

INTERMEDIATE CERTIFICATE EXAMINATION, 1971

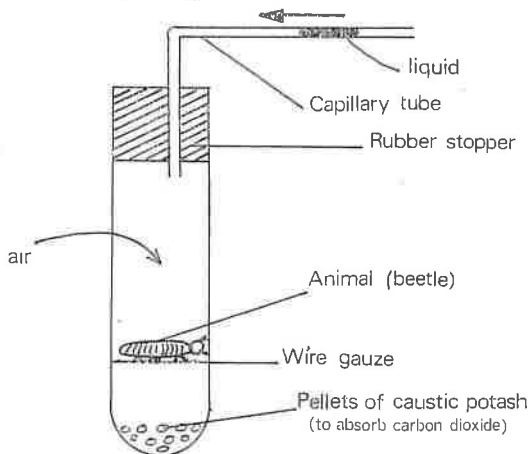
SCIENCE — SYLLABUS B

FRIDAY, 18th JUNE — MORNING, 9.30 to 12

SIX questions in all to be answered, including at least two from Section I, at least one from Section II and at least one from Section III. All questions carry equal marks.

SECTION I

1. (a) What is a habitat?
 (b) Describe a habitat you have studied.
 (c) Name four plants and four animals that were present in the habitat.
 (d) In the case of one plant and one animal you have named state clearly how each is adapted to the particular habitat.
2. (a) What are the essential parts of a flower?
 (b) What part of a flower becomes a fruit?
 (c) Why do bees visit flowers?
 (d) Name a plant whose flower is usually pollinated by wind.
 (e) Where does fertilisation take place in a flower?
 (f) What is an embryo?
3. Write an account of the life-history and habits of one of the following invertebrate animals: aphid, fluke-worm, crane-fly.
4. Name the main food substances present in (a) meat, (b) butter, (c) bread? Describe tests you would carry out on a farm foodstuff sample in order to find out if the substances you have named are present in it.
5. (a) Write short notes on bacteria under the following headings:—
 (i) how they obtain food;
 (ii) how some bacteria help mankind;
 (iii) how they are distributed;
 (iv) how they reproduce;
 (v) what conditions favour their growth.
 (b) What are the principal methods used in the preservation of food?
6. (a) What is meant by respiration?
 (b) Why is respiration essential to plants and animals?
 (c) In the experiment illustrated below it was found that the liquid moved in the direction indicated by the arrow. In a control experiment, using similar apparatus (but without an animal in the test-tube), the liquid did not move.



What, do you think, was the purpose of this experiment?

[P.T.O.]

SECTION II

7. How would you prepare and collect ammonia gas? Give an account of its properties.
Name a salt of ammonia that is used as a fertiliser. Write down the formula for the salt and explain its meaning.
8. Describe simple tests by which you would show that when wood is burned in air carbon dioxide and water vapour are produced.
9. (a) Write down the properties of hydrogen.
(b) Outline, with the aid of a diagram, how you would investigate the composition of water.

SECTION III

10. What is meant by osmosis and what is the importance of osmosis in plant and animal life?
Describe an experiment you would carry out in order to illustrate osmosis.
11. A block of metal weighs 350 g in air and 300 g in water. Calculate:
 - (a) the volume of the block,
 - (b) the specific gravity of the metal,
 - (c) what the block would weigh if weighed in oil of specific gravity 0.8.
12. Give short answers to five of the following questions.
 - (i) What do you understand by unstable equilibrium? Make use of a drawing to illustrate your answer.
 - (ii) Why would steam cause a more severe burn than boiling water?
 - (iii) What light is produced if red, blue and green lights of equal intensity are mixed?
 - (iv) How does frost help in the cultivation of soil?
 - (v) Why does mist form on the inside of the windows of a livingroom in cold weather?
 - (vi) Why does a soldering iron have a wooden handle?
 - (vii) What is a siphon? Make use of a drawing to show how it works.