2. Write equations for the preparation of a compound of Hydrogen, with (1) Nitrogen, (2) Sulphur, (3) Phosphorus, (4) Arsenic, (5) Silicon.

3. With what other elements are (*a*) Sulphur, (*b*) Manganese grouped? For what reasons are they so grouped?

4. Give chief Chemical and Physical properties of (*a*) Sodium, (*b*) Nitrous Oxide, (*c*) Arsenic Oxide, (*d*) Carbon Disulphide.

5. Compare by graphic formulæ the following classes of organic compounds:—(*a*) Amides, (*b*) Amines, (*c*) Cyanides.

Construct an homologous series of either class.

6. How are Chloral and Sulphuric Ether made?

How is Chloral changed into Chloroform?

What is the vapour density of Ether?

PHYSIOLOGY.

Examiner.....PROF. T. WESLEY MILLS, M.A., M.D.

1. *Electric Currents of Muscle and Nerve:*

(*a*) Principal facts. (*b*) Different views as to their nature. (*c*) Arguments advanced *pro* and *con*. (*d*) State how the degree of irritability of a nerve may be made to vary. (*e*) The bearing of this on medical practice.

2. *The Heart beat in the mammal:*

(*a*) Different conditions causing it to vary. (*b*) The explanation of these. (*c*) Influence of these variations on blood pressure.

3. *Suppose the Blood Pressure being taken in the Carotid Artery of a rabbit:*

(*a*) Define the conditions associated with decided rise and fall of blood pressure. (*b*) Explain the causes of the latter (fall).

4. *Digestive Functions of Bile, and Theories of Fat absorption:*

(*a*) Functions of the bile in digestion. (*b*) Evidence for your views. (*c*) Theories of fat absorption with special reference to Schäfer's. (*d*) On what foundation do these theories rest?

5. *Blood coloring matters:*

(*a*) The principal kinds known. (*b*) Conditions under which found. (*c*) Under what form expelled from the body. (*d*) The grounds on which your statements are based.