give a brief account of *one* of the following:—

(*a.*) The Wreck of the Brig Covenant.

(*b.*) David Balfour Comes into His Inheritance.

(*c.*) The Quarrel between David and Alan.

SECTION D. LORNA DOONE.

10 1. Write a paragraph on *one* of the following topics:—

(*a.*) Why I Like John Ridd.

(*b.*) Tom Faggus and his Mare, Winnie.

20 2. Give a brief account of *one* of the following:—

(*a.*) The Death of Carver Doone.

(*b.*) John Ridd Leaves School.

(*c.*) How to Make the Cream Rise.

FRENCH. (Time, 2 hours.)

10 1. (Répondez en français aux questions suivantes.) Answer the following questions in French:—

(*a.*) De quelle couleur est votre cravate?

(*b.*) En quoi est cet encrier?

(*c.*) Comment vous appelez-vous?

(*d.*) Pourquoi avons-nous des yeux?

(*e.*) De quelle couleur sont vos cheveux?

(*f.*) Comment est la neige?

(*g.*) Quel légume préférez-vous?

(*h.*) Quel âge avez-vous?

(*i.*) A quoi jouez-vous?

(*j.*) Qu'est-ce que vous faites le soir?

10 2. (*a.*) (Mettez au pluriel.) Write in the plural:—

(1.) C'est un beau salon bleu.

(2.) Cet homme ne chante pas.

(3.) Je ne peux pas lever cette horloge.

(4.) Il met la lettre dans son enveloppe.

(5.) Elle vient à l'école le matin.

10 (*b.*) (Mettez au singulier.) Write in the singular:—

(1.) Ils écrivent le français.

(2.) Ces fraises ne sont pas bonnes à manger.

(3.) Mangent-ils des pommes vertes?

(4.) Des Américains demeurent dans ces maisons.

(5.) Ces autres garçons finissent leurs leçons.

3. (Ecrivez en français le contraire de.) Write in French the *opposite of*:—

10 (*a.*) fermer; dedans; rond; pareil; vite; fort; avec; à la fin du jour; épais; au-dessous de.

5 (*b.*) (les noms de cinq bâtiments) the names of five buildings.

5 (*c.*) (les jours de la semaine) the days of the week.

Value.

20 4. (Ecrivez dix phrases en employant les mots suivants.) Write ten sentences in French, using the following words: longtemps; combien; les Chinois; âgé; tout le monde; pareils; lourde; quelqu'un; Canadienne; en voiture.

20 5. Ecrivez en français:—

(*a.*) The French live in France.

(*b.*) Where do the English live?

(*c.*) There are many automobiles in the United States.

(*d.*) Who lives in British Columbia?

(*e.*) Today is the first of July.

(*f.*) On the eleventh of August.

(*g.*) In summer all the boys play ball.

(*h.*) It is half past one.

(*i.*) She is not strong enough to go to school.

(*j.*) Our holidays are as long as your holidays.

10 6. Write a sentence in French explaining each of the following words: votre cousine; un fauteuil; la salle à manger; le facteur; le petit déjeuner.

GENERAL SCIENCE. (Time, 2 hours.)

[*Questions are of equal value. Answer* six *only.*]

1. (*a.*) Name and define one *unit of work.*

(*b.*) How much work is done by a boy weighing 100 pounds in climbing a stairway of 50 steps, each with a rise of 6 inches?

(*c.*) If he carries on his shoulder a weight of 25 pounds, how much extra work would he accomplish?

2. (*a.*) Name the two kinds of *barometers* ordinarily used and explain how they differ in action.

(*b.*) What practical use is made of a *pocket* barometer?

3. (*a.*) Define *absolute* and *relative* humidity of the air.

(*b.*) What effect has a lowering of the temperature of the air upon (i) its *relative humidity,* (ii) its *absolute humidity?*

(*c.*) A cubic metre of air at 20° C. will contain 17.20 grams of water when saturated. The amount of water actually in the air at this temperature is 10.32 grams. Calculate the *relative humidity* of the air.

4. (*a.*) Clearly explain *mechanical advantage* and *efficiency* of a machine.

(*b.*) A man weighing 150 pounds, and standing on the ground floor, wishes to lift a weight of 750 pounds from the ground to an upper floor, employing a system of pulleys. Neglecting loss of power through friction, how many supporting strands of the rope or cable must be used?

5. Compare *plants* and *animals* as to: (*a*) *nutrition;* (*b*) *food;* (*c*) *sources* from which the food is obtained.

6. (*a.*) Write a concise account of bacteria as to *size, number, beneficial* kinds, *harmful* kinds, and *means of distribution.*

(*b.*) What means should be employed to ensure a reasonably pure supply of milk for food?

7. (*a.*) Enumerate the agencies by which *rock* has been converted into *soil.*

(*b.*) Give a concise description of soil *as to:* (i) *kinds and structure;* (ii) *necessity for drainage;* (iii) *maintenance* and *restoration* of *nitrogen* supply; (iv) purpose of *cultivation.*

8. (*a.*) Explain what each of the following electrical units measures: *volt; ampere; ohm; watt.*

(*b.*) If a current of 5 amperes and 110 volts is sent through an electric toaster, how many watts will it produce? Calculate the cost of operating the toaster for 12 minutes at 7 cents per kilowatt-hour.

9. (*a.*) Describe any common electrical device which illustrates the heating effect of the electric current. Use a diagram.

(*b.*) What *safety* contrivance is employed to prevent damage by overheating? Explain its action.

GEOMETRY. (Time, 2½ hours.)

Value.

14 1. A and B are two points 2⅝ inches apart. Find a point P which is 2½ inches from A and 1⅝ inches from B. Draw a perpendicular from P to AB and measure its length.

16 2. Wishing to find the height of a cliff, I fix two marks, A and B, 100 feet apart on the same level and in line with the foot of the cliff. From A the angle of elevation of the top of the cliff is 37° and from B the angle of elevation is 24°. Draw a diagram and estimate the height of the cliff. Use the scale 25 feet to 1 inch.

14 3. If two angles of a triangle are equal, the sides opposite to these angles are equal.

14 4. If one side of a triangle is produced, the exterior angle so formed is equal to the sum of the two interior opposite angles.

14 5. A straight line stands on another straight line. Prove that the bisectors of the two adjacent angles so formed are at right angles to each other.

14 6. If the diagonals of a quadrilateral bisect each other, the quadrilateral must be a parallelogram.

14 7. Two circles intersect at X and Y. Prove that XY is bisected at right angles by the straight line joining the centres of the two circles.

HISTORY. (Time, 2 hours.)

[*Answer any* five *questions.*]

20 1. (*a.*) Where and how did men probably first pass from the Stone Age to the Age of Metals?

(*b.*) Name three stages in the Age of Metals, showing how each marked an advance on the stage before it.

(*c.*) Write briefly on the "four supreme contributions" to civilization made by prehistoric man.

20 2. (*a.*) Describe the natural features of Upper and of Lower Egypt.

(*b.*) Mention points of difference between the Old and Middle Kingdoms in Egypt.

(*c.*) Explain how Egyptian science was "the gift of the Nile."

(*d.*) What was the purpose of the pyramids? What do you know of the method employed in building them?

20 3. (*a.*) To what end did the Assyrians devote their main energy? What was the cause of their downfall?

(*b.*) Write briefly on social life in Chaldea under the following heads: the king, the wealthy classes, the peasants, the administration of justice.

(*c.*) By what devices did Darius "the Organizer" check rebellion?

Value.

20 4. (*a.*) Write a brief account of the Achaean invaders of Greece. What is the chief source of our knowledge of this race?

(*b.*) Describe the government of the city state in early Greek history, explaining the parts played by the King, the Council, and the Assembly.

20 5. (*a.*) Compare the education of boys in Sparta and Athens.

(*b.*) Describe the daily life of an Athenian gentleman in the age of Pericles.

20 6. (*a.*) Write on Themistocles—his character, the main aim of his policy, his measures for securing the safety of Athens.

(*b.*) What was the purpose of the Confederacy of Delos? Why was it so called? Who were its members? How was it governed? What became of it?

20 7. (*a.*) Write on Socrates—his person, his aims, his use of the "Socratic method," his last days.

(*b.*) Mention three weak points in Greek culture. State briefly some respects in which Greek civilization was less "comfortable" than our own.

20 8. (*a.*) What event led to the institution of tribunes at Rome? For what purpose were they elected? What were their powers?

(*b.*) How were *written* laws first introduced at Rome?

(*c.*) What is meant by "the public land" in Roman history?

20 9. (*a.*) What measures did the Romans adopt to win the war after their defeats by Hannibal?

(*b.*) What is a "yeoman"? How did Tiberius Gracchus try to stop the decay of the yeoman class in Italy?

(*c.*) What special tasks were entrusted to Pompey in the Mediterranean and in the East?

20 10. Give in a line or two the historical connection of *ten* of the following: Areopagus, Cannae, Epaminondas, Granicus, helot, Herodotus, the Hyksos, Joshua, Knossos, Mardonius, Miltiades, Nebuchadnezzar, ostracism, Plataea, Plato, plebeian, Phidias, Solon, Sulla, Zoroaster.

LATIN. (Time, 2 hours.)

12 1. Decline together: (*a*) in the singular *altera pars, flumen Tamesis,* and *lacus altior;* (*b*) in the plural *mare altum, dies felix,* and *consilium utile.*

10 2. Give the genitive and ablative singular and genitive plural of *agger, onus, passus, collis, dux, dies, cornu, mulier, pax, corpus.*

10 3. (*a.*) Give the general rule for the formation of the comparative and superlative of adjectives. Illustrate by examples.

(*b.*) Name six adjectives in *-ilis* which form the superlative by the change of *-ilis* into *-illimus.*

(*c.*) What is the positive of *optimus, pejor, plus, inferior, summus.*

13 4. (*a.*) Give principal parts of *cogo, trado, solvo, facio, pello, moveo, gero, respondeo, pono.*

(*b.*) Write the pluperfect indicative active singular of *mitto* and the future perfect indicative passive plural of *rego.*

5 5. Express in Latin: thirty ships; four cohorts; forty-three towns; two legions, the sixth and the seventh.

Value.

30 6. Translate into Latin:—

(1.) They had sent the noblest of the Britons to Caesar.

(2.) The nights are unlike the days.

(3.) We shall not fight without reason.

(4.) The leading men of all the states assembled at midnight.

(5.) I have said nothing about citizenship.

20 7. Translate into English:—

(1.) Finitimis civitatibus naves longas imperabit.

(2.) Respublica navi similis esse dicitur.

(3.) Superiore anno majus oppidum minore cum periculo expugnaverunt.

(4.) Dies circiter quindecim iter feceramus.

(5.) Romanis unis concedimus.

Grade X.

AGRICULTURE. (Time, 2 hours.)

[*Candidates will answer question* one *and* any five *of the remainder.*]

Value.

20 1. How does a plant start and continue life?

16 2. How may different kinds of weeds be checked and controlled most effectively?

16 3. What is soil, and how, presumably, was it formed?

16 4. What are the contents of stable manure, and how does its application benefit the land?

16 5. How would you proceed in order to test and determine the percentage of germination in seed intended for planting?

16 6. Discuss the most important points in connection with the rearing of any young animal.

16 7. Present the life-history of one useful and one harmful insect common to your own locality.

16 8. Compare different methods of hatching and rearing chickens.

ALGEBRA. (Time, 2 hours.)

10 1. (*a.*) If a pyramid of height h stands on a square base whose side is s, its volume V is given by the formula $V = \frac{1}{3}hs^2$. Reverse this formula :—

(1.) To express h in terms of s and V.

(2.) To express s in terms of h and V.

(*b.*) If it takes t hours to travel the distance d at the rate of r miles per hour, obtain the formula which will show the relation of these three quantities.

20 2. Resolve into two or more factors :—

(*a.*) $x^4 + x^3 - x^2 - x$.

(*b.*) $x^4 - 4x^2 + 4$.

(*c.*) $x^4 - 5x^2 + 4$.

(*d.*) $x^4 + 9x^2 + 81$.

(*e.*) $x^4 + 4$.

(*f.*) $a^2 - b^2 - c^2 + 2bc$.

10 3. $A = (x - y)^5(a - b)^3$.

$B = (a - b)^5(p - q)^3$.

$C = (p - q)^5(x - y)^3$.

Write down in factor form :—

(1.) The highest common factor of A and B.

(2.) The least common multiple of A and C.

(3.) The least common multiple of A, B, and C.

20 4. Simplify :—

(*a.*) $\dfrac{m^2 + mn + n^2}{m^3 - n^3} - \dfrac{m^2 - mn + n^2}{m^3 + n^3}$.

(*b.*) $\dfrac{\frac{x}{y}}{z} - \dfrac{x}{\frac{y}{z}}$.

(*c.*) $\dfrac{2x^3 + 5x^2 - 22x + 15}{5x^3 + 18x^2 - 33x + 10}$.

Value.

25 5. (*a.*) Solve: $x-\frac{x-13}{9}=\frac{6x+1}{5}+\frac{2}{3}\left(6-\frac{3x}{2}\right)$.

Show that $x=3$ does not satisfy this equation.

(*b.*) If the sum of the fractions $\frac{1}{2x-1}$ and $\frac{x}{x+2}$ be unity, find the value of each fraction separately.

(*c.*) Solve:—

$$x+\frac{y}{2}-\frac{z}{3}=6.$$

$$y+\frac{z}{5}-\frac{x}{2}=10.$$

$$z+\frac{x}{3}-\frac{y}{5}=15.$$

15 6. Gold loses $\frac{1}{19}$ of its weight and silver $\frac{1}{10}$ of its weight when weighed in water. Find the amount of each metal in a mass of gold and silver which weighs 98 ounces in air and 90 ounces in water.

ARITHMETIC. (Time, 2 hours.)

[*All work must be shown.*]

1. Copy and fill in the blanks:—

1 (*a.*) There are ..... acres in a half-section.

1 (*b.*) There are ..... pens in 5 gross.

2 (*c.*) There are ..... feet in a chain.

2 (*d.*) There are ..... decimetres in .5 kilometre.

2 (*e.*) There are ..... inches in .5 metre.

2 (*f.*) There are ..... miles (nearly) in 8 kilometres.

2 (*g.*) A cubic foot of water weighs ..... pounds.

2 (*h.*) A gallon of water weighs ..... pounds.

2 (*i.*) On a Fahrenheit thermometer the freezing-point of water is marked ....°.

2 (*j.*) On a Fahrenheit thermometer the boiling-point of water is marked ....°.

2 (*k.*) A vessel travels 20 knots per hour. This equals ..... miles per hour.

8 2. A class-room is 40 feet long and 25 feet wide. There are four windows each 6 feet by 5 feet. The ratio of the window area to the floor area is as 3 is to .....

8 3. Find the gain on goods bought at $150.75 less 20% cash discount, and sold to gain $11\frac{1}{9}$%.

8 4. How many bags, each holding 1 hectolitre, can be filled from a bin 1.5 m. high, 2.4 m. wide, and 5 m. long?

8 5. A silo in the shape of a cylinder is 14 feet in diameter and 35 feet high. What is its volume?

10 6. A house that rents for $40 a month is for sale. How much should I offer for it to realize 5% interest on my investment, if the taxes are $55 a year, and if I allow $40 for repairs and $50 for depreciation?

10 7. A real-estate dealer bought a house and lot for $4,650. The house was remodelled at a cost of $600 and $250 was paid for street improvements. He then exchanged

Value.

the property for 40 acres of land which he immediately sold at $165 per acre. What was his gain per cent. on the total investment?

14 8. The assessed value of property in a certain municipality is $50,000,000. The taxes to be raised amount to $2,150,000. What is the tax rate (mills on the dollar)? John Jones pays $30.96 in taxes after being allowed 10% discount for prompt payment. What is the assessed value of Jones' property?

14 9. On June 16th, 1926, you bought a piano from the Mason & Risch Piano Co. for $600. You paid $400 in cash and gave your note for six months for the balance with interest at 6% per year. Write the note. Make it negotiable. On October 7th the Mason & Risch Co. discounted the note at the bank at 7%. How much was received for the note on that date?

BOTANY. (Time, 2 hours.)

[*Questions are of equal value. Answer* five *only. Illustrate answers by sketches or diagrams.*]

1. Give the characteristics which distinguish: (*a*) a *root* from a *rhizome;* (*b*) a *bulb* from a *corm;* (*c*) a *runner* from a *sucker*. In your answer, describe each in detail and give examples.

2. Describe, draw, and label the parts of: (*a*) a pea or bean seed, and (*b*) a grain of wheat or corn, as seen in section. State what changes occur at germination, and how the seedlings differ.

3. Name two plants you have studied, one of the Ranunculaceæ and one of the Rosaceæ. Describe the stem, leaves, flower, and fruit of each, noting resemblances and differences, and emphasizing family characteristics.

4. Describe experiments to prove that plants are sensitive to gravitation and light. What regions of the plant show the greatest response?

5. Name the different kinds of indehiscent fruits and classify them to show their distinctive characteristics; note any modifications for seed dispersal. Give examples.

6. Name twenty plants, common in your district. Indicate which are: (*a*) native plants; (*b*) introduced weeds of waste ground or cultivated land; (*c*) medicinal plants; (*d*) poisonous plants, *and* what kinds of live stock are most affected by them.

CHEMISTRY. (Time, 2 hours.)

Value.

14 1. (*a.*) Describe a suitable *laboratory* method for the preparation of a sufficient quantity of *oxygen* for experimental purposes. Illustrate with a diagram, and write the equation.

6 (*b.*) Enumerate the physical and chemical *properties* of oxygen.

20 2. Write an equation to represent the reaction in each of the following:—

(*a.*) Magnesium metal is placed in dilute hydrochloric acid.

(*b.*) Sulphur is heated in the air.

(*c.*) Sodium chloride, mixed with concentrated sulphuric acid, is heated gently.

(*d.*) Water slightly acidulated is decomposed by an electric current.

(*e.*) Hydrogen is led over strongly heated copper oxide in a combustion tube.

Value.

10 3. (*a.*) What is meant by a *law* in chemistry?

(*b.*) Name two important chemical laws, and clearly explain what is meant by *one* of them.

10 4. Find the *weight* of *carbon dioxide* that would be formed by treating 212 grams of sodium carbonate, with an excess of dilute sulphuric acid.

Calculate the *volume* of the gas formed at 27° C., and 750mm. pressure. (Na=23; C=12; O=16. A gram-molecular weight of any gas at standard temperature and pressure occupies a volume of 22.4 litres.)

10 5. (*a.*) Outline a *laboratory* method for the preparation of *carbon monoxide.*

(*b.*) How may *carbon monoxide* be distinguished from *carbon dioxide?*

10 6. Write concise accounts of:—

(*a.*) *Kinetic molecular theory* of gases.

(*b.*) Effect of *temperature* upon *rate of chemical change.*

20 7. Describe what *reaction* takes place in each of the following, name the *products*, and write the equation:—

(*a.*) A current of steam is passed over red-hot iron in an iron or porcelain tube.

(*b.*) Solutions of ammonium chloride and silver nitrate are brought together.

(*c.*) Sodium hydroxide is treated with hydrochloric acid.

(*d.*) Ammonium nitrite is heated.

ENGLISH COMPOSITION. (Time, 2 hours.)

5 1. What is wrong in each of the following sentences? Rewrite each correctly.

(*a.*) Othello, seizing a pillow full of rage and fury, covered Desdemona's face

(*b.*) He saw the house in which Queen Elizabeth had lived during his holidays.

(*c.*) He left his new hat on the train for which he had paid ten dollars.

(*d.*) I met a man who had discovered a gold mine in Vancouver the other day.

(*e.*) The speaker insisted that the Government would not surrender with conviction.

9 2. (*a.*) Write to a bookseller (or publishing house) mentioning a list of six books you are anxious to secure for your own use and asking the price of each.

3 (*b.*) Designate by their technical names the six necessary parts of your letter.

8 3. What is meant by the following:—

(*a.*) The topic sentence.

(*b.*) Coherence in the paragraph.

