

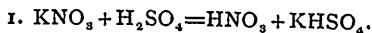
take, without consulting their wishes or their capabilities. Any one who reads the list we have given will see that there have been, in several instances, efforts made to insert round pegs in square holes. The examiners should be chosen—not hap-hazard as seems to be the fashion now—but with a view to the examination of certain subjects, and the man best fitted for a subject should be detailed therefor. With the highly praiseworthy design of evoking a spirit of rivalry amongst the sub-examiners, Mr. Tilley posts every morning on the black-board the total number of papers read by each sub-examiner on the previous day. What effect this mode of procedure has on the quality of the work, we are not prepared to say. We fear, however, that Mr. Tilley's little contrivance savours somewhat of childishness, and may work positive injury. We have no desire to be captious in our objections to the present mode of conducting this examination; but having the public interest at heart, we desire to see corrected, as far as possible, the defects to which we have drawn attention. If the Intermediate—this pestilent visitor of our High Schools—is to be maintained, let us try to reduce its evils at the very fountain source.

EDUCATION DEPARTMENT, ONTARIO.

JULY EXAMINATIONS, 1881.

INTERMEDIATE.—CHEMISTRY.

Examiner—E. Haanel, Ph.D.



(i.) Give, first, the names of the compounds entering into the reaction represented by above equation, and second, the names of the elements, with their combining weights, entering into the constitution of these compounds.

(ii.) Represent, by diagram, the necessary apparatus for conducting the experiment indicated by the equation.

(iii.) What effect would H_2SO_4 , HNO_3 and KNO_3 , each have upon a solution of blue litmus?

2. It is required to make $3\frac{1}{2}$ pounds of HNO_3 by experiment 1. (ii.) How much H_2SO_4 is required?

3. Explain the principle of Davy's safety lamp.

4. It is required to prepare the elements hydrogen and nitrogen for class purposes:

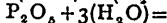
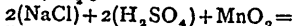
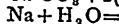
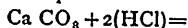
(i.) Describe the apparatus and name the substances needed for the preparation of each of the elements.

(ii.) Write out the equations representing the reactions occurring in their elimination.

(iii.) Describe the experiments you would perform to demonstrate their distinguishing properties.

5. Assign reasons for assuming that charcoal, graphite and diamond are different modifications of the same element.

6. Complete the following equations:



7. Coal gas and phosphorus burn with a luminous sulphur and hydrogen with a non-luminous flame. Account for this difference.

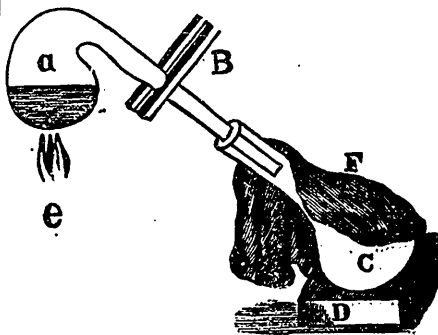
8. A certain quantity of zinc furnished, when treated with sulphuric acid, $3\frac{3}{4}$ pounds of zinc sulphate. How much zinc was employed? $\text{Zn} = 65$.

INTERMEDIATE CHEMISTRY, JULY, 1881.

Answers to Questions.

1. (i.) [a] Potassium nitrate; Sulphuric acid; Nitric acid; Hydrogen Potassium Sulphate.

[b] Potassium=39.1; Nitrogen=14; Oxygen=16; Hydrogen=1; Sulphur=32.



(ii.) a. Retort containing Potassium nitrate and Sulphuric acid. B. Forceps of retort