

GEOGRAPHY.

Time—1 hour.

1. (a) Distinguish Physical and Political Geography. (b) Define Axis, Planet, Lunar Eclipse, Basin, Tropics, and Longitude.
2. Name the bodies of water into which the following rivers flow:—Thames, Alabama, Arno, Elbe, Douro, Negro, Parana, Isar, Ticino, Indus.
3. What influences affect the climate of a country?
4. Over what railroad would you pass in going (1) from Collingwood to Ottawa, (2) from Stratford to Hamilton. Name the railroads running into the city of Toronto.
5. State accurately what and where are Ivica, Sark, Leith, Valetta, Neagh, Taranto, Morea, Comorin, Hoogly, Carpentaria.
6. Draw a map of great lakes, giving cities situated on each, with positions.

Value—1, 10; 2, 10; 3, 5; 4, 9; 5, 10; 6, 6.—50.

ARITHMETIC.

Time—2 hours.

1. What will 7 loads of pease cost each containing 50 bush. 50 lbs. at 62½ cents per bushel?
2. Simplify $.035 \times .0045 \div 25$.
3. Add together $\frac{3}{4}$ of $\frac{2}{3}$ of 2 tons 4 cwt., $\frac{1}{2}$ of 3 quarters and 29 of 5 cwt. 2 qrs., and reduce the result to the decimal of 35 tons.
4. Define Factors, Quotient, Measure, Multiple, Remainder, Interest, Ratio and Integer.
5. Find value of $\left(\frac{1}{12} + \frac{1}{2} + \frac{1}{24} - \frac{1}{2\frac{1}{2}} + 7\right)$ of $\frac{1}{5} + \frac{1}{4}$ of \$210.
6. Write out the table of Avoirdupois weight. 144 lbs. Avoirdupois are equal to how many lbs. Troy?
7. A boy has a certain number of apples; he gave .33 to one boy, .3 of the remainder to another, and 428571 of the remainder to a third; he had 736 left. How many had he first?
8. What number added to $\frac{5}{8} + \frac{1}{2}$ will give that number which, when subtracted from $3\frac{1}{2}$ leaves $1\frac{1}{2}$?
9. Find the largest number which will divide 34137 and 67638 leaving for remainder 201 and 102 respectively.
10. I bought goods on credit from a merchant to the amount of \$385.75 on Jan. 15th. If he charges me seven per cent. per annum simple interest and I pay the bill on Aug. 23rd, following; how much must I give him.

Values—1, 5; 2, 5; 3, 10; 4, 8; 5, 10; 6, 10; 7, 14; 8, 12; 9, 12; 10, 14;—100.

LITERATURE.

Time—½ hour.

1. A formidable insurrection in Dalmatia and Pannonia had called Tiberius away from the Rhine and the Elbe to another field of warfare. In his place came Quintilius Varus, who allowed the poor Germans to be oppressed in every imaginable way, extorted money from them, etc.—*Fourth Reader*, page 204.
 - (a) Who were Hermann and Tiberius?
 - (b) What brave deed was done by Hermann?
 - (c) Explain the meaning of "field of warfare," "oppressed," "imaginable way," "extorted money."
2. A host of Roman princes were dragged to the altar of the Germans and sacrificed to Wodin.....; their heads were placed as trophies upon the surrounding trees.....But the Germans reserved their most cruel tortures for the Roman advocates and other pettifoggers, etc.
 - (a) Where were the altars of the Germans usually placed?
 - (b) What was Wodin?
 - (c) In what word is this name retained?
 - (d) Explain the meaning of "sacrificed," "trophies," "cruel tortures," "advocates and pettifoggers."
3. Give an account of the conquest of Mexico.

Fourth Books are not to be used.

Values—1 (a) 6, (b) 2, (c) 16; 2 (a) 5, (b) 2, (c) 2, (d) 15—24. Total value 72.

HISTORY.

Time—1 hour.

1. Tell what you know about the reign of King Alfred.

2. Explain the following terms:—Colonies, Cabinet, Governor-General, Premier.

3. When was the Act of Settlement passed? What are its chief provisions?

4. In what reign were the Act of Supremacy and the Act of Conformity passed? What were the results of these Acts?

5. For what event is the year of 1588 famous? Who prepared this expedition, what was its object, and by whom was he assisted?

6. Give a short account of what occurred in 1715 and 1815.

Value—12 marks each—total 72.

GRAMMAR.

Time—1½ hours.

1. Analyze: "Cast thy eyes eastward," said he, "and tell me what thou seest?" "I see," said I, "a huge valley, and a prodigious tide of water rolling through it."

2. Parse: In every quarter of Europe might be seen, on the walls of the towns, the signal of torches waved in tumultuous consternation.

3. How many genders are there, properly so called? What is the meaning of common gender?

4. What do much, few, a few, several, all, another, severally, denote? Illustrate by example.

5. Write down (1) ten irregular verbs; (2) the defective verbs; (3) the auxiliary verbs that are also used as principal verbs.

6. Name all the parts of speech modified by adverbs. Give examples.

7. Correct errors in the following sentences, giving your reasons:

(a) I wonder who they have asked to the party.

(b) Neither of them bear any sign of case at all.

(c) I had wrote to him the day before.

(d) Him excepted all were lost.

Values—1, 7; 2, 36; 3, 8; 4, 12; 5, 12; 6, 5; 7, 20.

Practical Department.

LESSONS IN CHEMISTRY.

(Continued from last month.)

CHAPTER II.

15. The chemical symbols given in the last section are generally taken from the common name, but a few are derived from foreign names, thus Pb. (plumbum), Fe. (ferrum), Ag. (argentum), Hg. (hydrargium), K. (kalium), Na. (natrium), &c.

It is important to remember that each symbol is not only a contraction for the name, but also stands for one atomic weight of the substance. Two or more atoms are denoted by subscript figures as O_2, H_2, C_4, P_2 , &c., meaning two, three & atoms of oxygen, hydrogen &c.

The sign +, is used in the sense of "together with." The sign = is used in the sense of "produces," or "yields" It means "equal to" only in special reference to the weight which must be the same on both sides, since we can no more destroy matter than we can create it. Thus the union of two atoms of hydrogen with one atom of oxygen to form water is expressed $H_2 + O = H_2O$. If the atomic weights, otherwise called combining numbers, are written we see that $1 \times 2 + 16 = 2 + 16$ in the arithmetical sense. No weight being lost or gained by the chemical action. The gain spoken of in experiment 16 is due to the additional weight of oxygen absorbed from the air. A numeral placed before any symbol or symbols is like a coefficient in algebra and multiplies the expression as far as the next + or period, thus four atomic weights of sulphuric acid are written. $4H_2SO_4$.

The bracket is used to denote that the symbols enclosed are to be considered to represent one molecule, thus $3(NH_4)_2SO_4$ means three equivalents, or atomic weights of sulphate of ammonium. It also means that each molecule of this sulphate consists of three simpler