sulphuric acid. What will be the volume of the steam measured at 100°C and 750^{mm} Bar. produced by burning this hydrogen in oxygen.

6. Give some account of the oxychlorides, and oxygen acids of sulphur.

7. What experimental evidence enables us to decide the atomic weight, atomicity, and molecular weight of phosphorus?

8. In case the atomic weight of phosphorus were altered to 10.3 (one-third its present value); what formulæ would express the compounds: magnesium pyrophosphate, phosphorus trichloride, phosphorus oxychloride, and phosphorous acid?

Degree of M.B.

1. By what chemical and physical characters would you recognize a substance in analysis to be, (1) amorphous phosphorus, (2) sulphur, (3) iodine.

2. Describe the preparation of hydrogen sulphide, and give equations representing its reactions with acid solutions of the following substances: chlorine, ferric chloride, sulphur dioxide, chromic acid, arsenic acid, and arsenious acid.

3. Give the formula of the precipitates which occur when solutions of ammonia, ammonium chloride and ammonium sulphide, are added to solutions in dilute hydrochloric acid of the compounds indicated by the following formulæ:

Fe_2Cl_6, Al_2Cl_6, Cr_2Cl_6, $Ca_3(PO_4)_2$, Fe_2Cl_4, $MnCl_2$, $SnCl_2$, CaF_2, BaC_2O_4.

4. What compounds of the following elements do you consider the most characteristic: boron, silicon, zinc. How could you prove their presence in the following compounds: borax, hydrofluosilicic acid, zinc oxide.

5. Describe a method of detecting the presence of barum, strontium and calcium in a mixture containing the chlorides of these elements.

6. What impurities would be most likely to occur in (1) commercial potassium iodide, (2) iodine. What tests would you apply to detect these impurities?

At a recent teachers' meeting a pretty discussion arose as to when definitions in arithmetic should be taught. One argued that each fundamental operation should be finished up both in theory and practice before going to the next. Another contended, with apparently greater force, that children should be taught to do first and to reason afterwards. Practice before theory; work before philosophy; first the *how* then the *why*. This seems to be the true doctrine for graded schools.—*Chicago Educational Weekly.*

True. Indeed is it not the true doctrine for *all* schools, whether graded or ungraded? But what has this to do with definitions in arithmetic, which are, or should be, a mere formulating of the pupil's knowledge? A definition has nothing to do with the *how* or the *why*, but with the *what*.

The Ontario Teachers' Association meets in the Theatre of the Normal School on the 10th of August, and following three days. We are pleased to notice that besides the President's inaugural there will be addresses from Prof. Goldwin Smith, of Toronto, and Prof. J. E. Wells, M.A., of Woodstock.

The Education Society for Eastern Ontario is holding its annual meeting at Perth. We shall give *résumé* of its proceedings in our next.

The important and exhaustive speech on educational matters of Chancellor Blake at the late Convention of the University of Toronto, has, we regret, been crowded out of our pages in the present number. We shall reproduce it in our next.