(*c.*) A periodic sentence.

(*d.*) Ellipsis.

75 4. Write a composition of about two hundred words on *one* of the following:—

(1.) Court-life in the Middle Ages. (*Quentin Durward.*)

(2.) The "play within the play." (*A Midsummer-Night's Dream.*)

(3.) The Downfall of the Conspirators. (*Julius Caesar.*)

(4.) An Animal Friend of Mine.

ENGLISH LITERATURE. (Time, 2 hours.)

[*Candidates will answer Section A, Part I.* or *Part II.; and Section B; and any* one *section from Sections C, D, and E.*]

SECTION A.

Part I. A Selection of English Poetry, Book I., Part I.

Value.

15 1. Give in your own words the story of *one* of the following:—

(*a.*) "Echetlos."

(*b.*) "The Forsaken Merman."

(*c.*) "The Ballad of East and West."

15 2. Give briefly what you consider to be the central theme of each of the following poems:—

(*a.*) "Ozymandias."

(*b.*) "The Cane-bottomed Chair."

(*c.*) "St. Agnes' Eve."

10 3. Write a paragraph on the character of the Duke in "My Last Duchess."

Part II. A Selection of English Poetry, Book I., Part II.

15 1. Give in your own words the story of any *one* of the following poems:—

(*a.*) "The Eve of St. Agnes."

(*b.*) "Hervé Riel."

(*c.*) "Juggling Jerry."

15 2. Give briefly what you consider to be the central theme of each of the following poems:—

(*a.*) "The Nature Lover."

(*b.*) "To Daffodils."

(*c.*) "The New Jerusalem."

10 3. Write a paragraph on any *one* of the following topics:—

(*a.*) The Skill of Keats in the Use of Apt Phrases of Great Poetic Beauty.

(*b.*) Why Shelley Considered that the Joy of the Skylark was beyond Human Attainment.

(*c.*) The Piety of the Village Preacher.

SECTION B. ENGLISH PROSE SELECTIONS, PART II.

[NOTE.—*Answer question 1 and* either *2* or *3.*]

15 1. Discuss briefly the subject-matter of any *one* of the following essays:—

(*a.*) "Of Studies."

(*b.*) "Country Etiquette."

(*c.*) "Party Patches."

(*d.*) "A Political Upholsterer."

(*e.*) "History of the Man in Black."

(*f.*) "The Two Races of Men."

(*g.*) "On Being Found Out."

(*h.*) "Intellectual Snobbery."

15 2. Write a paragraph on *one* of the following topics:—

(*a.*) The Comfort Given by Jesus to His Disciples on the Eve of the Crucifixion.

(*b.*) The Character of Abraham Lincoln as He is Revealed in His Letter to Horace Greeley and the Gettysburg Address.

Value.

(*c.*) Wherein Laurier Considers the Canadian Constitution Superior to That of America.

(*d.*) Coffee-Houses ("State of England, 1685").

(*e.*) Fuller's Opinion of the Essential Qualities of a Good Schoolmaster.

Or

Draw up a carefully planned outline for an essay based on the subject-matter of any *one* of the following short stories:—

(*a.*) "The Three Strangers."

(*b.*) "The Prince Consort."

(*c.*) "The Fall of the House of Usher."

(*d.*) "The Enemy."

SECTION C. JULIUS CAESAR.

15 1. Interpret the following passages, relating each to its context:—

(*a.*) There is a tide in the affairs of men,
Which taken at the flood leads on to fortune;
Omitted, all the voyage of their life
Is bound in shallows and in miseries.

(*b.*) I know not how,
But I do find it cowardly and vile,
For fear of what might fall, so to prevent
The time of life.

(*c.*) But yet have I a mind
That fears him much; and my misgiving still
Falls shrewdly to the purpose.

15 2. Write a paragraph on the Gentler Qualities in the Character of Brutus.

SECTION D. A MIDSUMMER NIGHT'S DREAM.

15 1. Interpret the following passages, relating each to its context:—

(*a.*) Love, therefore, and tongue-tied simplicity
In least speak most, to my capacity.

(*b.*) The poet's eye, in a fine frenzy rolling,
Doth glance from heaven to earth, from earth to heaven;
And, as imagination bodies forth
The forms of things unknown, the poet's pen
Turns them to shapes, and gives to airy nothing
A local habitation and a name.

(*c.*) That very time I saw, but thou couldst not,
Flying between the cold moon and the earth
Cupid all arm'd: a certain aim he took
At a fair vestal throned by the west.

15 2. Write a paragraph on "Puck, the Spirit of Mischief."

SECTION E. QUENTIN DURWARD.

10 1. Write a paragraph on *one* of the following:—

(*a.*) The Vanity of Le Balafré.

(*b.*) The Superstition of Louis XI.

20 2. Give a brief account of *one* of the following:—

(*a.*) The Murder of the Bishop of Liège, Louis of Bourbon.

(*b.*) The Enrolment of Quentin Durward as an Archer of the Scottish Body-guard.

(*c.*) The Rescue of Countess Isabelle de Croye from the Castle of Schonwaldt.

FRENCH. (Time, 2 hours.)

Value.

7 1. (Complétez les phrases suivantes.) Complete the following sentences:—

(1.) Demain nous (jouer) au football.

(2.) Voulez-vous me donner les fraises que vous avez (trouver)?

(3.) Marie n'est pas (tomber) dans l'eau.

(4.) Vous avez (acheter) de belles fleurs.

(5.) Quand j'étais petit, je (se coucher) de bonne heure.

(6.) Ils se sont (lever) à six heures.

(7.) Je (aller) en France quand je serai riche.

9 2. (Mettez les verbes à l'imparfait; au futur, au passé défini.) Put the verbs in the imperfect, future, and past indefinite:—

(1.) Elle vient tous les jours.

(2.) Il y a douze voitures.

(3.) Elle est paresseuse.

(4.) Nous prenons l'omnibus.

(5.) Je plonge après lui.

(6.) L'automobile avance lentement.

20 3. (Ecrivez dix phrases en employant ces mots.) Write ten sentences, using each of the following words: d'ordinaire; ne — que; tout le monde; un coup d'oeil; avant de; mal; comme; mieux; rien; partout.

10 4. Répondez en français:—

(1.) A quoi sert un couteau?

(2.) Qu'est-ce qu'une cuisinière?

(3.) Quels sont les trois repas?

(4.) Quels sont les meubles de la salle à manger?

(5.) Que faites-vous à l'école?

10 5. Fill in spaces with suitable pronouns:—

(1.) — est un beau jardin.

(2.) Il y a des gens — mangent quatre fois par jour.

(3.) Voilà l'automobile — je vous parlais.

(4.) Où est le journal — j'ai acheté.

(5.) De — avez-vous parlé?

(6.) Voici deux tableaux, — est de Londres — est de Paris.

(7.) M. Dubois est chez —.

(8.) — de ces frères est Georges?

(9.) Je n'ai — à dire.

(10.) — tombe du ciel en hiver?

14 6. Ecrivez en français:—

(1.) I am learning to speak French.

(2.) Our class-room is 30 feet long by 21 wide.

(3.) There are more than 250 pupils in our school.

(4.) It is raining in torrents.

(5.) This sailboat belongs to me.

(6.) I use a pencil for writing.

(7.) The pupils' entrance is on the ground floor.

Value.

30 7. Write a composition in French (about one hundred words) on *one* of the following subjects:—

(*a.*) Les Vacances.

(*b.*) La Maison.

(*c.*) Mon école.

GEOMETRY. (Time, 2½ hours.)

11 1. Construct a parallelogram PQRS from the following data:—

PQ =1¾ inches.
PS =2¼ inches.
angle QPS=angle BAC of a triangle whose sides are AB=2 in., BC=2½ in., CA=2¾ in.

11 2. From the given straight line AB cut off a part equal to ⅖ of AB.

A————————————————B

11 3. Give the geometrical illustration of the identity $(a+b)^2 = a^2 + b^2 + 2ab$.

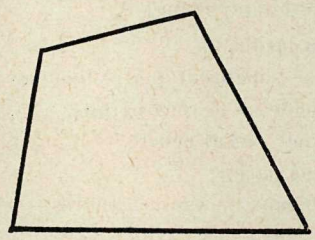
11 4. O is any point on the diagonal BD of a parallelogram ABCD. EOF, GOH are parallel to AB, BC, respectively. Prove that parallelogram AO=parallelogram CO.

14 5. If two sides of a triangle are unequal, the greater side has the greater angle opposite to it.

14 6. If a triangle is such that the square on one side is equal to the sum of the squares on the other two sides, then the angle contained by these two sides is a right angle.

14 7. The bisectors of the angles B, C of a triangle ABC intersect at P. Prove that $\angle BPC = 90° + \frac{1}{2} \angle A$.

14 8. Construct a triangle equal in area to the given quadrilateral:—



Give proof of your construction.

HISTORY. (Time, 2 hours.)

[*Answer any* five *questions.*]

20 1. (*a.*) Show how Caesar's monarchy arose from the union, in one person, of the powers of separate Republican officers.

(*b.*) In what main respects did the monarchy of Diocletian differ from that of the early emperors?

(*c.*) Show that you understand the meaning of the terms, "Absolutism," "Centralization," applied to government.

Value.

20 2. Give brief accounts of the reigns of *any* four of the following: Tiberius, Nero, Domitian, Marcus Aurelius, Aurelian, Constantine.

20 3. (*a.*) Account for the persecution of Christians under the Roman Empire.
(*b.*) Write on the classes of society under the later Empire.

20 4. (*a.*) Illustrate the character of Roman law under the Empire.
(*b.*) What were the principal features of Teutonic law?
(*c.*) Mention two important contributions to Western European civilization made by Rome herself.

20 5. Give a brief description of a feudal manor under the following heads: (*a*) the manor itself; (*b*) the people who lived on it; (*c*) their homes; (*d*) the method of cultivating the land.

20 6. (*a.*) Write on the beginnings of Parliament in England under the following heads: the Witan, the Great Council, Simon de Montfort.
(*b.*) What important result followed from the division of Parliament into two houses?
(*c.*) Mention three great principles established by Magna Charta.
(*d.*) Give three instances of the growth of the power of Parliament during the Hundred Years' War.

20 7. (*a.*) Outline the history of the Reformation in Germany.
(*b.*) Give a brief account of the "Invincible Armada."

20 8. Write explanatory notes on each of the following: Eliot's resolutions, John Milton, Thomas Wentworth, Colbert, Bill of Rights.

LATIN. (Time, 2 hours.)

16 1. Write the genitive plural of:—
illa civitas .....
melior civis .....
hic dies .....
the dative singular of:—
neuter homo .....
ea res .....
the ablative singular of:—
aeger miles .....
mare latum .....
flumen breve .....

6 2. Write the genitive singular (with the adjective in the *comparative* degree) of:—
respublica libera .....
the accusative plural (with the adjective in the *superlative* degree) of:—
mare bonum .....
the ablative singular (with the adjective in the *superlative* degree) of:—
cornu gracile .....

12 3. Write the second singular present indicative of:—
proficiscor .....
nolo .....
abeo .....
differo (active and passive) .....

Value.

the second singular perfect indicative active of:—

rego .....

mitto .....

iubeo .....

the perfect infinitive active of:—

cognosco .....

the singular present imperative passive of:—

rego .....

the singular present imperative of:—

proficiscor .....

nolo .....

13 4. Write in Latin:—

(*a.*) You (sing.) were being heard.

.....

(*b.*) We shall begin to retreat.

.....

(*c.*) You have said.

.....

(*d.*) To have seen.

.....

(*e.*) Caesar put me in command of the camp.

.....

(*f.*) This circumstance was of great service to our men.

.....

(*g.*) At the beginning of summer.

.....

(*h.*) I shall be consul.

.....

(*i.*) I was informed.

.....

(*j.*) I do not know whither we are going.

.....

10 5. Translate in space provided on opposite page:—

(*a.*) Quibus rebus Caesar vehementer *commotus*, maturare constituit, ne nova manus Sueborum cum veteribus copiis Ariovisti *sese conjungeret*. Itaque *re* frumentaria quam celerrime comparata, magnis itineribus ad Ariovistum contendit. Cum tridui viam processisset, nuntiatum est ei Ariovistum cum suis omnibus copiis ad occupandum Vesontionem, quod est oppidum maximum Sequanorum, *contendere*. In eo oppido omnium rerum quae ad bellum *usui* erant summa erat facultas, idque natura loci egregie muniebatur. Huc Caesar contendit, occupatoque oppido ibi praesidium collocat.

.....

.....

6 (*b.*) Account for the case of:—

commotus .....

sese .....

re .....

usui .....

the mood of *conjungeret* .....

the mood of *contendere* .....

Value.

6. Translate into Latin:—

5 (*a.*) Good citizens will always take thought for the whole state.

.....

5 (*b.*) He asked why we did not wish to obey the laws.

.....

6 (*c.*) The Helvetii sent envoys to say that they wished to march through the province.

.....

5 (*d.*) He does not know what he wishes to be done.

.....

5 (*e.*) They persuaded us not to spare the captives.

.....

6 (*f.*) We were informed that the soldiers were not able to use their swords.

.....

5 (*g.*) At daybreak they left the camp and marched all day through a broad plain.

.....

PHYSICS. (Time, 2 hours.)

[*Questions are of equal value. Answer* five *only.*]

1. (*a.*) Describe and explain the action of the water when a narrow-necked bottle is filled with water and then held mouth downward.

   (*b.*) By means of drawings illustrate the following: *umbra, penumbra, voltaic cell.*

   (*c.*) Describe Galileo's thermometer. In what way was it imperfect?

2. (*a.*) State the law which is used in determining the density of a solid which will float in water.

   (*b.*) A body whose mass is 6 grams has a sinker attached to it and the two together weigh 16 grams in water. The sinker alone weighs 24 grams in water. What is the density of the body?

3. (*a.*) Explain the action of the *siphon.* Illustrate by a drawing. What causes the flow? When will the flow stop?

   (*b.*) Under perfect conditions how high can sulphuric acid be raised in a siphon when the barometer stands at 29 inches, taking the specific gravities of sulphuric acid and mercury as 1.8 and 13.6 respectively?

4 (*a.*) Explain the principle which is applied in the *hydraulic press.* In constructing this press how can the greatest force be developed?

   (*b.*) How does light travel and how is it transmitted from the sun?

   (*c.*) In looking in a mirror we do not "see ourselves as others see us." Explain.

5. (*a.*) What convenient *mechanical power* would you use to get a heavy trunk from the ground into a truck? Explain the advantage.

   (*b.*) To draw a nail from a piece of wood requires a pull of 150 pounds. A claw-hammer is used and the hand, 9 inches from the fulcrum, must exert a force of 20⅚ pounds. How far is the nail from the fulcrum?

6. (*a.*) What experiments would you perform to illustrate *induced magnetism* and to show that there are *two kinds* of electricity?

   (*b.*) Explain clearly the cause of *lightning.* Describe a good lightning-conductor.

   (*c.*) Describe the *Davy safety-lamp.*

7. (*a.*) The determination of *specific heat* by the method of mixture depends on what principle?

   (*b.*) Find the resulting temperature when 20 grams of iron at 100° C. are immersed in 80 grams of water at 10° C., contained in a copper vessel whose mass is 20 grams. (Specific heat of iron, 0.113; of copper, 0.094.)

Grade XI., Junior Matriculation and Normal Entrance.

AGRICULTURE. (Time, 2 hours.)

[*Candidates will answer question* one *and* any six *of the remainder.*]

Value.

10 1. Why do up-to-date farmers and gardeners rotate their crops?

15 2. Describe in detail the soil preparation, the planting, and the handling of a field or garden crop of your own choice.

15 3. (*a.*) How can we determine whether or not a soil needs lime?
(*b.*) Which of our common farm crops show a distinct preference for lime?

15 4. What results may be expected from the application of stable manure: (*a*) on a sandy soil; (*b*) on a clay soil?

15 5. Enumerate various important points in connection with the production of first-class milk.

15 6. Describe the breeds of cows, horses, sheep, and hogs which are most common among the farmers in your own district.

15 7. State the reasons why alfalfa and clover hay are more valuable than timothy hay in the feeding of dairy cattle.

15 8. Prescribe and discuss the proper treatment for aphis and for tent-caterpillars.

15 9. What are the essential differences between light breeds, utility and heavy breeds in poultry? Give examples of each kind.

ALGEBRA. (Time, 2½ hours.)

12 1. Factor:—
(*a.*) $15x + 8a - 2(3 + 10ax)$.
(*b.*) $r^3 - 64s^6$.
(*c.*) $m^{2x} - 4m^x - 21$.
(*d.*) $25x^4 + 4y^4 - 69x^2y^2$.

12 2. Simplify (no marks will be given unless the answers are correct):—
(*a.*) $\left(1 + \frac{5a-4}{a^2-3a-4}\right)\left(1 - \frac{3a+8}{a^2+a}\right) \div \left(1 + \frac{5a+8}{a^2+a}\right)$.
(*b.*) $2 - \cfrac{3}{3 - \cfrac{4}{2 + \cfrac{5}{7}}}$.

14 3. (*a.*) Solve: $.06(1.3x - .5) - .15(.3x + 2.4) + .522 = 0$.
(*b.*) Solve: $\frac{2x+3}{4} - \frac{x-1}{6x-8} = \frac{x+2}{2}$.
(*c.*) The pressure carrying a draught up a chimney is found by the formula

$$P = H\left(\frac{7.6}{460 + T} - \frac{7.9}{460 + t}\right),$$

where P = pressure, H = equals height of chimney in feet, T = temperature of outside air, t = temperature of inside air.
(1.) Does P increase or decrease when t increases?
(2.) Given H = 200, T = 15, t = 1120, find P.

Value.

14 4. (*a.*) The tickets for an entertainment cost 35 cents for adults and 15 cents for children. If a total of $69 was obtained from the sale of 300 tickets, how many adults' tickets were sold and how many children's tickets?

(*b.*) Solve: $\frac{1}{y}-\frac{2}{z}+4=0,\ \frac{1}{z}-\frac{1}{x}+1=0,\ \frac{2}{x}+\frac{3}{y}=14.$

14 5. (*a.*) The numerator of a fraction exceeds its denominator by 3. If you add 1 to the denominator and subtract 5 from the numerator, the value of the fraction becomes $\frac{1}{2}$. What is the fraction?

(*b.*) The sum of the volumes of two cubes is 189 and an edge of one cube plus an edge of the other cube is 9. Find the lengths of the edges of the cubes.

12 6. (*a.*) Can you *prove* $a^0=1$? If so, give proof; if not, explain how a^0 is taken to mean 1.

(*b.*) Simplify: $(2^{-1}\times 3^{\frac{1}{2}}\times 6^{\frac{3}{2}})+(9^{-\frac{1}{3}}\times 12^{\frac{2}{3}}\times 2^{\frac{1}{6}})+2^{-\frac{3}{2}}.$

12 7. (*a.*) The ratio of the area of a rectangle to the area of the square described on its diagonal is 6:13. Find the ratio of the sides of the rectangle.

(*b.*) Find, in simplest form, the mean proportional between

$$\sqrt{5}+\sqrt{2} \text{ and } \frac{12}{\sqrt{5}-\sqrt{2}}.$$

10 8. Draw *neatly* the graph of $x^2-2x-5=y$ and *from the graph* find the approximate roots of $x^2-2x-5=0$.

BOTANY. (Time, 2 hours.)

[*Questions are of equal value. Answer* five *only. Illustrate answers by sketches or diagrams.*]

1. Distinguish between *pollination* and *fertilization.* By what agencies are the following pollinated: grasses, willow, columbine, sunflower? Give detailed reasons for your conclusions.

2. Draw and carefully label the tissues seen in the transverse section of a one-year-old stem of a woody dicotyledon. State the composition and function of each tissue. How do the stems of Palm trees increase in thickness?

3. How may Thallophytes be distinguished from Bryophytes? Compare an alga with a fungus in regard to habitat, nutrition, and reproduction.

