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(Department of Education).

INTERMEDIATE CERTIFICATE EXAMINATION, 1952.

SCIENCE (Syllabus B).

WEDNESDAY, 18th JUNE.—EVENING, 3 TO 5.

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

SECTION I.

1. Describe how you would measure, to *two* decimal places, the thickness of a piece of glass in millimetres *or* the length of a match stick in inches.

Name and describe the instrument you would use.

[66 marks.]

2. What do you understand by the solubility of a salt? How is the solubility of substances usually affected by changes in temperature?

Describe fully how you would obtain a pure sample of each of the constituents from a mixture of sand and salt.

[66 marks.]

3. Explain what is meant by radiation of heat and give an everyday example to illustrate your answer.

Describe experiments, one in each case, to show that a black surface (a) absorbs, (b) radiates, heat better than a white surface.

[66 marks.]

4. State the Principle of Archimedes, and explain fully how you would use it in the laboratory to find

(a) the volume of a given object,

(b) the specific gravity of a given liquid.

[67 marks.]

5. Describe and explain what may be observed when

(a) magnesium is heated in an open crucible,

(b) crystals of bluestone are heated,

(c) dry hydrogen is passed over heated copper oxide,

(d) iron filings are left in a damp gas jar inverted in water.

[67 marks.]

SECTION II.

6. What are the functions of (a) the root, (b) the stem, (c) the leaves, of a plant ?

Describe how you would demonstrate experimentally (i) a function of the stem, (ii) a function of the leaves, of a plant.

[66 marks.]

7. Mention the conditions that are necessary for germination of seeds. Describe an experiment in support of your answer in the case of *one* of the conditions you have mentioned.

Describe how you would find out (i) the percentage purity, (ii) the percentage germination, of a sample of seed.

[66 marks.]

8. Describe with the aid of diagrams the appearance of each of the following and mention their functions : (i) the vertebral column, (ii) the heart, (iii) the kidneys.

[66 marks.]

9. If a room is not adequately ventilated what injurious effects may be felt by the occupants ? Explain how these injurious effects are caused.

Explain how a room may be ventilated without using any artificial device for the purpose.

[67 marks.]

10. Distinguish between annual and biennial plants and give one example of each.

Write a note, including examples, on the modification of plant parts for the purpose of storing food.

[67 marks.]