

morning glory seed, and in pine seed? What terms are used to express the difference?

5. Describe the corolla as seen in the *buttercup*, and explain how it is modified in the *bean* and in the *violet*.

CHEMISTRY.

Time allowed, 1½ hour.

1. Distinguish between *evaporation* and *boiling*, and explain what you understand by *specific heat*.

2. State the chemical composition of the following:—*Glauber's salt*, *Corrosive sublimate*, *Copperas*, *White Vitriol*, *Calomel*.

3. What is *Laughing Gas*, how prepared, what its properties and uses?

4. Distinguish between *Ferrous* and *Ferric* Salts; between *Carbonates* and *Bicarbonates*; between *Protoxides* and *Sesquioxides*.

Why is air considered a mixture and not a Chemical compound? State the composition by volume.

ARITHMETIC.

Time allowed, 1½ hour.

Examiner, H. ASPINWALL HOWE, M.A., LL.D.

N.B.—Answers *alone*, *without work*, will not be accepted either in Arithmetic or Algebra.

1. Find the increase in value of the fraction $\frac{1}{x+2}$, when any number—say 3—is added to both its terms.

2. When the number 5.82167 is divided by a certain divisor the quotient is 76.2 and the remainder is .00761. Find the divisor.

3. Find the cost of 60 cwt. 3 qrs. 5 lbs, of sugar at \$8.25 per cwt.

4. Explain the difference between *Interest* and *Discount* and find the discount on \$609.75 due 3 months hence at $6\frac{1}{2}$ per cent. per annum.

5. What will it cost to cover a room 24 feet long and 162 feet wide with carpet 22 inches wide, at \$1.80 per running yard.

ALGEBRA.

Time allowed 1½ hour.

1. Find the numerical value of $x - \sqrt{x^2 + 15} + \frac{x^2 - (x+2)}{8}$ when $x=7$

2. (a) Subtract $(b-a)(c-d)$ from $(a-b)(d-c)$.

(b) Divide $a^2 - b^2 - c^2 + 2bc$ by $a - b + c$ and prove the result.