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(Department of Education).

INTERMEDIATE CERTIFICATE EXAMINATION, 1951.

SCIENCE (Syllabus B).

WEDNESDAY, 13th 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. Describe how you would construct a simple mercury barometer and mention any precautions that should be taken during the course of the work.

What kind of weather may be expected when the mercury in a barometer (a) falls quickly, (b) rises slowly?

2. Describe experiments, one in each case, to show that (a) air, (b) water, change in volume with change in temperature.

At what temperature is the density of water greatest?

Why is it that the water in a pond freezes very slowly from the top downwards?

3. Describe two different methods for measuring the specific gravity of oil.

A piece of zinc weighs 42 gms. in air and 37.8 gms. when totally immersed in oil of specific gravity 0.7. Find the specific gravity of zinc.

4. Describe an experiment to find out the volume of oxygen contained in a given volume of air.

What result is obtained in this experiment? Mention the properties of oxygen.

5. Describe how nitric acid is prepared and collected in the laboratory. Mention the properties of the acid.

SECTION II.

6. Make a diagram of a longitudinal section of the flower of the buttercup or wall flower.

Name the different parts shown in the diagram and mention the function of each part.

7. What are the main points of difference between monocotyledonous and dicotyledonous plants with regard to (i) roots, (ii) stems, (iii) leaves. Illustrate your answer by means of diagrams.

Give a brief account of an experiment to demonstrate any function of the leaves of a green plant.

8. (a) What conditions are most suitable for the germination of seeds?

(b) What changes take place in the air in the vicinity of germinating seeds?

Describe an experiment to demonstrate any part of your answer in the case of (b).

9. Describe the appearance and mention the function of each of the following: (i) gall bladder, (ii) pancreas, (iii) duodenum, (iv) spleen, (v) diaphragm.

Indicate by means of a diagram the relative positions of any three of these.

10. Describe with the aid of a diagram the structure of the skin and name the different parts shown in the diagram.

Discuss the importance of keeping the skin clean.