4. Name the *different kinds* of fruit found in Rosaceæ and give examples. Describe their structure, texture, and modifications in relation to seed dispersal.

5. With the aid of floral formulæ and diagrams, describe the structure of a flower belonging to: (*a*) Umbelliferæ; (*b*) Scrophulariaceæ; (*c*) Compositæ. Name plants of economic importance (useful or harmful) in each of these families.

6. (*a.*) Describe some particular *habitat* you have visited. (Bog, woodland, marsh, pond, or sand dune, etc.)

(*b.*) Name the principal members composing the characteristic plant association of that habitat.

(*c.*) Indicate what modifications or adaptations these plants show in relation to their environment.

7. What chemical elements are necessary for the healthy growth of a flowering plant? State the source of each and explain fully by what process and tissue it enters the plant.

CHEMISTRY. (Time, 2½ hours.)

[*Candidates will answer* all *of Section A and* any three *questions from Section B. Atomic weights are given at the end of the paper.*]

SECTION A.

Value.

12 1. (*a.*) State as concisely as you can what you understand by Gay-Lussac's law of volumes.

(*b.*) Describe an experiment to illustrate this law, using hydrogen and oxygen as the constituent gases.

14 2. If 1.301 grams of acetylene are burned and the resulting gas measured over mercury, what will be the volume at 24° C.? The barometer reading is 744 mm.

14 3. Explain the terms neutralization, supersaturated, valence, solubility, and water of crystallization.

12 4. Write in some detail regarding the preparation, properties, and uses of hydrochloric acid.

12 5. What volume of hydrogen chloride, measured at 21° C. and 740 mm. pressure, can be prepared from 2.545 g. of chlorine? What weight of calcium hydroxide will this hydrogen chloride neutralize?

SECTION B.

12 6. Describe the preparation of carbon tetrachloride and chloroform. What are the properties and uses of the former?

12 7. Give the common names of a few of the carbohydrates. Why are these substances given the name carbohydrates? Explain the term "inversion" as applied to cane sugar.

12 8. Write briefly regarding the various forms of amorphous carbon with which you are acquainted.

12 9. Which ores of iron are important industrially? What chemical reactions take place when one of these ores is heated in the blast-furnace?

12 10. (*a.*) Write chemical equations that illustrate the processes of hydrolysis and saponification.

(*b.*) Explain the action of soap as a cleansing agent.

12 11. (*a.*) Write the chemical equations involved in the Le Blanc method of preparing sodium carbonate.

(*b.*) Explain the use of sodium bicarbonate in the making of bread.

12 12. State properties of hydrogen sulphide and write the chemical equations illustrating its action upon sulphuric acid and chlorine.

Atomic weights: C=12.00, H=1.008, O=16.00, Cl=35.46, Ca=40.1.

ENGLISH COMPOSITION. (Time, 2 hours.)

[*Candidates are reminded that they are expected to spell and punctuate correctly. They are therefore urged to leave some few minutes free for a revision of their papers. They are also reminded that they cannot expect marks for paragraphs and essays that are not well organized and well worked out. They are therefore urged to plan their compositions before they begin to write. The plan of the essay in question 2 should be written in the examination book as part of the answer.*]

Value.

24 1. Point out the faults in the following sentences, and rewrite in correct form:—

(*a.*) John Smith's back was strained by lifting the day before yesterday.

(*b.*) Thales was a mathematician and a philosopher in his later years, a statesman in middle life, and a merchant in his younger years.

(*c.*) Whether a man be rich or poor, you should cultivate good habits and use good language.

(*d.*) People waste a great deal of time and money on automobiles, and riding in automobiles tends to make them lazy.

(*e.*) By watching your steps you will avoid the reefs and sandbanks.

(*f.*) Being a wax doll, her cares were immediately forgotten.

76 2. Write a composition of about 300 words on *one* of the following subjects:—

(*a.*) Stevenson as Revealed in *An Inland Voyage.*

(*b.*) The Pathos of Amy Robsart's Story.

(*c.*) The Difficulties Lincoln Had to Contend With.

(*d.*) Jacques the Cynic.

(*e.*) The Testing of Gareth.

(*f.*) The Outstanding Features of My High School Course.

ENGLISH LITERATURE. (Time, 2½ hours.)

[*Candidates will write on Parts A and D, and on* either *Part B* or *Part C.*]

PART A.

24 1. (*a.*) Quote at least 12 lines of a "lyric proper," or of various lyrical passages, that you consider fine. Show that your quotation (or quotations) has some of the qualities that a good lyric should possess. How would you distinguish between "lyrical" poetry and "idyllic" poetry?

(*b.*) Name half a dozen great English lyrists and mention a song by each one of them. Write about a page on the work of the lyrist whom you know best—its subject-matter, its style, and other characteristics.

16 2. Write brief notes (of not more than a page at most) on any *two* of the following topics:—

(*a.*) Reversal of fortune in "The Patriot" and "The Rider at the Gate."

(*b.*) The heroism of Iphigeneia.

(*c.*) Tithonus' view of immortality.

(*d.*) What Karshish learned from Lazarus.

PART B.

16 1. What are the two chief stories which Shakespeare has woven together in *The Merchant of Venice?* Show the various ways in which he links the stories to each other.

10 2. What circumstances compel us to sympathize with Shylock?

Value.

14 3. Quote from the play a passage of about 12 consecutive lines. Show (*a*) how this passage is related to its context and (*b*) how it reveals the character of the speaker.

PART C.

16 1. Do you think that Macbeth is fully "responsible" for the murder of Duncan? Discuss this question as fully as you can.

10 2. Briefly contrast Macbeth with Banquo.

14 3. Quote from the play a passage of about 12 consecutive lines. Show (*a*) how this passage is related to its context and (*b*) how it reveals the character of the speaker.

PART D.

A poem for "sight-reading":—

Shade.

The kindliest thing God ever made,
His hand of very healing laid
Upon a fevered world, is shade.
His glorious company of trees
Throw out their mantles, and on these
The dust-stained wanderer finds ease.
Green temples, closed against the beat
Of noontime's blinding glare and heat,
Open to any pilgrim's feet.
The white road blisters in the sun;
Now, half the weary journey done,
Enter and rest, O weary One!
And feel the dew of dawn still wet
Beneath thy feet, and so forget
The burning highway's ache and fret.
This is God's hospitality,
And whoso rests beneath a tree
Hath cause to thank Him gratefully.

5 (*a.*) What is the feeling or emotion about shade which the poet is trying to express?

5 (*b.*) Make a list of the words and expressions that suggest this feeling, and make a similar list of expressions that contrast with it.

5 (*c.*) Comment on the fitness of some of the figures or speech: "hand of healing," "mantles," "temples," "God's hospitality."

5 (*d.*) Briefly relate an experience of your own that illustrates, or throws light upon, the above poem.

FRENCH GRAMMAR. (Time, 2 hours.)

15 1. Write, in the spaces provided, the words omitted or the correct forms of the words in italics. It does not necessarily follow that a word *must* be changed because it is in italics.

Ce..... pensée nous ramène au sujet de ce discours. Ma *cher* .....maman me conduisait.....la maison le long des rues *plein*.....de couleurs (fem.) *vifs*..... Je vois encore la boutique de Corcelet *petit*.....et *bas* ..... On y voyait une peinture déjà *vieux* ..... à cette époque. Elle me semblait si *beau* .....que je ne m'estimais pas digne de la regarder sans mes habits du dimanche. A la caisse, une dame *âgé* ..... mais encore *joli* .....

Value.

ouvrait un tiroir pour prendre des pièces d'or et d'argent. Je ne me faisais pas une idée *exact* ..... de *ce* ..... opérations (fem.) qui me paraissaient *fort compliqué*.....

10 2. Put the following sentences into French. [*Be very careful of the construction.*]

(*a.*) I will try to come to-morrow if you will ask John for his automobile.

.....

(*b.*) I was thinking of you all last week but it is easy to see that you were not expecting me.

.....

(*c.*) Physical exercises use all the principal muscles.

.....

30 3. Put into French (below) the following passage. [*Work slowly and carefully. Read over your finished work.*]

I am very fond of my school where I have been a pupil for three years. If we had not had a good teacher what would have become of us? There was so much to do; there were so many distractions (*distractions*, fem.) among which we had to choose that the year seemed very short to us. No one thought that the holidays would come so quickly. Without working hard we could not hope to do much in such a little time. Fortunately most of us were helped by our teacher to succeed in passing the examination. I think that I shall owe my success to him and I shall tell him so.

Answer to question 3:—

.....

.....

20 4. Make short *sentences* in French to show the use of:—

(*a.*) cette .....

(*b.*) celle .....

(*c.*) moi .....

(*d.*) me .....

(*e.*) assez de .....

(*f.*) assez pour .....

(*g.*) succéder à .....

Give the English of the above sentence (for sentence (*g*) only):—

.....

(*h.*) servir de .....

(*i.*) s'en aller .....

(*j.*) de crainte que .....

10 5. Complete the following sentences by putting the verbs printed in italics in the tense required by the context:—

(*a.*) Mon lapin est *mourir* ..... hier matin.

(*b.*) Elle a beaucoup *pleurer* .....

(*c.*) Si vous faites cela votre livre ne *valoir* (future) ..... plus rien.

(*d.*) Je le *conduire* (past def.) ..... à l'école où il *s'asseoir* ..... dans un coin.

(*e.*) J'ai *écrire* ..... à mon cousin pour lui annoncer la bonne nouvelle.

(*f.*) Je *s'endormir* ..... hier très tard et je ne *se lever* ..... qu'à dix heures. Je *se baigner* ..... et je *nager* ..... toute la matinée demain.

Value.

15 6. Give in French five questions on any subject and the answers to them. Use the type of question and answer that you have had in class.

.....

.....

FRENCH TRANSLATION. (Time, 2 hours.)

40 1. With the help of the following ideas write a letter or a description, avoiding enumeration and using suitable adjectives. (Do not give your real name or address and do not translate.)

You are visiting friends in a large port city of France and you are describing to a friend in Canada the walk you take almost every day to the water-side along the quays, speaking of the busy scenes often seen there: many ships being loaded with goods from warehouses; townspeople going up the river on excursions in steamboats; travellers boarding the large ocean-bound boats, friends saying farewell; fishermen going out to sea or returning with their fishing-boats. Children are playing in the sand by the riverside; gulls are flying near the lighthouse on the rocks; pretty country houses are scattered on the sunny hills covered with vineyards.

35 2. (*a.*) In one or two French sentences, say what are: une gare, le Louvre, Versailles, le marin, Noël, un musée, les vendanges, les boulevards.

(*b.*) Express in French, but in other words, the meaning of the following sentences.

(Example: Je suis heureux d'être revenu: Je suis content d'être de retour.)

(1.) Jean est à l'école depuis douze mois.

(2.) Tout à coup l'homme qui donne des leçons se mit à marcher vers le bâtiment.

(3.) Il a passé son examen le premier jour de la semaine.

(4.) Nous désirons faire du travail pour le frère de notre mère.

25 3. Answer *in English* the questions at the end of this passage, thus showing that you have read and understood it. *Do not translate it.*

On a attribué bien des reparties à la célèbre actrice Madeleine Brohan qui a joué à la Comédie Française jusque vers la fin du XIXième siècle, mais celle-ci se trouve être authentique:

C'était le soir de la première d'une pièce de Dumas fils, le maréchal Canrobert, bien connu pour sa bravoure, entra au "foyer" des artistes où toute la troupe se trouvait réunie. Cette pièce doit son nom au foyer (hearth) de la grande cheminée qui s'y trouvait où chacun venait se chauffer autrefois quand le reste du théâtre était froid.

Ce soir-là le maréchal s'approcha du feu, puis s'avançant près des artistes silencieux:

"Vous n'êtes pas gais, fit-il, qu'avez vous tous?

— Ah! monsieur le maréchal, répondit Madeleine Brohan, c'est ce soir jour de grande bataille!

— Eh bien! c'est jour de victoire!

— Rien ne nous l'assure quoique nous le désirions et bien que nous fassions tous nos efforts possibles . . . enfin comment vous dire . . . nous avons peur!

— Peur! fit Canrobert d'un air surpris et qui semblait ne pas comprendre . . .

— Ah! oui, c'est vrai, reprit Madeleine. Pardon, et elle sonne, disant au serviteur qui paraît à la porte:

— Picard, un dictionnaire pour Monsieur le Maréchal.

(1.) Comment la salle de réunion des artistes devint-elle "foyer"?

(2.) Pourquoi les artistes n'étaient-ils pas gais?

(3.) Que veut dire Madeleine par sa réponse à la question du Maréchal?

(4.) Pourquoi l'actrice demande-t-elle un dictionnaire?

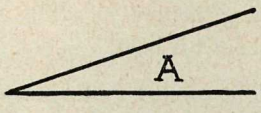
(5.) Trouvez un titre pour cette anecdote.

GEOMETRY. (Time, 2½ hours.)

[N.B.—*Draw neat diagrams; use printed capitals. Authorities may be cited by number or by enunciation.*]

Value.

14 1. Make an *accurate* construction of the following, omitting proof but showing all necessary construction lines: Construct a triangle on a base 3 inches long, with an altitude of 2 inches, and having a vertical angle equal to the given angle A.



10 2. State whether the following statements are (1) *always true*, (2) *sometimes true*, or (3) *false*. [It is not necessary to copy down the statements or to give any explanations. Refer to them only, and *clearly*, as (*a*), . . . (*f*).]

(*a*.) If $a+b>c$, then $a^2+b^2>c^2$.

(*b*.) If ABC and DEF are similar triangles and AB is double DE, then the triangle ABC is double the triangle DEF.

(*c*.) If two triangles are equiangular they are similar.

(*d*.) If two triangles are equiangular they are congruent.

(*e*.) AB and CD are two chords of a circle intersecting at P. Then AP.PB = CP.PD when P lies on the circumference.

(*f*.) ACB is a segment of a circle on the chord AB. Then the angle ACB always has the same magnitude whether C coincides with B or not.

14 3. If a pair of opposite angles of a quadrilateral are supplementary, its vertices are concyclic.

14 4. (*a*.) If two triangles are equiangular their corresponding sides are proportional.

6 (*b*.) The triangles ABC and DEF are equiangular, having $\angle A = \angle D$, $\angle B = \angle E$, $\angle C = \angle F$. If AB = 5, BC = 6, EF = 9 and the area of ABC = 12, find the length of DE and the area of DEF.

14 5. ABC is an isosceles triangle having AB = AC. The perpendicular from B upon AC is BD. Prove $BC^2 = 2\,AC.CD$.

14 6. (*a*.) Show, without proof, how to construct a circle to touch a given circle at a given point A and to pass through a given point B, (1) when B lies within the given circle, (2) when B lies without the given circle.

(*b*.) What happens when B is (i) on the circumference of the given circle, (ii) on the tangent to the given circle at the given point A?

[NOTE.—*Candidates will work* either 7 or 8. *If both questions are done, only the first one attempted will be marked.*]

14 7. Two circles DGE and DFE have a common chord DE, and the centre P of DGE lies on the circumference of DFE. A straight line PHGF cuts the common chord at H, the circle DGE at G, and the circle DFE at F. Prove that PG is a mean proportional between PH and PF.

Or

8. Divide a given arc of a circle into two parts so that the chords of these two parts shall be in the ratio 3 : 2.

German Grammar. (Time, 2 hours.)

Value.

6 1. Use in complete sentences the genitive singular of: Stadt, Mensch, Herz; and the genitive plural of: Schwester, Wald, Auge.

10 2. Put into German:—

(1.) The chair is behind the table.
(2.) He came with his brother.
(3.) They went through the park.
(4.) He came in spite of the rain.
(5.) He put the chair between the door and the window.
(6.) He ran to me.
(7.) He put it under the desk.
(8.) They came a week ago.
(9.) It rained during the day.
(10.) He came without his book.

10 3. Insert articles and fill in correct endings where necessary, then rewrite in the plural:—

Dies—reich—Dame wohnt in ein—vornehm—Haus in jenbreit—Straße. Sie hat ein—klein—Sohn, der immer mit—groß—Hund sein—älter—Bruders spielt. Er liebt—gut—Tier und wenn er in—prächtig—Automobil sein—schön—Mutter fährt, nimmt er sein—treu—Freund mit.

10 4. (*a.*) Change the following infinitives to the correct form of the present tense:—

(1.) Er eintreten in das Zimmer.
(2.) Du wissen es nicht.
(3.) Er abfahren morgen.
(4.) Er vergessen zu schnell.
(5.) Er betrachten die Landschaft.

(*b.*) Write the future of (1), the future-perfect of (3), and all the imperative forms of: laut sprechen and sich anziehen.

10 5. Change the following verbs to the imperfect and pluperfect tenses:—

(1.) Er sitzt auf dem Stuhl.
(2.) Du hebst die Kreide auf.
(3. Er reitet im Park.
(4.) Er befindet sich wohl.
(5.) Du nimmst es mit.

12 6. Put into German:—

(1.) He is just as old as his friend.
(2.) The days are longer in spring than in winter but they are longest in summer.
(3.) I like that book best.
(4.) She gave him her pen because he had lost his.
(5.) I like your watch better than mine.
(6.) That pencil is not yours; please give it to me.
(7.) To whom and with what shall I write this letter?

Value.

6 7. (*a.*) Combine the following sentences by means of a relative pronoun :—

(1.) Dein Brief war interessant. Du hast deine Reise darin beschrieben.

(2.) Ich kenne die Frau. Ihr Sohn ist krank.

(3.) Der Mann ist hier. Ich besuchte ihn gestern.

(*b.*) Combine the following sentences by means of a conjunction :—

(1.) Sie gingen spazieren. Sie wollten frische Luft atmen.

(2.) Seine Freunde waren in Hamburg. Er wußte das.

(3.) Sie kamen erst um elf Uhr an. Sie gingen dennoch spazieren.

21 8. Put into German :—

(1.) If you (sing.) wish to learn German, you must study.

(2.) He knew the city and he knew how many people lived there.

(3.) He brought me three glasses of water and two cups of coffee.

(4.) He was sorry that I was not feeling well yesterday.

(5.) That is all that I know about it.

(6.) He who is not for me is against me.

(7.) Goethe died on the 22nd of May, 1832, in the little city of Weimar. (In full.)

15 9. Put into German :—

The German schoolboy has to get up early in the morning as school begins at eight o'clock. At a quarter past seven he is already washed and dressed and begins his breakfast. At school he has classes until noon when he goes home for dinner. He must know his lessons and pay attention in class, for if he does not, he will have to stay in after school. In the afternoon he can play if he wants to, but in the evening he must do his lessons for the next day. Then he goes to bed and falls asleep at once.

GERMAN TRANSLATION. (Time, 2 hours.)

60 1. Put into English :—

(*a.*) Der junge Drechsler kam zur Abendzeit zu dem Wirtshaus, wo seine Brüder betrogen worden waren. Er legte seinen Ranzen vor sich auf den Tisch und fing an zu erzählen, was er alles in der Welt gesehen habe. „Ja," sagte er, „man findet wohl ein Tischchen-dect'-dich, einen Goldesel und dergleichen: alles gute Dinge, die ich nicht verachte; aber das ist nichts gegen den Schatz, den ich mir erworben habe und mit mir da in meinem Sack führe." Der Wirt spitzte die Ohren. „Was in aller Welt mag das sein?" dachte er, „der Sack ist wohl mit lauter Edelsteinen angefüllt; den sollte ich auch noch haben."

(*b.*) „Wir verstehen dich nicht? Wer kann dich verstehen? Du glaubst vielleicht, daß du klüger bist als der Kater und die Frau? Von mir will ich nicht reden. Sei vernünftig und danke Gott, daß du es so gut hast! Wohnst du nicht in einer warmen Stube, und hast du nicht eine Gesellschaft, von der du profitieren kannst? Aber du bist ein Schwätzer, und es ist nicht angenehm, mit dir zu sein. Mir kannst du glauben! Ich meine es gut mit dir. Ich sage dir Unannehmlichkeiten, und daran kann man seine wahren Freunde erkennen! Sieh nur zu, daß du Eier legst!"

