

# AN ROINN OIDEACHAIS

(Department of Education).

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INTERMEDIATE CERTIFICATE EXAMINATION, 1946.

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## SCIENCE (Syllabus B).

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WEDNESDAY, 19th JUNE.—MORNING 10 TO 12.

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[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 carefully how you would set up a simple barometer.  
Mention any apparatus which depends on atmospheric pressure for its action. State what use is made of the apparatus and explain how it works. Illustrate your answer by means of a diagram.
2. Explain the occurrence of each of the following: (a) clouds, (b) rain, (c) dew.  
What is meant by "dew-point"? Describe how you would determine the dew-point experimentally.
3. What is (a) the usual freezing point of water, (b) the usual boiling point of water?  
Mention the changes that occur in the density of water between its freezing point and boiling point.  
Describe carefully how the density of water at a temperature of  $50^{\circ}$  C. may be found fairly accurately by experiment.
4. What causes the rusting of iron?  
Describe experiments in support of your answer.  
State how the rusting of iron may be prevented. Give reasons for your answer.
5. Explain how hydrochloric acid gas may be prepared and collected in the laboratory.  
Mention the properties of the gas.  
Of what elements is the gas composed?  
What salt is got by neutralizing caustic soda with hydrochloric acid?

## SECTION II.

6. Draw a labelled diagram to show the appearance in winter time of a twig of the horse chestnut tree.

What changes does the twig undergo between mid-winter and mid-summer, and what causes these changes?

7. State where the following organs are found in the plant and briefly describe their appearance: (a) tendrils, (b) stomata, (c) root hairs, (d) thorns, (e) pistil. Illustrate your answer by means of a diagram in each case.

Mention the functions of any two of these organs.

8. Mention the different methods by which fruits and seeds are scattered. Give an example in each case.

What particular characteristic is there in the structure of each fruit (or seed) you have mentioned to aid its dispersal?

9. Show by means of a diagram the position and appearance of the following organs in the body: the liver, the kidneys, the pancreas.

Mention the functions of these organs.

10. Describe with the aid of a diagram the circulation of the blood in the human body. Mention the functions of the blood.