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(Department of Education).

INTERMEDIATE CERTIFICATE EXAMINATION, 1943.

SCIENCE (Syllabus B).

WEDNESDAY, 16th JUNE.—MORNING 10 to 12.

[Not more than *six* questions are to be attempted, of which *three* must be taken from Section I, and *three* from Section II. Illustrate your answers wherever possible. All questions are of equal value.]

SECTION I.

1. Explain what is meant by (a) an element, (b) a compound, (c) a mixture. Give an example in each case. Of what elements is water composed? Describe an experiment in support of your answer.
2. Name the two principal gases of which ordinary air is composed. Describe, with the aid of a diagram, how you would determine the percentage of each by volume in a sample of air.
Name any other gas present in atmospheric air and mention its properties.
3. Explain, with the aid of a diagram, how hydrochloric acid gas may be prepared and collected in the laboratory. Mention the properties of the gas.
4. What is meant by "specific gravity"? Mention two different methods by which the specific gravity of a liquid may be determined experimentally, and describe any one of these methods fully.
A body weighs 5.95 grams in air, 3.95 grams in water and 4.25 grams in a certain liquid. Calculate the specific gravity of the liquid.
5. Explain the occurrence of any four of the following: (a) fog; (b) dew, (c) snow, (d) hoar frost, (e) hailstone.

SECTION II.

6. What conditions are necessary for carbon assimilation ?
Describe experiments in support of your answer.
7. Describe the following and give an example of each : (a) rhizome, (b) tuber, (c) bulb, (d) runner. Give illustrative sketches.
8. Describe with the aid of diagrams the appearance of (a) a leaf, (b) a winter twig, (c) a bud, in the case of any tree with which you are familiar.
Mention the functions of the leaf.
9. What are the functions of the following : the lungs, the kidneys, the liver, the skin, the saliva ?
10. Write short notes on the functions of the blood and on the changes which it undergoes during circulation.