Value.

(*c.*) Die blühenden Büsche öffneten sich von selbst und zeigten den Knaben einen Pfad. Das Sonnenlicht blinkte durch das Blätterdach der Waldbäume und malte tausend goldene Augen auf das Moos, und aus dem Moos stiegen Sternblumen von brennenden Farben. Droben aber in den Zweigen flatterten singende Vögel, und Hirsche, Rehe und andere Waldtiere sprangen lustig durch die Büsche.

(*d.*) „In der letzten Nacht—Schauder faßt mich, wenn ich daran denke—vernahm ich ängstliches Wehgeschrei, welches offenbar aus der Kehle einer meiner Mitgefangenen kam. Ich sah zwei Augen im Mondlicht funkeln und hörte Todesröcheln. Ein Fuchs mußte in den Stall eingebrochen sein. Die Angst verlieh mir Kräfte, ich zwängte mich durch das Gitter meines Kerkers und gelangte ins Freie. Ich war gerettet. Meine Flügel trugen mich in dieses Tal, wo ich bleiben will, bis der Winter kommt."

(*e.*) Und heute gab der Vater ein Schwert mir in die Hand,
Und weihte mich zum Kämpfer für Gott nnd Vaterland.
Er maß mich mit den Blicken vom Kopf bis zu den Zehn,
Mir war's, als tät' sein Auge hinab ins Herz mir sehn.
Ich hielt mein Schwert gen Himmel, und schaut' ihn sicher an;
Und deuchte mich zur Stunde nicht schlechter als ein Mann.
Da sprach er, und die Wange ward ihm wie Blut so rot:
Glück zu mit deinem Schwerte, du kleiner Hydriot!

(*f.*) Er spricht im Schlaf zum Knaben:
„Geh hin vors Schloß, o Zwerg,
Und sieh, ob noch die Raben
Herfliegen um den Berg.
Und wenn die alten Raben
Noch fliegen immerdar,
So muß ich auch noch schlafen
Verzaubert hundert Jahr."

10 2. Translate at sight:—

Ein Löwe, ein Fuchs und ein Esel gingen zusammen auf die Jagd. Als sie einen Hirsch[1] getötet hatten, befahl der Löwe dem Esel die Beute zu teilen. Dieser machte drei gleiche Teile und bat den Löwen zu wählen. Der Löwe, welcher erwartet hatte, einen größeren Teil als die anderen zu bekommen, war zornig und tötete den Esel. Er befahl denn dem Fuchs, eine neue Teilung zu machen. Dieser legte fast alles vor den Löwen und behielt nur sehr wenig für sich. „Wer hat dich so teilen gelehrt?" fragte ihn der Löwe. „Die Haut des Esels," antwortete der Fuchs.

[1] Stag.

15 3. Put into German:—

A boy once saw a little rose on the heath. It was so beautiful that he ran quickly to see it more closely. He said to the rose, "Little heathrose, I like you so much that I am going to pluck you." But the little rose replied, "If you break me, I shall prick you with my thorns, so that you will always have to think of me." But that did not help it any and it had to suffer in that the wild boy plucked it.

15 4. Write in German a description of your home. (At least half a page.)

GREEK. (Time, 2 hours.)

Value.

10 1. Decline throughout οὗ, ἐγώ, ἀνήρ, ῥήτωρ.

5 2. Decline μέλας (three genders) in the singular; χρυσοῦς (three genders) in the plural.

10 3. Conjugate the imperfect indicative and the present imperative and optative of εἰμι.

10 4. Conjugate the pluperfect passive indicative of πείθω, the present active subjunctive of τιμάω, the aorist passive indicative of ἄγω.

10 5. (*a.*) When does ἐστί become ἔστι? When does an enclitic lose its accent?

(*b.*) Write the Greek preposition for the following meanings, indicating the case governed: out of, on account of, by (of the agent, with passive verbs).

(*c.*) How is means expressed in Greek? time within which? manner? When is -ν movable used? What is a proclitic?

10 6. Write the principal parts of εἰμί, πορεύομαι, γράφω, κόπτω, φυλάττω, καλέω, λαμβάνω, χράομαι, ἐάω, φεύγω.

20 7. Translate into English:—

(*a.*) πολέμιον δὲ τὸν Κῦρον μὴ ποιήσωμεν.

(*b.*) ἐρωτᾷ οὖν ποίους τε καὶ πόσους ἐν τῇ στρατιᾷ εἶχες σφενδονήτας.

(*c.*) εἰ γάρ τις ἄλλος τὸ αὐτὸ τοῦτο ποιήσειεν, ἔγωγε οὐκ ἂν ἐπαινέσαιμι.

(*d.*) ἀσπίσι καὶ ἀκινάκαις δέκα ἡμέρας ἐπολέμουν ἀλλήλοις.

(*e.*) τοῖς δ' Ἕλλησιν ἕψομαι ἐὰν ψηφίσωνται τῷ τῶν Περσῶν στρατηγῷ συμπορεύεσθαι.

25 8. Translate into Greek:—

(*a.*) Do not bring this wagon into the market-place.

(*b.*) If you had not asked Cyrus for bowmen, you would have been defeated easily.

(*c.*) Your bows are not handsome, but they are strong.

(*d.*) In all these places he destroyed the bridges so that the Persians might not retreat.

(*e.*) Were you not afraid that he would be a bad friend?

HISTORY. (Time, 2 hours.)

[*Answer any* four *questions.*]

25 1. How did each of the following contribute to the success of the Protestant Reformation: Luther, Calvin, Zwingli, Elizabeth, Henry VIII.?

5 2. (*a.*) What is meant by Puritanism?

20 (*b.*) What was the attitude of the typical English Puritan of the first half of the 17th Century towards the King, the Roman Catholic Church, the Stage, the Bible, the Parliament?

9 3. (*a.*) Name three ways in which the life of the working-man was improved by the Industrial Revolution.

9 (*b.*) Three ways in which it deteriorated.

7 (*c.*) Was its general effect good or bad?

25 4. What were the great problems facing France after 1871? Show, briefly, how these problems were met, and describe the political condition of France in 1914.

Value.

25 5. Compare the Canada of 1867 with the Canada of 1927 under the following headings:—
Geographical extent.
Population, and its distribution.
Means of communication.
Relation to the British Government.
Relation to the King.

10 6. (*a.*) Why did Great Britain enter the World War?

15 (*b.*) How did the Treaty of Versailles affect the British Empire?

15 7. (*a.*) What conditions in Russia made the revolution inevitable?

10 (*b.*) Were any of these conditions similar to those that caused the French Revolution?

16 8. (*a.*) List some of the important accomplishments of the League of Nations.

9 (*b.*) Give three reasons for its failure to accomplish more.

LATIN AUTHORS AND SIGHT TRANSLATION. (Time, 2½ hours.)

A. CAESAR, DE BELLO GALLICO, BOOKS IV. AND V.

1. Translate:—

8 Pugnatum est *ab utrisque* acriter. Nostri tamen, quod neque ordines servare neque firmiter insistere neque *signa* subsequi poterant atque alius alia ex navi quibuscumque *signis* occurrerat se adgregabat, magnopere perturbabantur; hostes vero, notis omnibus vadis, ubi ex litore aliquos singulares ex navi egredientes conspexerant, incitatis equis impeditos adoriebantur, *plures* paucos circumsistebant, alii ab latere aperto in universos tela conjiciebant.

3 (*a.*) *Ab utrisque.* What would *ab utroque* mean?

(*b.*) Account for the case of *signis, plures.*

2. Translate:—

6 Secutae sunt continuos complures *dies* tempestates, quae et nostros in castris *continerent* et hostem a pugna prohiberent. Interim barbari nuntios in omnes partes dimiserunt paucitatemque nostrorum militum *suis* praedicaverunt et quanta praedae *faciendae* atque in perpetuum sui liberandi facultas *daretur*, si Romanos *castris expulissent*, demonstraverunt.

7 (*a.*) Account for the case of *dies, suis, faciendae, castris;* the mood of *continerent, daretur, expulissent.*

3. Translate:—

6 Posteaquam *id* obstinate sibi negari vidit, omni spe impetrandi adempta, principes Galliae sollicitare, sevocare singulos hortarique coepit ut in continenti *remanerent;* metu territare, non sine causa fieri, ut Gallia omni *nobilitate* spoliaretur; id esse consilium Caesaris ut quos in conspectu Galliae interficere *vereretur* hos omnes in Britanniam traductos necaret.

4 (*a.*) Account for the case of *id, nobilitate;* the mood of *remanerent, vereretur.*

B. VIRGIL, AENEID II., LINES 1–505.

4. Translate:—

4 Pars stupet innuptae donum exitiale Minervae
et molem mirantur equi; primusque Thymoetes
duci intra muros hortatur et arce locari,
sive dolo seu iam Troiae sic fata ferebant.

1 (*a.*) What is noteworthy about the mood of *duci?*

5. Translate:—

6 Hic Ithacus vatem magno Calchanta tumultu
protrahit in medios; quae *sint* ea numina divum

Value.

flagitat. et mihi iam multi crudele canebant
artificis scelus, et taciti ventura videbant.
bis quinos silet ille dies tectusque recusat
prodere voce sua *quemquam* aut opponere morti.

3 (*a.*) Account for mood of *sint.*

(*b.*) Why is *bis quinos* used instead of *duo quinque,* and *quemquam* instead of *aliquem?*

6. Translate:—

4 Tunc etiam fatis aperit Cassandra futuris
ora dei iussu non umquam *credita* Teucris.
nos delubra deum miseri, quibus ultimus *esset*
ille dies, festa velamus fronde per urbem.

2 (*a.*) What is noteworthy in the use of *credita?*

(*b.*) Give two possible explanations of the mood of *esset.*

7. Translate:—

2 Sat patriae Priamoque datum: si Pergama *dextra*
defendi *possent,* etiam hac defensa *fuissent.*

4 (*a.*) Account for the case of *dextra,* the mood of *fuissent;* the tense of *possent.*

(*b.*) Scan the second line.

8. Translate:—

4 Iliaci cineres et flamma extrema meorum,
testor, in occasu vestro nec tela nec ullas
vitavisse vices Danaum et, si fata fuissent
ut caderem, meruisse manu.

1 (*a.*) Scan the third line.

C. Sight Translation.

35 9. Translate at sight: —

Darius autem, cum ex Europa in Asiam redisset, hortantibus amicis ut Graeciam redigeret in suam potestatem, classem quingentarum navium comparavit eique Datim praefecit et Artaphernem hisque ducenta milia peditum, decem milia equitum dedit, causam interserens se hostem esse Atheniensibus, quod eorum auxilio Iones quandam e suis urbibus expugnassent suaque praesidia interfecissent. Illi duces cum classis ad insulam Euboeam venisset celeriter Eretriam ceperunt omnesque eius gentis cives abreptos in Asiam ad regem miserunt. Inde ad Atticam accesserunt ac suas copias in campum Marathona deduxerunt. Is abest ab oppido Atheniensium circiter milia passuum decem. Hoc tumultu tam propinquo tamque magno Athenienses permoti auxilium a Lacedaemoniis petiverunt Phidippumque cursorem eius generis, qui hemerodromoe vocantur, Lacedaemonem miserunt, ut nuntiaret quantum esset periculum. Domi autem creant decem praetores, qui exercitui praeessent, in eis Miltiadem. Inter quos magna fuit contentio, utrum moenibus se defenderent an obviam irent hostibus acieque decernerent. Unus Militiades maxime nitebatur, ut primo quoque tempore castra fierent: id si factum esset, et cives fortius pugnaturos, cum viderent de sua virtute non desperari, et hostes eadem re fore tardiores, si animadverterent Athenienses audere adversus se tam exiguis copiis dimicare.

redigere=reduce, bring.
interserere=allege.
hemerodromoe=day runners.
primus quisque=first possible.
obviam ire=meet.
castra facere=take the field.

LATIN GRAMMAR AND COMPOSITION. (Time, 2 hours.)

Value.

13 1. Write the genitive plural of:—

civis fortis .....
res gesta .....
hic fructus .....

the dative singular of:—

haec respublica .....
illa spes .....
quod flumen .....

the ablative singular of:—

idem tempus .....
onus grave .....

the genitive singular of:—

eadem legio .....
uter frater .....
iter longius .....

the accusative plural of:—

caput suum .....
illud genus .....

3 2. Write the genitive singular (with the adjective in the *superlative*) of:—

respublica libera .....

the accusative plural (with the adjective in the *comparative*) of:—

mare latum .....

the ablative singular (with the adjective in the *superlative*) of:—

cornu gracile .....

14 3. Write the second singular present indicative of:—

proficiscor .....
nolo .....
abeo .....
differo (active and passive) .....

the second singular perfect indicative active of:—

mitto .....

the third plural present subjunctive active of:—

rego .....
mitto .....
iubeo .....
volo .....

the perfect infinitive active of:—

cognosco .....

the singular present imperative passive of:—

rego .....

the singular present imperative of:—

proficiscor .....
nolo .....

12 4. Write in Latin:—

(*a.*) You (sing.) were being heard.

.....

(*b.*) We shall begin to retreat.

.....

(*c.*) You have said.

.....

(*d.*) To have learned.

.....

Value.

(*e.*) To take thought for one's self.

.....

(*f.*) This circumstance was of great service to our men.

.....

(*g.*) At the beginning of summer.

.....

(*h.*) I shall become consul.

.....

(*i.*) I was informed.

.....

(*j.*) I do not know whither we are going.

.....

5. Translate into Latin:—

5 (*a.*) When hostages have been received the troops will retire into winter quarters.

.....

4 (*b.*) Caesar himself will occupy the same camp.

.....

4 (*c.*) The neighbouring states promised to give hostages.

.....

6 (*d.*) They informed me that you would not venture to advance.

.....

6 (*e.*) He asked us which of the two had been the more useful friend.

.....

6 (*f.*) I do not know who has been placed in command of this camp.

.....

4 (*g.*) They said they had not waged war upon us.

.....

6 (*h.*) Caesar sent Volusenus into Britain in advance to find out what the Britons were doing.

.....

6 (*i.*) He asked my brother whether he was willing to remain all day.

.....

5 (*j.*) The soldiers advanced with such speed that they soon overtook the enemy's rear guard.

.....

6 (*k.*) He urged us not to believe that he was willing to spare the lands of the barbarians.

.....

PHYSICS. (Time, 2½ hours.)

[*The last question and* any other seven *constitute a full paper.*]

12 1. (*a.*) A body weighing 300 pounds is to be pushed by hand up a 12-foot plank into a wagon 4 feet high. What is the smallest force required if friction be neglected?

(*b.*) What is the least force that must be applied to a cubic foot of wood of mass 30 pounds that it may be wholly immersed in a liquid of specific gravity 2?

12 2. (*a.*) A certain mass of gas occupies a volume of 100 c.c. at a temperature of 17° C. and a pressure of 80 cm. What volume will it occupy at a temperature of —23° C. and a pressure of 60 cm.?

(*b.*) Define the following terms: Absolute zero, B.T.U., heat of vaporization.

Value.

12 3. (*a.*) Find the resulting temperature when 100 grams of iron at 90° C. are immersed in 80 grams of water at 10° C., contained in a copper vessel of mass 20 grams. Specific heat of copper is 0.094 and that of iron is 0.113.

(*b.*) When water freezes or ice melts and when water vaporizes or water vapour condenses heat effects are produced. Explain clearly how this affects the climate.

12 4. (*a.*) At a time when the velocity of sound in air is 1,100 feet per second a certain air column in a pipe closed at one end is found to be the shortest that is in resonance with a tuning-fork of frequency 200. What is the length of the air column?

(*b.*) Define the following terms: transverse wave motion, wave length, octave, discord.

12 5. (*a.*) An object is placed 20 cm. from a concave mirror of focal length 30 cm. Calculate the position of the image. What kind of image is it?

(*b.*) Name one common defect of the eyes. Use diagrams to describe the nature of this defect and the means of correcting it.

12 6. (*a.*) By means of a drawing show how to locate the position of the image of an object placed within the focal length of a convex lens.

(*b.*) Make a sketch of the field of force revealed by iron filings (1) between two like magnetic poles, (2) between two unlike poles.

12 7. (*a.*) How does the intensity of light depend on the distance from the source? Prove this law.

(*b.*) Make a diagram to illustrate the principle of the D'Arsonval galvanometer. Mark the poles of the magnet, the direction of the current in the coil, and indicate clearly the direction of motion of the coil.

12 8. (*a.*) A carbon lamp takes 0.5 ampere at 110 volts pressure. Find the cost of operating the lamp for 10 hours at 5 cents per k.w.h.

Or

How much heat is given off in 10 minutes by an electric heater which takes 6 amperes at 110 volts pressure?

(*b.*) Use the electron theory to explain why a pith-ball is first attracted to and then repelled from a charged ebonite rod.

16 9. (*a.*) A force of 50 dynes acts on a mass of 10 grams which is free to move. If the body starts from rest, calculate:—

(1.) The acceleration.

(2.) The distance the body goes in the first 10 seconds.

(3.) The effective work done upon the body in the first 10 seconds.

(*b.*) Calculate the effective horse-power of a steam-pump that can raise 100 cubic feet of water per minute to a vertical height of 33 feet.

Grade XI., Normal Entrance.

GEOGRAPHY. (Time, 2 hours.)

[*Questions are of equal value. Answer* five *only.*]

1. (*a.*) In British Columbia on December 22nd the sun follows a certain path across the sky. Locate clearly the sun's position in its path at *sunrise;* at *noon;* at *sunset.*
   (*b.*) What is the *principal* factor governing the average temperature of a region? What *other* factors exert a modifying influence? Name and locate regions to illustrate your answers.
   (*c.*) In a direct flight at an average rate of 125 miles an hour, how long will it take an aeroplane to fly between two locations, if their respective latitudes are 5° North and 4° South, the longitude of each being 110° West?

2. (*a.*) How is delta land formed? Explain its economic value. Locate three deltas associated with ancient civilization.
   (*b.*) Account for the formation of the following rocks: *marble, limestone, granite.*
   (*c.*) How is the supply of raw material produced for each of the following manufactured goods and in what countries are such supplies chiefly obtained: *rope, worsteds, velvet, mohair, calico?*

3. (*a.*) Describe the main surface features of the province of Quebec and show how these divide the province into natural divisions. (Illustrate by a sketch-map.) What are the chief natural resources of each of these divisions?
   (*b.*) Discuss which province has the better manufacturing facilities, Quebec or Ontario.

4. (*a.*) Write comprehensively on the fishing industry of British Columbia.
   (*b.*) From what points in British Columbia along the main line of the Canadian Pacific Railway east of Mission do branch lines run? Name the other terminal point of each branch line. In projecting these lines the engineers took advantage of what physical features?
   (*c.*) By means of a sketch show the rivers of British Columbia which belong to the Mackenzie river system.

5. (*a.*) Explain clearly how the coast-line of Europe has influenced its development.
   (*b.*) Locate definitely and state the industrial or commercial importance of each of the following: *Antwerp, Fiume, Bergen, Grimsby, Galatz, Derby, Barcelona, Nancy, Milan, Helsingfors.*
   (*c.*) What is the largest river in Europe and into what body of water does it empty?

6. (*a.*) Draw a sketch-map as large as your paper will permit and locate the following: *Singapore, Peking, Yang-tse-kiang, Manila, Hong-kong, Shanghai, Yokohama, Formosa, Canton, Hwang-ho.*
   (*b.*) What agricultural products are common to both India and the United States? State the region in each country where they are produced extensively.

7. (*a.*) Describe the outstanding features of the Amazon and the Nile rivers.
   (*b.*) Name and locate the British and the French possessions in Africa.
   (*c.*) What is the largest city in the world south of the Equator? Account for its growth.

Grade XII., Senior Matriculation.

ALGEBRA. (Time, 3 hours.)

Value.

14 1. Solve the equations :—

(*a.*) $x^2 + \sqrt{x^2 - 5x + 1} = 5x + 1.$

(*b.*) $x + y + z = 7$

$x^2 + y^2 + z^2 = 21$

$yz = x^2.$

14 2. (*a.*) How many terms of the series 10, 5, 0, .. . are required to make a sum of (-750)?

