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(Department of Education).

INTERMEDIATE CERTIFICATE EXAMINATION, 1945.

SCIENCE (Syllabus B).

TUESDAY, 19th 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. (a) Describe experiments to show (i) that air has weight, (ii) that air exerts pressure. One experiment will suffice in each case.
(b) Explain how you would make a simple instrument to measure the pressure of the atmosphere.
2. (i) If you were provided with an ungraduated thermometer, describe how you would use it to measure the temperature of the laboratory in degrees Centigrade. (ii) Give three important reasons to show that water is not a suitable thermometric fluid.
3. Explain the terms (a) density, (b) specific gravity. A piece of metal weighs 10.25 grams in air, 6.15 grams in water and 7.01 grams in oil. Find (i) the specific gravity of the metal, (ii) the specific gravity of the oil.
4. Describe accurately a laboratory method for the preparation of nitric acid. Draw a diagram of the apparatus you would use and mention the properties of the acid.
5. Explain what is meant by (a) an element, (b) a compound. Give one example in each case. Name any compound from which a gaseous element may be obtained. Explain how you would obtain it. Name the element and mention its properties.

SECTION II.

6. (a) What are the conditions necessary for seed-germination and what changes take place in the immediate neighbourhood of germinating seeds?
(b) Describe with the aid of diagrams the stages in the growth of the seedling of the broad bean from the time the seed is sown till the young plant shows above the ground.

7. (i) Describe, under the following headings, how the monocotyledonous and the dicotyledonous plants differ from one another: (a) root, (b) stem, (c) leaves.

(ii) Mention the functions of the green leaf and describe an experiment to demonstrate one of these functions.

8. Name five wild flowers. In what kind of place is each to be found and at what time of the year is it to be seen? Draw a diagram of any one of them and state how you would identify it.

9. In what parts of the body is food digested? Name the digestive juices and also the organs that produce them. Draw a diagram to show the situation in the body and the appearance of one of these organs.

10. Describe with the aid of a diagram the structure of the skin. What are the functions of the skin? State why it is beneficial to keep the skin clean.