

PHYSIOLOGY.

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

1. Write on one page of foolscap paper 20 statements of fundamental importance in animal physiology.

2. Blood capillaries, lymphatics, blood, lymph and chyle. (a) Structure; (b) general chemical composition of the last three; (c) functional relations of all of them.

3. A man on running 200 yards to catch a street car after dinner has the following experiences: (a) Greatly accelerated pulse and respiration; (b) sense of increased warmth, with profuse perspiration; (c) imperfect digestion; (d) inability to work mentally as usual.

Explain the causes and relations of these phenomena.

4. What are the principal waste-products of the animal organism (mammal)? To what in the *ingesta* do they correspond? By what organs are they excreted? Explain the relations of the latter to each other.

5. What are the views usually taught in regard to "absorption" from the alimentary canal? Criticise them.

6. Discuss the relations of the cerebral cortex to the rest of the nervous system; and the general relations of the latter to the various vital processes.

7. Show that all the senses are subject to the same general laws, illustrating especially by vision.

8. Explain, as time permits, how embryology bears on physiology.

CHEMISTRY.

Examiner G. P. GIRDWOOD, M.D.

1. The specific gravity of a sample of wax is 0.96: the weight of a piece is 15.432 grains. Describe the mode of taking the specific gravity thereof. What weight of lead of specific gravity 11.36 would be required?

2. Given any quantity of Zn, K, H, Cl, and O, how would you proceed to obtain Zinc Hydrate? Describe the operation and show by equations the steps necessary.

3. Describe the properties of Phosphorus and calculate the weight of 1 litre of phosphorus vapor at 400°C., normal pressure.

4. Compare fully the modes of preparation and properties of Carbon Dioxide and Sulphurous Anhydride.