(*b.*) The 4th term of a G.P. is 10 and the 7th is $\frac{5}{4}$. Find the series and its sum to infinity.

(*c.*) Derive the Harmonic mean between a and b.

14 3. (*a.*) If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f}$, prove that each ratio $= \frac{a - c + e}{b - d + f} = \sqrt[n]{\frac{a^n + c^n}{b^n + d^n}}$.

(*b.*) Given that $x^2 + y^2$, $ax + by$, $a^2 + b^2$ are in continued proportion, prove that x, y, a, b, are in proportion.

14 4. (*a.*) If x varies inversely as y and y varies inversely as z, prove that z varies as x.

(*b.*) The squares of the times of revolution of planets around the sun vary as the cubes of their mean distances from the sun. The earth's time of revolution is 1 year and its mean distance is d. Find the time of revolution of Mars around the sun in years, given that its mean distance is $1.5d$.

14 5. (*a.*) Form the equation whose roots are $5 + \sqrt{7}$ and $5 - \sqrt{7}$.

(*b.*) Prove that the roots of the equation $(a + b)x^2 - (a + b + 2c)x + c = 0$ are always real provided a, b, c are real.

14 6. (*a.*) How many different committees of four persons can be chosen from 10 persons? How is the result affected if the chairman of each committee is always to be the same person?

(*b.*) A car seats 7 passengers including the driver. In how many different ways can five persons be seated if only two can drive?

16 7. (*a.*) Write down the general term of $\left(x^2 + \frac{1}{x}\right)^n$ and hence show that there will be a term independent of x in this expansion if n is a multiple of 3.

(*b.*) Write down and simplify the first three terms of the expansion of $(1 - x)^{-\frac{5}{2}}$.

(*c.*) The amount of \$100 bearing compound interest for 10 years at 5% is $\$100(1.05)^{10}$. Use the Binomial Theorem to find this amount to the nearest dollar.

BIOLOGY. (Time, 3 hours.)

[*Questions are of equal value. Answer* five *only. Illustrate answers by sketches or diagrams.*]

1. Trace the circulation of the blood in mammals, from the time it leaves the left ventricle until it returns to it again. Explain what changes take place in the composition of the blood during its course. How was the circulation of the blood discovered, and by whom?

2. Describe the structure of a nerve cell, a muscle cell, a food-storage cell, a palisade cell, and the epidermal cell of a leaf. State the function of each, and show how the structure is related to the work it performs.

3. Discuss nutrition under the heads: digestion, absorption, and assimilation.

4. Explain what is meant by alternation of generations; illustrate by reference to the life histories of a hydroid *and* a moss.

5. Compare the structure of the hind limb of (*a*) a bird, (*b*) a cat, and (*c*) a horse; in each case show how it is related to the mode of life of the animal.

6. Explain fully the following terms and illustrate by reference to examples: colloid, diffusion, enzyme, fertilization, osmosis, plasmolysis, pollination, symbiont.

CHEMISTRY. (Time, 3 hours.)

[*Questions are of equal value. Answer* ten *only. Atomic weights are given at end of paper.*]

1. A certain gaseous compound was found to contain 80% of carbon and 20% of hydrogen by weight. Also, one litre of it weighs 1.2314 gms. at 20° C. and 750 mm. pressure. Calculate its formula.

2. Describe, with equations, the chemical reactions involved in the manufacture of *either* (*a*) sodium carbonate by the Le Blanc or salt cake process, *or* (*b*) sodium bicarbonate by the Solvay or ammonia process.

3. Discuss fully, in reference to a solution of cupric bromide in water, three methods of displacing ionic equilibria. Write all necessary equations.

4. For the neutralization of 77 c.c. of a certain alkaline solution, 25 c.c. of normal hydrochloric acid are required. What is the normal concentration of the alkali? If the alkali was sodium hydroxide, what weight of it was present? If it was barium hydroxide, what weight of it was present?

5. Describe, as fully as possible, the chemistry of the chamber process for the manufacture of sulphuric acid.

6. Discuss oxidation and reduction under the following headings:—
   (*a.*) oxidation by oxygen,
   (*b.*) oxidation by other negative elements,
   (*c.*) oxidation and valence,
   (*d.*) oxidation and ionization.

7. Write on the oxidizing action of nitric acid under the following headings:—
   (*a.*) oxidation of hydrogen,
   (*b.*) oxidation of heavy metals,
   (*c.*) oxidation of non-metals,
   (*d.*) aqua regia.

8. (*a.*) What is an ester? Describe the preparation of any one. Why are such actions not regarded as neutralizations?
   (*b.*) Describe, with equations, the preparation of any one soap and also show why this soap does not act well in hard water.

9. (*a.*) Name the chief ores of iron.
   (*b.*) Describe the chemical and physical conditions existing in the blast furnace while iron is being formed from the ore.
   (*c.*) What is steel?

10. Outline the history of the discovery of radium.

11. Give an account of the analytical reactions of any *two* of the following: (*a*) silver, (*b*) lead, (*c*) mercury, (*d*) zinc.

Atomic weights: C=12.005, H=1.008, Cl=35.46, Na=23.00, Ba=137.37.

ENGLISH COMPOSITION. (Time, 3 hours.)

Value.

25 1. In the following sentences point out what is incorrect and rewrite each sentence in better form:—

(*a.*) Take pains with spelling and you can avoid all misspellings.

(*b.*) This hotel will be built on the site of the New Haven House, which is soon to be torn down, opposite the Green, and is unquestionably the most desirable location in the city for such a building.

(*c.*) He tried to frighten the mouse from under the bureau, but that was impossible, and then he tipped it over, and the creature ran out, but it did not escape for Fido sprang upon it and bit off its neck.

(*d.*) I was riding in an automobile the other day when we ran over a spaniel dog and killed it in spite of all we could do to get out of it.

(*e.*) Not wishing to insist, nevertheless, this point demands attention.

15 2. Examine the following paragraph so as to show how far it exhibits the laws and devices of good paragraph structure:—

However original and iconoclastic Shaw may be in respect to interpretative prefaces and artistically cast stage-directions, in the matter of dramatic construction and technique he has been notably rigorous, rather than careless, in his attempt at realistic representation. In minor matters of punctuation, it is true, he has freely gratified his own preferences and likings—using spaced letters for emphasis, omitting commas and apostrophes whenever no doubt as to the sense is involved, avoiding quotation marks for titles and, indeed, in biblical fashion, dispensing with punctuation on every possible occasion. All these things are merely matters of taste. But the conventional technique of the drama, the customs, tricks, and devices of stage-draft, he ordinarily accepts without question. In *Widowers' Houses* in its first form, he made the explicit division into scenes; since that time, he has made each of his plays, as far as scenes go, a continuous whole, unbroken save only by division into acts, and by a succession of asterisks where a lapse of time is to be understood. In this respect, he has carefully preserved his rule of writing down nothing that might remind the reader of an actual stage or a theatric representation.

10 3. Discuss briefly how to plan an expository essay. Illustrate your discussion by making a plan for your answer to question 4.

50 4. Write an expository theme of about 300 words on *one* of the following topics:—

(*a.*) Opportunities for a young man in commerce (*or* teaching, *or* mining, *or* agriculture).

(*b.*) Why I like (*or* dislike) Modern Poetry.

(*c.*) The present system of examinations.

(*d.*) Why I prefer the study of Science to the study of Languages (*or* the study of Languages to the study of Science).

ENGLISH LITERATURE. (Time, 3 hours.)

14 1. "The home-sickness of the poet may be home-sickness for beauty, or for permanence, or even for the past."

(*a.*) Quote, or fully paraphrase, a poem in Methuen's *Anthology* which illustrates any one of these three phases or any other phase of the "home-sickness" of the poet.

Value.

(*b.*) Mention as many poems as you can which would illustrate the above quotation. Write a brief note on each poem to show why you mention it in this connection.

12 2. In 1½–2 pages write a criticism of *any one* of the following: (*a*) "The Hound of Heaven"; (*b*) "The Great Lover"; (*c*) "The Souls of the Slain."

12 3. Write an essay of about 300 words on *one* of the following, drawing your illustrations from Methuen's *Anthology*:—

(*a.*) "The passion of love sets as few of the younger poets on fire as the passion of politics."

(*b.*) Attachment to the soil as an inspiration for the modern poet.

12 4. Contrast *Electra* and *Julius Caesar* as to the following particulars:—

(*a.*) The motive of the main action.

(*b.*) Unity.

(*c.*) The influence of the women characters on the main action.

12 5. Discuss briefly the dramatic significance of *any three* of the following:—

(*a.*) The macaroon incident in *A Doll's House.*

(*b.*) The opening scene in *Julius Caesar.*

(*c.*) The quarrel scene in *Julius Caesar.*

(*d.*) The tiff between Sir Peter and Lady Teazle in *The School for Scandal.*

14 6. Discuss the change in the character of Nora in *A Doll's House.* Do you think the change has been adequately accounted for in the play? Give reasons for your answer.

12 7. Basing your answer on "Wandering Willie's Tale," "The Gold Bug," and "The Vision of Mirza," discuss various methods of opening the short story.

12 8. Write briefly on *any two* of the following:—

(*a.*) The supernatural element in "Wandering Willie's Tale."

(*b.*) The mediaeval elements in "The Sire de Malétroit's Door."

(*c.*) The structure of "On Greenhow Hill."

FRENCH LANGUAGE. (Time, 3 hours.)

25 1. Traduction:—

Great as his misfortunes were Molière was no cynic. He was fond of magnificence and dress, he loved good cheer and gay companions. We are not surprised to learn that the lively wit and the generous heart of such a man made many friends. In their society he often passed a joyous evening at his country house near Paris, but he preferred no doubt those quiet evenings in the rue du Vieux-Colombier, where, three times a week, he was accustomed to meet that handsome writer of tragedies Racine, Boileau the literary critic, and the kind La Fontaine whose fables are immortal.

N.B.—Soulignez tous les mots que vous changez ou ajoutez dans 2, 3, et 4 (*b*), 4 (*c*).

15 2. Mettez les verbes en italiques au temps convenable:—

Si vous *ouvrir* toute grande la porte du salon j'entendrai peut-être un discours quelconque qui *pouvoir* m'intéresser, pourvu que les beaux esprits *savoir* exactement de quoi ils parlent, ce qui n'est pas toujours le cas. En *faire*

Value.

trop de phrases *compliquer*, il est possible qu'on *devenir* obscur en conversation et je crains bien que le public ne *comprendre* pas tout. Il y a longtemps que vous *s'apercevoir* et que vous *se plaindre* de la préciosité de ce cercle, et aussitôt qu'un comédien bien connu *voir* ces gens, la semaine dernière je crois, il écrivit une fine satire dont voici des exemples :—

Pensiez vous qu'une jeune fille se *pouvoir* accommoder de leur personne.
Voudriez donc que *j'aller* imprimer mes souliers en boue?
Par ma foi il faudra que vous *voir* cette pièce de théâtre.
C'est une ville que nous avons *prendre* à l'ennemi.
Un roman *être* bientôt fini si tout le monde vous ressemblait.

10 3. Reconstruisez les phrases suivantes en commençant par *c'est*, *ce sont*, ou *voilà* devant les mots en italique, et introduisez le pronom relatif convenable :—

Je regarde *les boulevards.*
Nous comptons sur *votre belle amie.*
Elles parlent de *ces professeurs.*
Ils ont vu de grandes usines parmi *ces montagnes.*
L'ouvrier a parlé au fils de *l'académicien.*
Son camarade est le *fermier de la vallée.*
Je pense *à cela.*
Une belle robe se fait pour *cette cliente.*
Il est monté jusqu'au sommet de *la tour.*
La salle est décorée de *boiseries superbes.*

25 4. (*a.*) Traduisez en français idiomatique :—

(1.) He needs paper and so do I.
(2.) You are rich enough, are you not?
(3.) Is this man having a house built? I think so.
(4.) Are you not hungry? Yes, I am.
(5.) Are you this child's mother? Yes, I am.

(*b.*) Placez les accents où ils sont nécessaires :—

(1.) Je veux aller la, pres du mur, voir les fruits murs de la voisine.
(2.) Le desert est bien different des descriptions faites au dessert par le voyageur.
(3.) Vous esperez voir la gelee et moi j'espere qu'il ne gelera pas.
(4.) Elle ira ou je veux, ou bien elle sera punie.

(*c.*) Changez les noms soulignés en pronoms :—

(1.) Les bancs sont au *Sénat* pour les *sénateurs* seuls.
(2.) Montrez des *costumes* à ces *laquais.*
(3.) Je montrerai la *danse* aux *visiteurs en Provence.*
(4.) Il visitera *l'atelier* où l'on fabrique les *machines* pour *Mme. Durand.*

25 5. Donnez l'équivalent français des phrases suivantes à l'aide de synonymes ou par la reconstruction, tout en gardant l'idée originale. (Exemple: Il croit partir dans huit jours=Il pense s'en aller la semaine prochaine.)

(1.) Ses manières sont du dernier bourgeois et il ne se soucie guère de faire des visites de rigueur.
(2.) L'habitant de Paris n'a pas tort de chérir ses boulevards et ses beaux monuments.
(3.) L' "immortel" accueille le nouveau venu "sous la coupole."
(4.) Le bel esprit souhaite fort qu'il puisse aller au petit coucher.
(5.) Rien ne gêne le regard dans cette étendue. L'ensemble forme une œuvre magnifique.

FRENCH LITERATURE. (Time, 3 hours.)

Value.

20 1. Faites en français un commentaire général sur ce passage et expliquez ensuite les expressions en italique. Il ne faut pas traduire le passage:—

Cathos.—En effet, mon oncle, ma cousine *donne dans le vrai* de la chose. Le moyen de bien recevoir des gens qui sont tout à fait *incongrus* en galanterie? Je m'en vais gager qu'ils n'ont jamais vu *la carte de Tendre*, et que Billets-Doux, Petits-Soins, Billets-Galants et Jolis-Vers sont des terres inconnues pour eux. Ne voyez-vous pas que toute leur personne marque cela, et qu'ils n'ont point cet air qui donne d'abord bonne opinion des gens? Venir en visite amoureuse avec *une jambe toute unie, un chapeau désarmé de plumes, une tête irrégulière en cheveux, et un habit qui souffre une indigence de rubans* . . . ! Mon Dieu, quels *amants* sont-ce là! Quelle *frugalité d'ajustement* et quelle sécheresse de conversation! *On n'y dure point*, on n'y tient pas. J'ai remarqué encore que leurs *rabats* ne sont pas de la bonne faiseuse, et qu'il s'en faut plus d'un grand demi-pied que leurs hauts-de-chausses ne soient assez larges.

30 2. Traitez l'un des sujets suivants:—

(*a.*) Pourquoi Molière critique-t-il les Précieuses?

(*b.*) Conversation entre deux dames à l'Hôtel de Rambouillet sur la question du mariage.

20 3. Donnez le français moderne pour les expressions suivantes:—

(*a.*) C'est à la cavalière.

(*b.*) Je veux vous dire l'air que j'ai fait là-dessus.

(*c.*) Je veux caution bourgeoise qu'ils ne me feront point de mal.

(*d.*) Je vois des yeux qui ont la mine d'être de fort mauvais garçons.

(*e.*) Votre complaisance pousse un peu trop avant la libéralité de ses louanges.

(*f.*) J'apprends les jolis commerces de prose et de vers.

(*g.*) Je m'en escrime un peu quand je veux.

(*h.*) Voyez-vous pas qu'il faut le surcroît d'un fauteuil?

(*i.*) Attachez un peu sur mes gants la réflexion de votre odorat.

(*j.*) J'ai mal au cœur de la seule vision que cela me fait.

15 4. Traduire:—

De l'autre côté de la piste, et ne la dominant que d'un ou deux mètres, les gens "chic" se sont confortablement installés et dînent, tout en suivant des yeux les coureurs. C'est un petit dîner, un petit souper plutôt, bien parisien: des coupes de champagne, une corbeille de fruits magnifiques, rien de plus. Mais les toilettes sont de la plus exquise élégance; le grand décolleté est de rigueur et même, sur une de ces robes, une petite bretelle de brillants remplace la simple épaulette de ruban ordinaire. Une autre de ces jeunes femmes porte un pendantif; elles ont de jolis peignes dans les cheveux, mais dans l'ensemble très peu de bijoux, à peine de bagues.

15 5. Traitez en quelques lignes (dix au maximum) deux des sujets suivants:—

(*a.*) Le paysan français.

(*b.*) Les vieilles danses françaises.

(*c.*) Un monôme d'étudiants.

(*d.*) L'académie française.

GERMAN GRAMMAR AND COMPOSITION. (Time, 3 hours.)

Value.

1. Put into German :—

20 (*a.*) Berlin, June 6th, 1927.

My dear Paul,

As I have been here now for a week, I must write to tell you about my trip. I am glad to say that the weather was fine, the ship comfortable and the passengers interesting, so I had a very good time. I thought that Hamburg was one of the finest cities I had ever seen, but I could not stay there long as I wanted to get to Berlin as quickly as possible. I like the arrangement of the German trains better than ours. Instead of one long coach with seats on each side of the aisle, there each coach is divided into several compartments and has a corridor which leads past the doors of the compartments. Although I have taken long walks every day and have examined many fine buildings, I have not yet seen all the interesting things in Berlin. I shall tell you more about them in my next letter.

With kindest regards,
Your old friend,
Fritz.

20 (*b.*) The two friends had wanted to go to Munich by way of Heidelberg and the Black Forest, but they had to change their plans as Paul's uncle wished them to come to him more quickly. He was afraid that he might have to take a trip and he wanted them to feel at home before he went away. Fritz did not like the new plan, for he was sorry not to be able to see such interesting places and he thought that they might perhaps not be permitted to do as they pleased at the home of Paul's relatives. Paul succeeded in convincing him, however, that Uncle Otto would help them gladly if he knew what they wanted to see and that they would learn more if they had an experienced guide.

10 2. Put into German :—

(1.) At what time do you prefer to have breakfast in the morning,—at half past six or a quarter past seven?

(2.) The old aunt, with whom my brother lived, has gone to Germany.

(3.) We may find many beautiful things in it which will interest us.

(4.) He did not succeed in having the tower built.

(5.) She should have gone home, as her mother has not been able to stay.

6 3. Rewrite in the passive :—

(1.) Mein Onkel ladet mich ein, ihn zu besuchen.

(2.) Die Mäuse haben endlich den Bischof aufgefressen.

(3.) Man wird oft diese Saga erzählen.

9 4. Change the following infinitives into present, imperfect and perfect tenses :—

(1.) Die Burg emporragen aus dem Wald.

(2.) Wir verbringen den Tag auf dem Wasser.

(3.) Er unternehmen die Arbeit.

Value.

6 5. Rewrite in indirect speech :—

(1.) Er sagte, „Ich muß zu Hause bleiben, da ich krank bin."

(2.) Er antwortete, „Ich werde keine Zeit haben, das zu tun."

(3.) Sie erwiderte, „Ich bin zu Hause geblieben, weil ich müde geworden bin."

9 6. Put into German :—

(1.) If I have money enough, I shall take a trip this summer.

(2.) If I only knew where I could get the money, I should make my plans at once.

(3.) If they had been able to stay longer, they could have seen much more.

20 7. Write in German a description of a summer holiday. (At least 20 lines.)

GERMAN TRANSLATION. (Time, 3 hours.)

1. Translate :—

10 (*a.*) Eine Ausschreibung erging an die deutschen Künstler, sie sollten Zeichnungen und Vorschläge für das Werk einsenden, und dem, der die besten einsandte, sollte die Ausführung übertragen werden. Von alledem hörte Maria nicht viel, denn sie ging nicht mehr unter die Leute, die sie schon kopfschüttelnd die Himmelsbraut nannten. Sie lebte einsam in ihrem kleinen Erkerstübchen, nnd immer trüber ward der Blick, mit dem sie zu dem hölzernen Christus aufblickte, den ihr Hans einst geschnitzt. Es ging nun ins fünfte Jahr, daß Hans nichts mehr hatte hören lassen. Freilich konnte und durfte er ihr ja nicht schreiben, und Freunde hatte er in Breisach nicht.

