5. Give one of the substances formed, and describe any attending phenomena when—

(*a*) Solutions of calcic chloride and sulphuric acid are mixed.
(*b*) Ammonium nitrate is heated in a retort.
(*c*) The breath is passed through "lime-water."
(*d*) Sulphur is burned in air and the product passed into blue litmus solution.

6. What is the chemical composition of water, charcoal, chalk, ozone?

7. About how much potassic chlorate would be required from which to obtain 1 cubic metre of oxygen? How much hydrogen would it require to "burn" the oxygen, and what weight of water would be formed?

PHYSICS.

PROFESSOR DUPUIS, EXAMINER.

1. Define *motion*, *velocity*, *force*.

2. Distinguish between *gravity* and *cohesion*.

3. What is a Bramah press? Explain the principle of its action.

4. Why do iron ships float in water? Who discovered the principle which explains this?

5. Illustrate by an experiment what you mean by the pressure of the atmosphere. What is the cause of this pressure? Prove your statement.

6. What is *energy*? Into what two principal kinds is it divided? Give examples.

7. Describe the construction of a thermometer.

8. Explain what is meant by the terms *specific heat* and *latent heat*. Why is water useful as compared with other liquids in heating buildings?

9. Why can we not generally raise water to a higher temperature than 100° C? Give an experiment to shew that we can make hot water boil by the application of cold water.

10. What is a prism? What takes place when sunlight passes through a prism? Why is this?

11. What is meant by saying that there are two kinds of electricity? Describe an experiment to explain your answer.