

Examination Papers.

EDUCATION DEPARTMENT, ONTARIO.—JULY
EXAMINATIONS, 1885.

THIRD CLASS.

ALGEBRA.

Examiner—J. C. Gashan.

1. Simplify

$$a^2 + b^2 + c^2 - (a-b+c)(a+b-c) - (b-c+a)(b+c-a) - (c-a+b)(c+a-b).$$
2. Divide $a^4 + b^4 + c^4 - 2b^2c^2 - 2a^2c^2 - 2a^2b^2$ by $a^2 + b^2 + c^2 + 2ab$.
3. Multiply $x^n - x^{n-1} + x^{n-2} - x^{n-3} + 1$ by $x^2 + 1$.
4. Find the factors of $a^2 - b^2 + c^2 - d^2 + 2ac - 2bd$.
5. Find the factors of $(a+b)^2 - (b-c)^2 + (c+a)^2$.
6. Simplify

$$\frac{1}{x} - \frac{2}{x+c} + \frac{1}{x+2c}$$

$$\frac{1}{x} - \frac{3}{x+c} + \frac{3}{x+2c} - \frac{1}{x+3c} = \frac{x+3c}{x^2}$$

7. Find the value of x that will satisfy the equation
 $m(x-m) + n(x-n) = 2mn.$
8. Determine x given

$$4 \left\{ (x-a)(c-b) - (x-c)(x-d) \right\} = (d-c)^2 - (b-a)^2$$

9. Solve the simultaneous equations

$$\frac{1}{x} + \frac{2}{y} = 8,$$

$$x + 2y = 2y.$$

10. A drover bought 12 oxen and 20 sheep for \$1340; he afterwards bought 10 oxen and 26 sheep for an equal sum, paying \$8 each more for the oxen and \$3 each more for the sheep. What was the price per ox and what the price per sheep of the first lot?

GEOGRAPHY.

Examiner—Jas. F. White.

1. Fully explain these terms—tropic, meridian, solstice, monsoons, mean time, insular climate, longitude, inclination of the earth's axis.
2. Draw a map of South America, marking thereon the six principal cities, the three chief mountain chains, and the course of the four most important rivers.
3. Name the railroads entering Toronto and Ottawa respectively; tell about each the direction in which it runs, the important places in Ontario that it passes through, and its termini.
4. Describe a voyage from Montreal to New Orleans calling at six important places on the way.
5. Where are the following places and for what is each noted:—Odessa, Bermuda, Bordeaux, Archangel, Mauritius, Oporto, Honduras?
6. Describe one of these countries, France, China, Brazil, Arabia, under the following heads:—
 (a) Boundaries and physical features,
 (b) Animals and plants
 (c) Manufactures and commercial centres,
 (d) Civilization and government.

ENGLISH GRAMMAR.

Examine.—John Seath, B. A.

1. Describe, in your own words, the function of the adjective, explaining clearly the meaning of the terms "describing," "qualifying" and "limiting", and applying your description to the adjectives in the following:—*the man, five boys, good men, His kind father is dead.*
2. Explain in your own words the terms "Government" and "Agreement" and illustrate by reference to all the governing and agreeing words in the following:—*If need be, thou shalt see thy master's efforts to win these laurels.*

3. Rewrite the following statements, making such corrections as you consider necessary, and assigning your reasons therefor:—

- (a) When a superlative is used, the class between which the comparison is made and which is introduced by *of* should always include the thing compared: as, "Bismarck is the greatest of German statesman," or "Bismarck is the greatest German statesman."
- (b) The sign *to* should not be used for a full infinitive unless the verb in the same form can be supplied from the preceding part of the sentence: as, "you never were as you ought to be" is wrong, since it is incorrect to say "you ought to wrote."
- (c) The perfect infinitive is used when the act spoken of is regarded as completed before the time expressed by the governing verb: as, "I hoped to have gone before the meeting."
4. Distinguish the meanings of:
 (a) *If he go, I shall go* and *If he goes, I go*.
 (b) *I think so, I do think so, I am thinking so* and *I should think so*.
 (c) *He shall go, He will go, and He is about to go*.
 (d) *I knew that he speaks the truth* and *I knew that he spoke the truth*.
 (e) *Who did it?* and *Which did it?*

5. Classify and give the syntax of the italicised words in the following:

- (a) He is a fool to sit alone.
- (b) Much to my surprise he forgave them their fault.
- (c) He is too old to play the fool.
- (d) My dream last night came true.
- (e) The daughter of a hundred ears,
You are not one to be desired.

6. Classify the propositions in the following, giving their relation:—

Because half a dozen grasshoppers under a fern make the field ring with their importunate chink, while thousands of great cattle reposing beneath the shadow of the British oak, chew the cud and are silent, pray do not imagine that those who make the noise are the only inhabitants of the field—that, of course, they are many in number—or that, after all, they are other than the little, shrivelled, meagre, hopping—though loud and troublesome—insects of the hour.

7. (a) Translate into a phrase each of the following:—*sheep-dog, wood-work, railway, steamboat.*
 (b) Translate into a compound each of the following:—*as dark as coal, that can keep in water, surrounded by the sea, tearing asunder the heart.*
8. Correct any errors in the following, giving your reason in each case:
 (a) These pronouns are indeclinable and used in the singular only.
 (b) He looks like his mother does, but he talks like his father.
 (c) He was afraid he would be burned.
 (d) The references will be found useful to the junior student and enable him to obtain an insight into the subject.
 (e) A second division of lands followed and the poet was not only deprived of his estate; but barely escaped with his life when fleeing from the onset of his enemies.
 (f) Trusting that you will remember us, and write as often as you can spare time, and with best love (in which we all heartily join) remember me as ever, &c.
 (g) There are many boys whose fathers and mothers died when they were infants.
 (h) Shall you be able to sell them boots?
 (i) Of all my rash adventures past,
This frantic feat must prove the last.
 (j) Nor frequent does the bright oar break
The darkening mirror of the lake,
Until the rocky isle they reach,
And moor their shallop on the beach.

The highest plateau in the world, some 13,000 feet above the sea level, is that of Northern Tibet. Its lakes are frozen over until nearly June, though they are six hundred miles nearer the equator than we are.