10 (*b.*) Und wenn auch der Baum sich aus der Erde höbe, und wenn auch der Kaiser aus dem Grabe stiege, und wenn auch Ruppachers Herz sich erweichte—was hälfe es ihm? Ruppacher selbst konnte ihm seine Tochter nicht mehr geben, denn er hatte ja einen Eid getan, daß er sie nur haben solle, wenn er einen Altar fertige, der höher sei als die Kirche, in der er stehe! Aber dies war ja unmöglich, und so war auch sein Wunsch unmöglich—und es hätte ein Wunder geschehen müssen um ihm zu hilfen. Aber Wunder tat Gott nicht für ein so unbedeutendes Menschenkind, wie er war.

2. Folgende Fragen auf Deutsch zu beantworten :—

7 (*a.*) Was war „das Werk," wofür die Künstler Zeichnungen einsenden sollten?

7 (*b.*) Wie bekam Hans die Idee zu seinem Altar?

3. Translate :—

6 (*a.*) Robert. Oh doch, mein Herr—gestern, als ich in das Museum wollte—kommt mir ein Herr entgegen, teilt mir sehr freundlich mit, daß gleich geschlossen würde—er mußte mir wohl den Fremden ansehen, und schlug vor, mit ihm zu frühstücken. Ich dankte zuerst, aber er bat mich, sein Gast zu sein, und so nahmen wir eine sehr gute Mahlzeit ein. Als er bezahlen will—denken Sie—hat man ihm sein Portemonnaie gestohlen.

8 (*b.*) Harry. Die Bibliothek haben Sie total demoliert,—Herr Marsland kommt auch über Sie—ich möchte nicht in Ihrer Haut stecken.

Value.

(Beiseite.) Jetzt wird er wohl genug haben. (Laut.) Guten Morgen, Herr Gibson! (Ab).

Gibson. Das ist ja eine verdammte Geschichte.—Schießen—das ist ja Unsinn—aber vor Zeugen die Ehe versprochen, das ist der kitzlichste Punkt—so eine alte Schachtel läßt nicht locker—kommt mir nach, wenn ich auch durchbrenne;—o weh—da ist sie schon!—

6 (*c.*) (1.) Was die Rechnung betrifft.
(2.) Das fehlte mir gerade noch.
(3.) Lassen Sie sich nicht zu viel von ihnen gefallen.
(4.) Man muß ihm aber gut sein.

6 (*d.*) (1.) It has just occurred to me.
(2.) That will not do in this case.
(3.) What is the matter with you?
(4.) That does not concern us.

4. Translate:—

8 (*a.*) Denke ich an den großen Kaiser, so wird es in meinem Gedächtnisse wieder recht sommergrün und goldig, eine lange Lindenallee taucht blühend empor, auf den laubigen Zweigen sitzen singende Nachtigallen, der Wasserfall rauscht, auf runden Beeten stehen Blumen und bewegen traumhaft ihre schönen Häupter. Ich spreche vom Hofgarten zu Düsseldorf, wo ich oft auf dem Rasen lag und andächtig zuhörte, wenn mir Monsieur Le Grand von den Kriegstaten des großen Kaisers erzählte und dabei die Märsche schlug, die während jener Taten getrommelt wurden, so daß ich alles lebendig sah und hörte.

6 (*b.*) Es war noch sehr früh, als ich Göttingen verließ, und der gelehrte * * lag gewiß noch im Bette und träumte wie gewöhnlich, er wandle in einem schönen Garten, auf dessen Beeten lauter weiße, mit Citaten beschriebene Papierchen wachsen, die im Sonnenlichte lieblich glänzen, und von denen er hie und da mehrere pflückt und mühsam in ein neues Beet verpflanzt, während die Nachtigallen mit ihren süßesten Tönen sein altes Herz erfreuen.

8 (*c.*) Er machte mich auch aufmerksam auf die Zweckmäßigkeit und Nützlichkeit in der Natur. Die Bäume sind grün, weil grün gut für die Augen ist. Ich gab ihm recht und fügte hinzu, daß Gott das Rindvieh erschaffen weil Fleischsuppen den Menschen stärken, daß er die Esel erschaffen, damit sie den Menschen zu Vergleichungen dienen können, und daß er den Menschen selbst erschaffen, damit er Fleischsuppen essen und kein Esel sein soll. Mein Begleiter war entzückt, einen Gleichgestimmten gefunden zu haben, sein Antlitz erglänzte noch freudiger, und bei dem Abschiede war er gerührt.

8 5. (*a.*) What outstanding qualities in Heine are illustrated in these passages? (Answer in English.)

10 (*b.*) Was dachte Heine von England? von Shakespeare? (Auf Deutsch zu beantworten.)

GEOMETRY. (Time, 3 hours.)

[N.B.—*Graph paper is supplied. Diagrams should be drawn to as large a scale as convenient to illustrate questions 4 and 6.*]

Value.

14 1. ABC is a triangle and AD is the perpendicular to BC. Prove that the rectangle AB.AC is equal to the rectangle contained by AD and the diameter of the circumcircle of ABC.

14 2. In a right-angled triangle any rectilineal figure described on the hypotenuse is equal to the sum of the two similar and similarly described figures on the other two sides.

14 3. DEF is the pedal triangle of ABC. Prove that A, B, C are the escribed centres of the triangle DEF.

4 4. (*a.*) Find where the line through (2, 4) whose slope is 3 cuts the line $2x+y=2$.

6 (*b.*) If the line AB whose equation is $x+5y=5$ cuts the axes of x and y respectively in A and B, find the length of AB and the co-ordinates of the point P which divides AB externally so that PA : PB=1 : 2.

4 (*c.*) Find the tangent of the acute angle between the lines $2x+y=2$ and $x+5y=5$.

4 (*d.*) Find the equation of the line through the intersection of the lines in (*c*) which is perpendicular to the former of these lines.

6 (*e.*) Find the equation of the circle described on AB as diameter, given A (5, 0) B (0, 1).

6 (*f.*) Find the equation of the line joining (—2, —3) to (4, —1) and place this equation in the "intercept" form.

12 5. (*a.*) Derive the equation of a line in the "slope" form.

(*b.*) A point (x, y) moves so that it forms with the fixed points (a, 0) (0, b) a triangle of constant area A. Write down the equation of the locus of the moving point and show that its slope is ($-b/a$).

16 6. Find the co-ordinates of the centre and the radius of the circle $x^2+y^2-8x-8y+19=0$. Show that $2x+3y=7$ is the tangent to this circle at (2, 1) and verify that the length of the perpendicular drawn from the centre of this circle on this tangent is equal to the radius.

HISTORY. (Time, 3 hours.)

[*Write on any* five *questions.*]

16 1. Give four causes of European Expansion in the 15th and 16th centuries.
4 Name four of the more important explorers that took part in the movement.

12 2. What was the great difference between the Indian policies of New France and of the English Colonies?
8 What was the attitude of the Spanish?

10 3. Account for the victory of England over France in North America.
10 What effect did the defeat of France have upon the attitude of the Thirteen Colonies?

20 4. Describe the conditions of life in a loyalist settlement in the early days of Upper Canadian history.

10 5. What is meant by "responsible government"?
10 How was it gained in Canada?

Value.

12 6. Write a brief description of political and social conditions in British Columbia before 1871.

8 Why did British Columbia enter the Dominion?

15 7. Why are the years 1896–1912 known as the "Era of Prosperity"?

5 Discuss immigration as a cause or a result of this prosperity.

20 8. "The great problem of Canada is the problem of unity." Is this a just statement? Explain.

20 9. Describe ten important inventions that have changed the lives of Canadians during the past one hundred years. (NOTE.—These inventions need not necessarily have originated in Canada.)

LATIN AUTHORS. (Time, 3 hours.)

10 1. Translate:—

Summa enim sunt omnia, Quirites, sed ea magis ex aliorum contentione quam ipsa per sese cognosci atque intellegi possunt. Quem enim possumus imperatorem ullo in numero putare cuius in exercitu centuriatus veneant atque venierint? Quid hunc hominem magnum aut amplum de re publica cogitare qui pecuniam ex aerario depromptam ad bellum administrandum aut propter cupiditatem provinciae magistratibus diviserit aut propter avaritiam Romae in quaestu reliquerit?

(*a.*) Explain the derivation and the syntax of *veneant;* the meaning of *centuriatus.*

(*b.*) How were the following years significant in Cicero's life: B.C. 70, 63, 58, 49?

10 2. Translate:—

Quae civitas umquam fuit antea, non dico Atheniensium quae satis late quondam mare tenuisse dicitur, non Carthaginiensium qui permultum classe ac maritimis rebus valuerunt, non Rhodiorum quorum usque ad nostram memoriam disciplina navalis et gloria permansit, quae civitas, inquam, antea tam tenuis aut tam parvola fuit quae non portus suos et agros et aliquam partem regionis atque orae maritimae per se ipsa defenderet?

(*a.*) Where were Athens, Carthage, and Rhodes?

(*b.*) Write short notes on *Hortensius, publicani, ordines, vectigalia, provincia.*

10 3. Translate:—

Quae cum ita sint, C. Manili, primum istam tuam et legem et voluntatem et sententiam laudo vehementissimeque comprobo; deinde te hortor ut auctore populo Romano maneas in sententia neve cuiusquam vim aut minas pertimescas. Primum in te satis esse animi perseverantiaeque arbitror; deinde, cum tantam multitudinem tanto cum studio adesse videamus quantam iterum nunc in eodem homine praeficiendo videmus, quid est quod aut de re aut de perficiendi facultate dubitemus?

(*a.*) Explain the reference in *legem, multitudinem, iterum nunc.*

(*b.*) Account for the mood of *pertimescas, dubitemus;* the case of *animi.*

10 4. Translate:—

Hinc nescio qua dulcedine laetae
progeniem nidosque fovent, hinc arte recentes
excudunt ceras et mella tenacia fingunt.
Hinc ubi iam emissum caveis ad sidera caeli
nare per aestatem liquidam suspexeris agmen
obscuramque trahi vento mirabere nubem,
contemplator: aquas dulces et frondea semper
tecta petunt. Huc tu iussos asperge sapores,
trita melisphylla et cerinthae ignobile gramen.

Value.

(*a.*) Comment on the use of *nescio*, the form of *contemplator*. Why is *mirabere* used rather than *miraberis?*

(*b.*) Show the poetical value of the words *excudunt, frondea, tecta.*

10 5. Translate:—

Atque equidem, extremo ni iam sub fine laborum
vela traham et terris festinem advertere proram,
forsitan et, pingues hortos quae cura colendi
ornaret, canerem, biferique rosaria Paesti,
quoque modo potis gauderent intuba rivis
et virides apio ripae, tortusque per herbam
cresceret in ventrem cucumis; nec sera comantem
narcissum aut flexi tacuissem vimen acanthi
pallentesque hederas et amantes litora myrtos.

(*a.*) Scan the second line.

(*b.*) Explain the case of *sera.*

(*c.*) How would the general idea in the first two lines be expressed in prose?

10 6. Translate:—

Hic tibi, nate, prius vinclis capiendus, ut omnem
expediat morbi causam, eventusque secundet.
Nam sine vi non ulla dabit praecepta, neque illum
orando flectes; vim duram et vincula capto
tende; doli circum haec demum frangentur inanes.
Ipsa ego te, medios cum sol accenderit aestus,
cum sitiunt herbae et pecori iam gratior umbra est,
in secreta senis ducam, quo fessus ab undis
se recipit, facile ut somno aggrediare iacentem.

(*a.*) Explain the reference in *hic, nate, morbi.*

(*b.*) Scan the second line.

(*c.*) What part does this episode play in the poem?

5 7. Translate:—

Illo Vergilium me tempore dulcis alebat
Parthenope studiis florentem ignobilis oti,
carmina qui lusi pastorum, audaxque iuventa,
Tityre, te patulae cecini sub tegmine fagi.

(*a.*) Explain the references in *illo tempore* and in the last line.

10 8. Translate:—

Interea magno misceri murmure caelum
incipit, insequitur commixta grandine nimbus:
et Tyrii comites passim et Troiana iuventus
Dardaniusque nepos Veneris diversa per agros
tecta metu petiere; ruunt de montibus amnes.
Speluncam Dido dux et Troianus eandem
deveniunt. Prima et Tellus et pronuba Iuno
dant signum: fulsere ignes et conscius aether
conubiis, summoque ulularunt vertice Nymphae.

(*a.*) Explain the references in *Tyrii, Dardanius nepos Veneris.*

(*b.*) Why is *et* placed after *dux* in the sixth line?

10 9. Translate:—

At vero Aeneas aspectu obmutuit amens,
arrectaeque horrore comae, et vox faucibus haesit.
Ardet abire fuga dulcesque relinquere terras,

Value.

attonitus tanto monitu imperioque deorum.
Heu quid agat? quo nunc reginam ambire furentem
audeat affatu? quae prima exordia sumat?
atque animum nunc huc celerem, nunc dividit illuc,
in partesque rapit varias perque omnia versat.

(*a.*) Scan the first two lines.

(*b.*) Explain the reference in *aspectu.*

(*c.*) In what sense would Vergil have said that Aeneas was *pius?*

10 10. Translate:—

'En quid ago? rursusne procos irrisa priores
experiar, Nomadumque petam conubia supplex,
quos ego sim totiens iam dedignata maritos?
Iliacas igitur classes atque ultima Teucrum
iussa sequar? quiane auxilio iuvat ante levatos
et bene apud memores veteris stat gratia facti?
quis me autem, fac velle, sinet ratibusve superbis
invisam accipiet? nescis heu, perdita, necdum
Laomedonteae sentis periuria gentis?'

(*a.*) Explain the references in *veteris facti, Laomedonteae periuria gentis.*

5 11. Translate:—

Illa graves oculos conata attollere rursus
deficit; infixum stridit sub pectore vulnus.
Ter sese attollens cubitoque annixa levavit,
ter revoluta toro est oculisque errantibus alto
quaesivit caelo lucem ingemuitque reperta.

(*a.*) Explain the case of *reperta.*

(*b.*) Give the dates of Vergil's birth and death and of the composition of his major poems.

LATIN PROSE COMPOSITION, SIGHT TRANSLATION, AND ROMAN HISTORY. (Time, 3 hours.)

A. LATIN PROSE COMPOSITION.

50 Translate into Latin:—

(*a.*) I am envied, but you are despised.

(*b.*) After he had made this promise he threatened to undo (*infectum reddere*) everything that we had done.

(*c.*) Both you and your brother, he replied, were in good health.

(*d.*) You cannot, said he, injure your country without bringing loss and ruin upon yourself and your own affairs.

(*e.*) Why were you the first to persuade Antony and the others to go, and were the last to go yourself?

(*f.*) The Senate and Roman people passed a resolution that Cicero defend the country.

(*g.*) Don't suppose that I would not have come and don't say that I refused.

(*h.*) Caesar's transports were prevented by winds and waves from crossing immediately to Britain.

(*i.*) I could wish that you had said less and done more.

(*j.*) If pleasing the bystanders is the same as winning, why did Sulpicius neglect this?

B. SIGHT TRANSLATION.

Value.

35 Tres pueri ad ludum[1] ventitabant. Ludi autem magister eos multa et utilia docere voluit: curam enim adhibebat non modo ut Latine et Graece loquerentur, sed et ea quae geometrae et mathematici scripsissent intellegerent. At, cum tres menses haec didicissent, ludi magister experiri voluit, utrum ea quae docuisset in memoria retinerent necne. "Dic mihi," inquit ille, "orbisne terrarum circum solem an sol circum orbem terrarum volvitur?" Pueri autem quid responderent nesciebant: primus igitur respondit orbem terrarum circum solem moveri, secundus autem rem contrarie dispositam esse affirmavit. Sed tertius in diversas partes distractus, "Uno die," inquit, "sol circum orbem terrarum, altero orbis terrarum circum solem movetur."

[1] *ludus*=school.

C. ROMAN HISTORY.

15 Answer any *three* of the following:—

(1.) Write a note on *animism.*

(2.) Give an account of the destruction of Carthage, and state the reasons Rome had for desiring the elimination of that city, and the schemes she used for securing a pretext for the accomplishment of the object.

(3.) Write a short history of Sulla's campaign in Greece.

(4.) What were the causes and effects of the introduction of slave labour in the cultivation of larger Roman estates?

PHYSICS. (Time, 3 hours.)

[*Answer question* one *and any* eight *of the remainder.*]

1. A loaded elevator weighing 2,500 pounds starts upward with an acceleration of 4 feet per second per second. If this force could be maintained uniformly, find:—

2 (*a.*) the distance it would ascend in 3 seconds from rest,

2 (*b.*) the velocity at the end of 3 seconds,

6 (*c.*) the total pull in the cable,

4 (*d.*) the work done,

6 (*e.*) the power at the end of the 3 seconds.

5 2. (*a.*) Calculate the air pressure in grams per square centimetre and pounds per square inch when the barometer stands at 30 inches.

5 (*b.*) State what is meant by capillarity and show why the surface of water in a glass vessel is elevated at the side of the vessel while it is lowered in the case of mercury.

5 3. (*a.*) Describe an experiment to verify Boyle's Law. Give reasonable observations for two settings of the apparatus and show how they confirm the law.

5 (*b.*) Show how the kinetic theory of gases gives an explanation of Boyle's Law.

5 4. (*a.*) State the laws of transverse vibrations of a stretched string. A certain stretched wire gives 100 vibrations per second. What will be the frequency of another wire of the same material but with twice the diameter, one-third the length and five times the tension of the first?

5 (*b.*) An open organ pipe is 6 feet long. Find its pitch approximately. How will this pitch be affected by changes in temperature and in barometer pressure in the air? What overtones may be present in the note?

Value.

5 5. (*a.*) Describe, briefly, an experiment to find the velocity of sound in glass or in metal by Kundt's method, giving some idea of the actual results obtained.

5 (*b.*) The weight of a litre of air at standard temperature and pressure is 1.29 grams. Find the weight of a cubic metre of air at 20° C. and 80 cm. pressure.

5 6. (*a.*) A locomotive whose efficiency is 7 per cent. is developing on the average 400 horse-power. Find its fuel consumption per hour if the coal furnishes 14,000 B.T.U.'s of heat per pound. (Take 778 for mechanical equivalent.)

5 (*b.*) Define the terms, relative humidity, critical temperature and pressure, convection currents, and boiling-point.

5 7. (*a.*) Describe, with the aid of a suitable diagram, a method of finding the velocity of light. What is this velocity in air?

5 (*b.*) Draw a diagram showing the arrangement of the lenses and the formation of the images in a telescope *or* a compound microscope.
What is meant by the term magnifying power in the instrument chosen?

6 8. (*a.*) An object is placed 30 cm. in front of a spherical mirror and its image is found to be 20 cm. behind the mirror. Find, from the formula, the focal length of the mirror and whether it is convex or concave. Then draw a diagram, roughly to scale, showing object, mirror, and formation of the image.

4 (*b.*) What are complementary colours? Show the difference in the result of adding two illuminations of complementary colours and mixing two pigments of the same two colours.

10 9. What is meant by: —
(*a.*) dielectric constant,
(*b.*) counter-electromotive force in a motor,
(*c.*) polarization of an electric cell,
(*d.*) x-rays,
(*e.*) radioactivity?

5 10. (*a.*) What weight of copper would be deposited in an hour by a current of 10 amperes between copper electrodes in a solution of copper sulphate? Draw a diagram showing the directions of current and ions and naming the electrodes. (Use symbols for any quantity involved if the numerical value cannot be recalled.)

5 (*b.*) A 60-watt, 110-volt lamp is immersed in 500 grams of water at 10° C. and the current is turned on for 30 minutes. Find the final temperature of the water and the cost of the electricity used at 5 cents per kilowatt-hour.

