

## SCHOOL WORK.

## HIGH SCHOOL PRIMARY.

## PHYSICS.

Examiners: C. A. Chant, B.A.; E. C. Jeffrey, B.A.; A. P. Knight, MA.

NOTE.—Give diagrams whenever possible.

1. (a) Explain what takes place in the internal arrangement of wood when a nail is driven into it; also how the bubbles are produced when a piece of chalk is thrown into water.

(b) Describe an experiment to show that air will expand without the application of heat.

2. (a) How would you prove that sound requires a medium to travel through? State any precautions necessary for the success of the experiment.

(b) Devise a means to enable you to hear the ticking of a watch thirty feet away.

3. (a) How would you prove that pitch depends on vibration-frequency, and on nothing else?

(b) When two low notes, differing slightly in pitch, are produced at the same time, a peculiar sound is heard: describe, and explain it.

4. (a) A candle is placed before a convex spherical mirror; draw the image.

(b) A double-convex lens and a concave spherical mirror each have a focal length of 12 inches, and the lens is placed at the centre of curvature of the mirror. Parallel light falls directly upon the lens, passes through it, and then falls upon the mirror. Draw a figure to show the arrangement, and also the course of the rays.

5. (a) On holding a candle before a plate-glass mirror three or four images can be seen easily: show how they are produced.

(b) Draw a diagram of a common telegraph circuit, naming each part and explaining how the signals are caused.

6. (a) Describe a Grove battery; and show how you would join up three cells to use at once.

(b) If you were given a bar of soft iron how could you make a strong magnet out of it?

7. (a) Describe an incandescent electric lamp, explaining why the slender thread becomes so bright.

(b) A dozen sewing-needles are tied together by a thread through their eyes, and are then hung by the thread in a bunch over the pole of a strong magnet. Describe and explain their behavior.

## BOTANY.

## B.

1. Give a systematic description of the plant supplied.

2. Refer it to its Sub-Kingdom, Class, Sub-Class, Division and Order, with reasons in each case.

3. Make drawings to illustrate the structure and relations of the gynoecial and androecial whorls of the flower submitted.

4. Explain the terms, ovule, seed and fruit, illustrating your answer by reference to Canadian *Roaceæ*, *Cruciferae*, and *Liliaceæ*.

5. Describe the microscopic structure of the stem of a herbaceous plant.

## FRENCH AUTHORS.

Examiners: John Petch, MA., John Squair, B.A.; A. H. Young, B.A.

NOTE.—Candidates will take section A, and either section B or C.

## A.—(Sight Translation.)

Translate:

Réintégré (re-established) dans son château de Palificat, le marquis de Sicard fit revenir sa fille de Turin où il l'avait laissée. Profitant d'un congé, François vint passer trois mois à Croix-Daurade où il fut reçu, comme bien on pense, à bras ouverts par M. de Sicard.

Remercie le capitaine, dit le marquis à sa fille, c'est à lui que tu dois d'avoir encore un père, et je lui dois, en outre de ma fortune, ce bonheur plus précieux, encore de pouvoir t'embrasser.