TRIGONOMETRY. (Time, 3 hours.)

[NOTE.—*Sufficient data are appended in the table.*]

15 1. (*a.*) Find, without tables, the *exact* numerical value of

$$\cos^2 30° - 2\tan 135° + \frac{3}{4}\sin 90°.$$

(*b.*) If A is acute and cosec A $= \frac{17}{15}$, find tan A and sin 2A.

(*c.*) Express 51° 20′ in radian measure. (Use $\pi = 3.1416$.)

10 2. (*a.*) If $3\tan A + \cot A = 5\operatorname{cosec} A$, find A.

(*b.*) Prove $\cos(180 + A) = -\cos A$.

Value.

12 3. Prove any *two* of the following :—

(*a.*) $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} = 2R.$

(*b.*) $\sin \frac{C}{2} = \sqrt{\frac{(s-a)(s-b)}{ab}}.$

(*c*) $\sin (A+B) = \sin A \cos B + \cos A \sin B.$

15 4. (*a.*) Prove $\frac{\sin 10^\circ + \sin 26^\circ}{\cos 10^\circ + \cos 26^\circ} = \cot 72^\circ.$

(*b.*) Draw *neatly* the graph of $\sin x$ from $x = 0^\circ$ up to $x = 360^\circ$.

(*c.*) If r is the radius of the inscribed circle of a triangle, prove $\triangle = rs$.

16 5. (*a.*) The string of a kite is 200 ft. long and makes an angle of 28° 25′ with the ground. How high (to the nearest foot) is the kite above the ground if the string is assumed to be straight?

(*b.*) At a certain point the angle of elevation of a mountain peak is 15° 49′, and at a distance 4,000 yds. farther away in the same horizontal plane the angle of elevation is 12° 36′. Find the height of the peak.

14 6. Given $a = 81$, $b = 63$, $c = 36$, use the formula in 3 (*b*) and logarithms to find C.

18 7. Given $A = 12^\circ\ 36'$, $b = 10$, $a = 8$, solve the triangle.

Angle	sin	cos	tan	cot	log sin
3° 13′	.0561	.9984	.0562	17.7934	$\bar{2}.74906$
12° 36′	.2181	.9759	.2235	4.4737	$\bar{1}.33888$
15° 49′	.2726	.9621	.2833	3.5300	$\bar{1}.43546$
28° 25′	.4759	.8795	.5411	1.8482	$\bar{1}.67777$

Number	log (mantissa only)
9	.95424
27	.43136
63	.79934
81	.90849
175	.24304
206	.31387

Third-year Course, Commercial.

ACCOUNTANCY PRACTICE. (Time, 3½ hours.)

[NOTE TO PRESIDING EXAMINER.—*Please provide candidates with Journal and Ledger paper.*]

James Morris and Henry Wallace enter into partnership, sharing equally, on January 1, 1926.

James Morris invests Warehouse property, $12,400, on which there is a Mortgage of $5,000 with interest accrued, $175; Warehouse Fixtures, $900 less depreciation 5%; Office Fixtures, $600 less depreciation 3%; Bills Receivable, $2,500; Accounts Receivable, $5,700; Interest accrued on Bills Receivable, $120; Cash on Deposit, $2,000; Mdse. on hand, $3,000.

He owes on personal accounts, $4,560; on Bills Payable, $3,900, and Interest thereon, $110.

Allow 10% off Bills and Accounts Receivable for possible bad debts.

Henry Wallace invests 80 shares Molson's Bank Stock valued at $125 per share; A half-yearly dividend on these shares, due but not paid, $400; Cash to make his investment equal to that of James Morris.

On June 30, 1926, the records show: Goods purchased on account, $18,000; Purchases returned, $375; Discounts allowed on purchases, $1,100; Goods sold on account, $22,000; Sales returned by customers, $500; Discounts allowed to customers, $1,500; Accounts Receivable paid in cash, $6,800; Accounts Receivable settled by customer's acceptances, $9,500; Bills Receivable paid in cash, $9,200; Accounts Payable settled by cash payment, $11,000; Accounts Payable settled by drafts, $6,000; Bills Payable paid in cash, $7,000; Sold for cash 30 shares Molson's Bank Stock at $130 per share; Delivery Truck bought for cash, $1,200; Received cash for dividend due on Molson's Bank Stock, $400; Received cash for Interest, $150; Paid cash for Interest, $225; Paid cash for Insurance, $250; Paid cash for Wages, $1,500; Paid cash for Freight Inward, $265; Two accounts amounting to $1,300 paid only 60c. on the dollar, the proceeds being received in cash; Paid for Office Supplies, $275; Water and Light paid in cash, $250.

Value.

16 1. (*a.*) Make Journal Entries for these items. (Explanations not required.)

16 (*b.*) Open Ledger Accounts and post the Journal.

8 (*c.*) Make a Trial Balance.

32 (*d.*) Using the Journal Method, close these books and prepare a Statement of Assets and Liabilities. The Inventories are as follows: Mdse. unsold, $5,200; Insurance unexpired, $180; Office Supplies on hand, $175; Depreciation at 5% on Warehouse and Office Fixtures and Delivery Truck; Allow 5% off Accounts and Bills Receivable for possible bad debts. Interest accrued on Mortgage, $325.

The business is now to be taken over by The Morris Trading Co., Limited, which has an authorized capital of $50,000 divided into shares of $100 each. James Morris and Henry Wallace are to receive $5,000 for Good-will. They are to be paid for their interest in the business with fully paid-up shares in the new Company, any surplus over these amounts being placed to their credit.

The other shareholders are J. Robb, W. Mills, R. Davis, and S. Harvie, who each take 30 shares, 25% of which they pay in cash.

17 2. (*a.*) In the books of The Morris Trading Co., Limited, what are the Journal Entries for its organization; and what are the Journal Entries for the first payment on the shares of the new stockholders?

11 (*b.*) Give Journal Entries for closing the Partner's Accounts in the old books.

ACCOUNTANCY THEORY. (Time, 2 hours.)

[NOTE TO THE PRESIDING EXAMINER.—*No other paper than the Examination Books is necessary.*]

Value.

5 1. (*a.*) What is a "Synoptic Journal"?

5 (*b.*) State the advantages and disadvantages of its use.

10 (*c.*) Rule up a form for the Synoptic and make a sufficient number of entries in it to have at least one amount in each column.

15 2. Explain and illustrate the use of the following accounts: Accrued Assets; Deferred Charges; Reserve for Depreciation.

10 3. Describe what you consider the most advantageous way of recording sales of merchandise in a Wholesale business.

20 4. What is the Imprest System of dealing with Petty Cash? Draw up a Petty Cash sheet and enter a number of illustrative items. Explain its operation fully.

20 5. What accounts are usually placed under each of the following headings:—

Current Assets;
Fixed Assets;
Deferred Charges to Operation;
Current Liabilities;
Operating Income or Trading;
Operating Expense;
Non-operating Income or Financial Income;
Non-operating Expense?

15 6. What is the difference between:—

(*a.*) A Capital Expenditure and a Revenue Expenditure;

(*b.*) A Reserve and a Reserve Fund;

(*c.*) Cumulative Preferred Stock and Common Stock?

ARITHMETIC, RAPID CALCULATION. (Time, 30 minutes.)

Paper A.

[NOTE.—*Candidates are to be supplied with working paper, but answers must be handed in on the actual examination paper. At the end of 30 minutes the answers to this section will be collected and the paper of general questions distributed to the candidates.*]

10 1. Complete Trial Balance, supplying amount of Capital:—

Cash	16,200	
Acc. Rec.	20,400	
Notes Rec.	5,200	
Acc. Pay.		15,800
Notes Pay.		12,250
Mdse. Inv.	30,500	
Purchases	120,960	
Sales		144,440
Real Estate	5,000	
Building	18,000	
Res. Depn. Bldg.		1,000
Off. Furn.	600	
Res. Depn. O. Furn.		120

Value.

Delivery Equip.	2,000	
Res. Depn. Del. Equip.		500
Sales Salaries	1,500	
Off. Salaries	2,200	
Taxes	250	
Off. Supplies	200	
Ware. „	350	
Gen. Expense	860	
Purch. Disct.		1,500
Sales „	1,200	
Int. Paid	350	
Int. Earned		260
Exchange	100	
Capital		.....

10 2.

VANCOUVER, B.C.,
June 5, 1927.

Mr. A. C. Ayres.
Terms: 30 days. Bought of MASON & Co.

39 bbls. Sugar, ea. 200 lbs. net @ 5½c				
40 cans Lard, ea. 12½ lbs. @ 15c				
44 boxes Prunes, ea. 25 lbs. @ 12½c				
12 Hams, total of 150 lbs. @ 17½c				
3 doz. tins Chicken, per tin 8c				

Give extensions and total.

10 3. Check over the following to the nearest cent:—

120 H.S. Geometry @ $1.80 less 40 and 25 off	97	20
45 Dom. H.S. Arith. @ $1.60 less 20 and 25 off	41	19
60 Cash Book @ $4.00 less 25 and 10 off	163	00
25 M. L.L. Sheets @ $12.00 per M. less 12½ and 10 off	235	27
Casing	4	50
	530	16

10 4. A Customer,
City.

1927						1927					
May	1	2/10 : n/30	S	a 120	00	May	11	Cash	C	a 100	00
	11	2/10 : n/30	S	b 80	00		21	„	C	b 80	00
	21	2/10 : n/30	S	c 100	00		23	Return	J	c 10	00

Above account is paid in full May 31 by check. State amount of check and complete posting and close account.

Value.

20 5. Find to the nearest cent the interest on:—

$97.00 for 63 days at 5% per annum	$.....
16.20 for 37 days at 7% per annum	.....
119.25 for 12 days at 5½% per annum	.....
260.00 for 142 days at 4% per annum	.....
180.11 for 41 days at 4¾% per annum	.....
Total	$.....

20 6.

	1	2	3	4	5	6	8	9	10	11	12	13	Total hrs.	Rate per hr.	Amt.
A. Brown	8	8	8	8	8	4	8	8	8	8	8	4		.80	
C. Dane	8	7	8	8	8	4	....	8	8	8	8	4		.70	
E. Forbes	4	8	8	8	8	4	6	8	8	8	8	4		.60	
G. Hare	8	....	....	4	8	4	8	8	8	8	8	4		.50	
I. Jones	....	....	....	8	8	4	8	8	6	4	8	4		.50	
K. Lawson	8	6	4	....	8	4	8	8	8	8	8	4		.50	
M. Nixon	8	8	4	....	4	4	8	7	....	4	8	4		.50	
O. Peters	8	8	8	8	8	4	2	4	4	8	6	2		.50	
Q. Ross	....	1½	8	8	8	4	8	8	8	4	....	....		.50	
S. Thomas	4	4	4	4	2½	2½	....	....	....	....	....	....		.50	
Total hours															

Complete the above time sheet and make out the wages for the two weeks.

10 7. Divide 981)1234567899(

10 8. Find sum of:—

16⅔% of $9.60=
66⅔% of $4.20=
3⅓ × $12.60=
1⅔ × $1.38=
30 × 8 × 12½c.=

ARITHMETIC, GENERAL. (Time, 2½ hours.)

Paper B.

[NOTE.—*Time allowed for both papers in Arithmetic is 3 hours; after the expiration of 30 minutes, answers to Section A (Rapid Calculation) will be collected, and Section B (General) will be distributed to candidates.*]

[TO CANDIDATES.—*Each question is valued at 10 marks.*]

1. A commission agent sells a car-load of apples, 1,000 boxes, 40 lbs. each, at 1¾c. a lb. After deducting commission at 2½% and paying freight and other expenses, $32.50, he sends check to the producer for the balance. If the producer pays exchange on the check of ⅛ of 1%, what amount does he actually receive for the apples?

2. What will it cost in Canadian currency to pay an English invoice of £95 subject to cash discount of 2% if the £ is quoted at $4.85 and brokerage is ⅛%?

3. Find the compound interest on $60.75 for 5½ years at 6% compounded annually.

4. A draft for $210 drawn 30 days after date and bearing interest at 7% per annum is discounted 12 days before maturity at 6% per annum. What are the proceeds to the nearest cent?

5. A buys a house and lot for $5,000 (house $4,000, lot $1,000) and rents it at $42 a month. The taxes per year are 30 mills on the land assessed at $900, and 30 mills on half of

improvements assessed at $3,800; depreciation on building is 2½% per annum, repairs to building are ⅝ of 1%. What net income does the owner receive per year and what per cent. is this on his investment?

6. A demand note for $500 dated May 1, 1927, and bearing interest at 6% per annum has following payments endorsed: June 2, 1927, $200; June 15, 1927, $200. How much will be due July 15, 1927?

7. A, B, and C are partners and Jan. 1 their respective investments were $5,000; $3,000; $2,000. On July 1 A made a further investment of $2,000 and on Oct. 1 he withdrew $4,000. On Aug. 1 B withdrew $1,000 and on Sept. 1 he invested a further $3,000. C on March 1 invested a further $2,000 and on Sept. 1 a further $1,000. Divide among them a net profit of $1,200 according to their average monthly investment.

8. A Joint Stock Co., Limited, is capitalized at $50,000—6% cumulative preferred stock and $150,000 common stock. At the end of their financial year the net profit is $9,500. The preferred dividend was not paid last year and the directors decide now to pay the two years' preferred dividend and to pay a dividend on the common stock after setting aside a Reserve Fund of $500. What per cent. dividend will this allow on the common stock? What cash dividend will be received by a shareholder who owns $5,000 preferred stock and $25,000 common stock?

9. What is the present worth of an annuity of $1,200, deferred five years and continuing for six years, money being worth 6 per cent.?

10. What is the circumference of a circle whose area is 5,544 sq. ft.?
$(1.06)^5 = 1.3382$; $(1.06)^6 = 1.4185$.

BUSINESS CORRESPONDENCE. (Time, 2 hours.)

[*Candidates may use pen and ink or typewriter, and in questions 1 and 2 must show the addressed envelopes.*]

1. You are "Credit Man" in the wholesale grocery establishment of Wilson & Ryan, Vancouver, B.C. Your firm has received a request for credit from Frank H. Moore, Nanaimo, B.C., formerly carrying on business at Weston, Ont. Mr. Moore gives you, as one of his references, the name of Eby, Blain & Co., wholesale grocers, Toronto, Ont.

Value.	
10	(*a.*) Write a letter to this firm asking for the information you think necessary in the case.
10	(*b.*) Draft Eby, Blain & Co.'s favourable reply to your inquiry.
10	2. (*a.*) Give a summary of the elements that should be incorporated in a series of Collection Letters.
4	(*b.*) State the main difference between a sales letter and a collection letter.
10	(*c.*) Write the second letter to a delinquent debtor, who has, heretofore, been a valued customer, and whose patronage you wish, if possible, to retain.
8	(*d.*) This debtor has not responded in any way to your letter. Outline the steps you would take until you secure payment.
4	3. (*a.*) The majority of customers' complaints are said to fall into four classes. Give a title for each class.
8	(*b.*) State briefly the best plan of answering each of these complaints.
6	(*c.*) Mention three elements that should enter into the answer to customers' complaint letters.
10	4. (*a.*) Describe fully, using carefully drawn illustrations, The Direct Name System of filing.
5	(*b.*) In what cases is Geographical Filing the most suitable system?

Value.

5 5. (*a.*) Give a brief description of the Shannon System of Filing.

5 (*b.*) For what purposes is its use suitable?

5 (*c.*) What are its defects as an up-to-date system of filing in a large office?

COMMERCIAL GEOGRAPHY. (Time, 2 hours.)

25 1. Draw an outline map of British Columbia, indicating thereon the following:—

(*a.*) Puget Sound, Howe Sound, Burrard Inlet, Cousins Inlet, Swanson Bay.

(*b.*) Fraser, N. and S. Thompson, Columbia, Kootenay, Nass, Similkameen, Okanagan, Skeena, and Peace Rivers.

(*c.*) Okanagan, Arrow, Kootenay, and Nitinat Lakes.

(*d.*) Peace River Block.

(*e.*) Canadian Pacific, Canadian National, and Pacific Great Eastern Railways.

(*f.*) Leading centres of the following industries: Lumbering, Mining, Fishing, Dairy-farming, Fruit-growing, Pulp and paper manufacturing.

(*g.*) Hydro-electric power plants.

5 2. "The Peace River district will become the granary of North America." Discuss this statement fully from a commercial standpoint.

10 3. Compare Vancouver and Seattle under the following heads: (*a*) geographical situation; (*b*) population; (*c*) industries; (*d*) commerce; (*e*) future possibilities.

10 4. Give a short description of Canada's trade with: (*a*) Great Britain; (*b*) United States; (*c*) the British Empire; (*d*) South America; (*e*) China.

15 5. On an outline map of South America show the following:—

(*a.*) Seven chief political divisions.

(*b.*) The three great Highlands.

(*c.*) The three principal river systems.

(*d.*) The districts devoted to the production of wheat, coffee, sugar, rubber, nitrate of soda, tin, copper, flax, emeralds, cattle-ranching.

(*e.*) Exact position of the two largest cities.

15 6. (*a.*) Where are the chief iron-mining regions of North America?

(*b.*) Name six industrial centres where iron and steel are made.

(*c.*) Compare the United States with Great Britain in the iron and steel industries for world trade.

10 7. (*a.*) Name the chief oil-producing areas in North America.

(*b.*) Locate the other great oilfields of the world, and indicate their best markets.

10 8. Compare Belgium with Switzerland under the following: (*a*) geographical situation; (*b*) physical features; (*c*) manufactures; (*d*) commerce; (*e*) tourist trade.

COMMERCIAL LAW. (Time, 2 hours.)

5 1. How does the Bills of Exchange Act define a bill? Which of the following will conform with your definition?

2 (*a.*) A promise to pay Robert Smith $325 "and also all other sums which may be due him."

2 (*b.*) An order to pay the proceeds of a shipment of goods "value about $10,000."

2 (*c.*) A promise to pay $500 "in equal monthly instalments of $100, the first instalment to become due on the 1st of August, 1927."

Value.

2 (*d.*) An order to pay $1,000, "and deduct same from moneys coming due to me on account of Mrs. Wilson's residence."

2 (*e.*) A promise to pay "in merchantable timber, etc. If not so paid within the time, then the same is to be paid in cash."

20 2. Comment on the following, so as to show that you understand the legal points involved:—

(*a.*) Ellison was surety upon a note for Adams. After the note became due, the maker of the note called at the bank where it was payable and procured from the holder an extension of payment for 30 days. How does the extension operate so as to affect the surety?

(*b.*) Thackeray, Webster, and Scott were engaged in the insurance and collection business. Webster, one of the partners, purchased lumber in the name of the firm, to repair houses of which they had charge, and gave a note with the firm's name on it. Will the other partners be bound by this note?

(*c.*) Travis authorized his agent to purchase a certain house and lot for him for $10,000. The agent bought the property for $8,500, and then sold it to his principal for $10,000. Afterwards Travis was informed of the facts in the case. Did he have any remedy against the agent?

(*d.*) Blight, a fruit-grower, made an oral agreement to deliver to Young & Co. his entire apple-crop for two successive seasons. The crop was delivered the first season according to agreement, but the second season, Blight, for reasons best known to himself, refused to deliver any of his crop. Can Young & Co. recover damages for breach of agreement?

(*e.*) Defendant owed plaintiff a sum of money which was admitted by the former to be $100. Plaintiff agreed orally to accept $80 in payment of the debt, and this amount was paid to him. He thereafter brought suit to recover the remaining $20. Can he succeed?

10 3. Discuss Chattel Mortgages under the following heads: (*a*) registration; (*b*) removal of mortgaged goods; (*c*) causes for taking possession of mortgaged goods; (*d*) assignment of mortgage; (*e*) Statute of Limitations.

15 4. Vancouver, B.C., January 12, 1927.

Three months after date I promise to pay to the order of W. W. Williams, Five hundred Dollars ($500) at the Royal Bank here, value received, with interest at 8% until paid.

JAMES ROBINSON,
ARTHUR SWANSON, *Surety.*

On the back of the above note are the following names in order:—

W. W. WILLIAMS.

For value received I hereby guarantee payment of the within note.

N. SUMNER.

Protest and notice of protest waived.

JAS. SPRING.

Pay to Geo. Alcock without recourse.

SAM ROSS.

Pay Thos. Simpson only.

GEO. ALCOCK.

This note is in the hands of Simpson as holder.

(*a.*) What kind of a note is it?

(*b.*) When is the due date, and how much is then due?

(*c.*) What is the contract of each of the endorsers?

(*d.*) Where should the note be presented for payment?

Value.

(*e.*) To whom should notice of protest be sent, and what information should then be given.

(*f.*) If the note is finally paid May 15, 1927, how much was required to settle it, including $5 protest fees?

20 5. (*a.*) When should the contract between employer and employee be in writing?

(*b.*) What is a reasonable notice of discharge of employee?

(*c.*) When may the employee be discharged without notice?

(*d.*) What is the employee's remedy in case of wrongful dismissal?

(*e.*) For what acts of the servant is the master liable generally?

(*f.*) Can employees be compelled to work on Sundays and legal holidays?

20 6. (*a.*) Explain the steps to be taken in the formation of a Joint Stock Company under the B.C. Companies Act.

(*b.*) What is a Prospectus, and what information should it contain?

(*c.*) Name five advantages of incorporation over a partnership form of organization.

SHORTHAND DICTATION.

[NOTE TO PRESIDING EXAMINER.—*Candidates are to be provided with* plain *white letter paper, or books, for transcripts, and with Stenographic note-books for taking down notes. Notes may be taken with either pen or pencil and transcripts may be either pen-written or typewritten. The material should be given to the Dictator fifteen minutes before he is required to dictate so that he may prepare the timing of his dictation.*]

[NOTE TO DICTATOR.—*The dictation must be at uniform rate of speed with close attention to the quarter-minute marks on the copy and with watch in hand. The matter must* not *be read to the candidates prior to their actual note-taking. Allow three minutes' rest after dictating each section. Candidates will hand in transcripts of the three pieces—A, B, C. They must attach their shorthand notes to each piece, and should see that their examination number is on each loose sheet. Each piece should be transcribed on a separate sheet, and may be either typewritten or pen-written.*]

"A."

(Arranged for dictation at 80 words per minute. Syllabic intensity 1.5.)

One morning not long ago I was afforded the opportunity of seeing more of Victoria and the coun | try around than is usually given to a visitor in several days. A friend suggested that I go with | him in his car to see for myself some of the beauty spots surrounding this island city. Eager to view the scenic | attractions possessed by this much-praised island, I accepted the invitation.

In bright sunshine we passed through the city and | out upon the north road, past well-kept farms and gardens to where the virgin forest stands. Entering this realm we soon found our | selves climbing a winding road which grew steeper as we ascended. Past stately pine trees towering above our heads, with glimpses | of water and mountain ranges seen through the enormous trees, we reached the top of what proved to be a miniature moun | tain. Here stood a vast dome-shaped building, dazzling white—the celebrated observatory, which houses the second largest tel | escope in the world.

Coming out into the open again, I was thrilled at the grandeur of the view before me. From an | altitude of seven hundred and twenty feet above sea-level, we looked over the tops of forest giants, upon | the beautiful setting of Prospect Lake, with its artistic summer homes dotted about the lake-shore, backed by the prime | val forest. The lake, a sheet of placid water, reflected in its clear depths the snowy whiteness of swift-moving clouds. | Turning away from this scene of beauty, another view greeted my gaze: Mount Douglas, Elk Lake, and the Straits of Georgia, | all of which could be absorbed in one grand view.

Unwillingly I moved away. My guide was anxious to show me more. Leaving | this realm of Nature and Science, we wound a perilous way down to the north road once more, and sped through leafy glades to where | the famous gardens stand. The sunken gardens are truly wonderful. I looked down upon the flowers and shrubs so carefull | y planted between the rocks, the green grass growing like a carpet around the flower-beds, and I thought of the land of the | fairies wherein the sprites and elves make merry.

Three miles away we reached the Mill Bay Ferry. Here the car was stowed on board and with | several others we crossed the waters of the inlet to another landing at the foot of the mountain. It took about for | ty-five minutes to cross the six miles of water, and throughout the journey one was lost in admiration of the scene.

"B."

(Arranged for dictation at 100 words per minute. Syllabic intensity 1.5.)

The present year is Canada's Diamond Jubilee and plans and arrangements are being made for the appropriate celebration of the happy | anniversary. The occasion is one for thanksgiving, and perhaps we may be pardoned if we indulge in a little quiet pride and congratu | lation among ourselves in looking back over the sixty years of Canada's corporate life. It is a record of steady achievement of which | no nation of ten million people need be ashamed, and no doubt the First of July, 1927, will be celebrated from one end of the Dominion to | the other in a fashion worthy of the event.

Suggestions have been made from time to time in the press and on the platform that some concerted effort | should be made to create, or at any rate to foster and develop, a vigorous and active "national consciousness." These suggestions are in | variably well meant. Usually they come from individuals who have given some serious thought to social and national problems. In | certain cases they bear the mark of the confused thinking which sometimes accompanies honest enthusiasm. At a public gathering recently a | visitor to the city expressed the opinion that the schools of the Province are not doing as much as they ought to do in the matter of fos | tering national spirit, and he advocated a more extensive study of Canadian literature with that end in view. This paper | believes that our teachers are fully alive to their opportunities in teaching civic and national duty and in inculcating patrio | tic sentiment in accordance with the very definite instructions to be found in the official programmes of study. Moreover, a glance at | the list of authorized text-books for public schools is all that is necessary to show that Canadian literature already occupies | a considerable place in the daily school-work. It is reasonable to assume that the Canadian Poetry Book, Selections from the Makers of | Canada, and Selections from the Canadian Poets should afford ample material for the inculcation of Canadian national | sentiment. An extremist might suggest that additional works by Canadian writers should take the place of Scott, Dickens, Lamb, Ruskin, and Stevenson, at present | on the programme, but such a proceeding would not meet with general approval in any province of Canada.

It is both interesting and | instructive to Canadians, young and old, to distinguish English literature produced in Canada from English literature produced | elsewhere. Such a classification no doubt has its uses, but it is of very restricted value as influencing the educator's choice | of material for a school course in English literature. Excellence of literature not geographical distribution should be the factor.

"C."

(Arranged for dictation at 120 words per minute. Syllabic intensity 1.5.)

Gentlemen of the Jury,—As this is the first case this term that you are called upon to consider and determine, not only for your benefit but for the benefit of the | other members of the panel who are in the court-room, I shall take a moment or two in calling your attention to your duties as jurors. You are the sole judges of the facts. | The court is here simply to call your attention to the law governing the case, and the mere fact that during the trial I denied motions or overruled objections interposed | to the admission of testimony must not be accepted by the jurors as any expression of opinion on my part, for I have no opinion to express.

A plaintiff who comes into court must prove his or her case by a fair margin of evidence. By that we do not necessarily mean the number of witnesses that are called. It | is the quality and not the quantity of proof that is offered, and if the jury determines that the evidence is *evenly balanced, then the plaintiff has failed to make out* | *his case, and the verdict ought* to be for the defendant.

If the jury determine that any witness has wilfully testified falsely as to any material facts, they | have a right to disregard the whole of such witness's testimony. The jury in considering the testimony of any witness should also consider the interest | that such witness may have in the result of the verdict, and should carefully weigh the testimony given by such a witness.

When you go to your jury-room, you must consider | the testimony admitted during the trial, and remove from your mind whatever impression may have been made by any expression of opinion of counsel, not borne out | by the evidence in the case, and let your verdict be the result of deliberation. Let it not be brought about by reason of sympathy for one or prejudice against | the other. The question of a man's colour, religion, or previous occupation, or the fact that the defendant is a corporation, must not be considered by the jury | in determining the facts in this case. Before the law all men are equal.

The court instructs the jury that this action is brought to recover damages for personal injuries | which the plaintiff claims by reason of the careless and negligent conduct of the defendant. There appears to be no dispute that the plaintiff received certain injuries, but the mere | fact that he received injuries is not in itself sufficient to warrant a jury in finding a verdict in his favour, for he must show, not only that he received the | injuries, but that he in nowise contributed to the result. If he in any way acted as an imprudent person would have acted under the circumstances, or if he in | the slightest degree contributed to the result, he cannot recover, and your verdict should be for the defendant.

The jury is further instructed that ordinary care | is that degree of care which persons of ordinary care and prudence are accustomed to observe under similar circumstances. Ordinary care as applied to the | defendant in this case would be such care as persons of ordinary care and prudence would exercise, having in mind the business they are conducting, and the circumstances as | disclosed by the evidence in this case.

You are further instructed that ordinary care as applied to the plaintiff would be such care as applies in ordinary circumstances.

Stenography Practice.

[To the Presiding Examiner.—*The following letters are to be dictated to the candidates once, at 80 words (syllabic intensity 1.5) per minute. To facilitate this, the selections are divided into quarter-minute sections. The punctuation-marks are not to be read, but paragraphs must be indicated. One-quarter of a minute must be allowed after reading each letter before beginning the next. After taking the dictation, candidates are to be allowed one hour for transcription on the typewriter, for addressing envelopes, and for folding and enclosing letters and carbon copies. Candidates must hand in both their typewritten letters and their shorthand notes. Please ask candidates to type their examination numbers on the top of each letter and also on the upper left-hand corners of their envelopes. Candidates should pay special attention to display and folding of letters.*]

Value.
18 1. Victoria, B.C., June 11, 1927.

Frank D. Smith, Esq.,
Prince Rupert, B.C.

Dear Sir: We are enclosing herewith, in | accordance with your recent request, one of our booklets, "How to Judge a Watch."

Value.

There has been some delay in getting out this | booklet, which will account for our not having sent it to you sooner, but we trust that it will be none the less acceptable | and that you will find it both interesting and instructive.

If there is no jeweller in your neighbourhood now handling | our watches, write us and we shall be glad to tell you where they can be obtained.

Very truly yours,

Enclosure.

(105 words.)

21 2. VANCOUVER, B.C., June 15, 1927.

Mr. T. Henry Clarkson,
Nanaimo, B.C.

My dear Sir: We desire to announce that | our Fall and Winter models are now ready for your inspection.

The new designs are specially graceful, are fashioned from the most exclusive cloths of this country and England and retail at from $25 to $65.

Our entire product is | prepared in our own work-rooms by the best tailors obtainable, and can be compared only with the very highest grade cus | tom work.

In our Furnishing Department you will find a complete assortment of the newest things in gentlemen's furnish | ings, for dress or business wear.

Looking forward with pleasure to an early call from you, we beg to remain,

Very truly | yours,

(121 words.)

32 3. VANCOUVER, B.C., June 20, 1927.

Messrs. Frank L. Rogers & Co.,
92 Second St.,
Seattle, Wash.

Gent | lemen: About three months ago our Sales Manager wrote to all users of our products, asking for certain informa | tion with a view of improving our service to the public.

Many of our customers replied, giving us valuable | suggestions that gave us an opportunity to help them.

Since then we have given a great deal of time and painstaking | attention to the general improvement of our service, but we want to improve it still further.

It is only through | the co-operation of our customers that we can know their needs and how best to provide for them.

In order that we | may know whether you are getting the service you are entitled to and which we want you to have, and in order that we | may know that our products are earning you the greatest returns on your investment, we will ask you to fill out, sign, and mail | the enclosed postal at your earliest convenience.

If there are any suggestions not covered by the card, please write us | fully.

Yours very truly,

(184 words.)

11 4. VANCOUVER, B.C., June 20, 1927.

Miss Elizabeth T. Brown,
Nelson, B.C.

Dear Madam: If you have not already | sent a renewal of your subscription, please sign the return postal attached hereto, and mail it at once, that you may be | sure not to miss the July number. You may remit the amount of the subscription, $3, at your convenience.

Yours | very truly,

(62 words.)

Value.

18 5. VANCOUVER, B.C., June 21, 1927.

Mr. James Macdonald,
Kamloops, B.C.

Dear Sir: We accept anything that looks like real money | such as checks, postal orders, currency, or stamps. The subscription price is—one year, $2; two years, $3; five years, $5. |

Your subscription has recently expired, but we can keep your files complete if you will be so good as to renew promptly. | The easiest way to subscribe is to take a five-dollar bill, pin it to this letter, and send it to us in the en | velope we are enclosing.

This is all at our risk. Try it! You will be surprised at the ease with which it can be done.

Yours | very truly,

(102 words.)

TYPEWRITING.

[TO THE PRESIDING EXAMINER.—*The Typewriting paper consists of two parts, A and B. In Part A, 900 five-stroke words are given and the candidates are to be allowed 15 minutes. In Part B, the candidates are also to be allowed 15 minutes, and as many words as possible should be written. No carbon copies are required in either Parts A or B. The work should be done in double spacing.*]

Part A.

50 When we spend an afternoon shopping at a great West End store and pass slowly from department to department, admiring if not selecting from the infinitely varied assortment of tempting wares, we seldom pause to think of the beginning of it all. We are impressed rather with its air of permanence and inevitability. To inquire into its origin and growth seems amid such dignified surroundings strangely out of place and discourteous. Yet these businesses are not one with the everlasting hills. In some cases their birth was very recent. Nor were they all ushered in with ceremony and advertising; many emerged in the most humble circumstances, just frail, diminutive children of a mighty hope, and had to struggle long against poverty and neglect. But all businesses have this in common: they are at first a venture into the unknown, entered upon with much the same hopes and fears as those of a gardener when planting a rare rose-cutting or of an explorer when starting for the Pole. What are the motives that induce men to undertake the risks and labours of a new business? Sometimes they are actuated by the desire for greater wealth or an ample income; sometimes the longing for freedom persuades them to throw up a good post; sometimes they feel the need for self-expression; sometimes the thirst for revenge impels them to make a late employer "put up his shutters"; sometimes they seek merely to educate the public. Usually their motives, like most human motives, are mixed, with the desire for gain predominant. Equally varied are the reasons deciding the nature of the business. A man may have special knowledge of customers, as when a traveller starts in opposition to his late employer. Such a "connexion" is so valuable that responsible employees have generally to undertake not to use knowledge of this kind in a new post. On the other hand, a man may have special knowledge of goods, may, indeed, seek to market his own invention; or may have special opportunities of obtaining large supplies cheaply, as was the case with "Army Surplus" firms. Now and then the ostentation of neighbours would seem to indicate abnormal profits: when the greengrocer sees the butcher in a new car, he wishes to go and do likewise. Often the choice of business is determined by special training. Just as there is fixed capital, so there is fixed labour. For the experienced printer to start as a draper would be as foolish as to expect a printing press to weave cloth. Some businesses,

however, are incomplete unless they are carried on in a certain locality. The place determines the reputation of the goods and the price at which they can be sold. The Bond Street hat is often identical with its humble Rye Lane sister except for the name inside, and the address in the Harley Street neighbourhood at once distinguishes the medical consultant from the ordinary practitioner. But high rents and improved means of transport are tending to break down this localization of retail trade; and just as manufacturers are shifting farther and farther into the country and erecting factories at convenient sites along the railway route where rates are low, so the different classes of traders are leaving their old haunts in the City, and migrating to the outskirts of the metropolis, to places within reach of the electric railways. The principal factor, however, deciding the nature of the business is the amount of cash at the individual's command. This, of course, need not be his own money. Indeed, one of the principal services rendered by those who start businesses is that they devise means whereby other people's savings, which would otherwise lie idle, may be employed to produce wealth. The sources of the business promoter's capital are manifold. In the first place, he may rely on his own money. Most small shopkeepers originally do so. He may put into the business cash that he has by him, or he may mortgage, that is, pledge, property, such as houses and land, as security for loans. To rely wholly on mortgages, however, when starting a business would put the promoter very much in the hands of the mortgagee, and it is not often done; but a very large percentage of businesses raise money later in this way. The promoter may have wealthy relatives anxious to "put him on his feet" with as little risk to themselves as possible. They are enabled to share in his enterprise without committing the whole of their possessions by the special legal provision known as limited partnership, or registered joint stock companies.

(901 five-stroke words.)

TYPEWRITING.

[*Candidates are allowed 15 minutes only for this paper. No carbon copy is required. The work should be done in double spacing.*]

Part B.

Value.

50 Business and industry are dominated by prices. They determine the whole course and pace of production and distribution. The myriad forms in which the wealth of this country is to-day expressed—food, clothing, buildings, means of transport, machinery, things useful, things beautiful—all alike are the result of the study of prices and probable prices. A consideration of prices decides on the one hand if a new enterprise can be embarked upon; on the other hand, if an old undertaking shall be allowed to languish and die, or be rejuvenated and given a new lease of life. When we are perturbed over the spending of our incomes, we may take comfort in the thought that ultimately the prices that rule business are ruled by us. They reflect all our present and probable whims and wants, fancies and fashions; and those who mould our ideas, mould prices at the same time. Demand, which is what the economist calls our spending intentions, decides prices. Business is pursued for selfish ends. Within the varying framework of demands, each kind of business must in the long run have prices sufficiently high to yield to business men a reward comparable with that obtainable from other forms of business. This average long-term price, the economist's "normal" price, tends to provide to all business men and industrialists an equal return, the same interest on capital, the same wages for services, the same profit for risk-bearing and special ability. That is the broad economic force underlying prices, groping its way like a tireless blind man. But prices from day to day are subject to a multitude of minor influences that conceal the general tendency and that result from the standpoint of the individual supplier and the individual buyer. It is these we now want to

study. Each gets as much as he thinks he can. The cost of each commodity or service is borne in mind, but cannot be allowed to decide. The seller, manufacturer, and trader alike, pockets his gain or cuts his loss. The company that has invested hundreds of thousands of dollars in factories and plant and machinery not easily convertible to other uses must be content to sell its product at a price that provides only a small margin above the cost of materials and labour, and then wait and work for better things. The bus company must cut its fares on the tram routes and increase them judiciously elsewhere. The railway must carry foreign fruit from the Coast to the Prairies more cheaply than it carries local fruit a shorter distance, or the foreign fruit would not come by rail at all. All traders are like the transport companies: they charge what the "traffic" will bear. Sometimes their hands are weakened or strengthened by the character of their goods. Ripe pears must be sold at any price; corn and coal will keep. Sometimes the value of their goods arises almost solely from that human perversity which makes us desire most what the other fellow has not got. Early strawberries selling at fifty cents a basket, and plovers' eggs, give food for thought in more senses than one. On the other hand, there is the even stronger propensity impelling us to imitate: contemplate the price of last season's "model" or of Oxford trousers when the fashion has passed. Sometimes an invention or new machine will alter in a month the whole aspect of a trade, and stocks will have to be sold at a fraction of the former prices. One point in connection with prices calls for special mention. A price is, of course, an offer to exchange a definite quantity of a certain commodity for so much money. It will, therefore, be increased if the quantity or the quality of the commodity is lowered without a corresponding change in the money, or if, when the money-figure is decreased, the quantity or quality is disproportionately lowered. Many traders and manufacturers endeavour to meet competition by altering the commodity rather than the amount of money asked for it, since an increase in the latter would be at once noted. A transport company may increase its effective price very considerably by adopting a "strap-hanging" policy, by neglecting the cleaning of its vehicles, by economizing in lighting or by using old stock. Caterers may manage to make more profit out of a five-cent cup of coffee than out of the ten-cent variety. Increased commodity taxes may be passed to the consumer, even while he is assured that they are being borne by the manufacturer, if the materials used are slightly changed. When the success of the advertising campaign for a particular preparation is certain, its cost may be wiped out by a small adjustment of machinery, so that slightly less is put into the tubes or bottles or cartons containing the product. Bakers could meet a popular demand for cheaper bread by varying the constituents of the dough. Many hard things have been written and said about trade combinations and monopolistic combines. It is sometimes forgotten that such attempts to "squeeze the market" are, after all, merely in agreement with the practice of all business and most economic activity.

(1,022 five-stroke words.)

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