

## INTERMEDIATE CERTIFICATE EXAMINATION, 1964.

## SCIENCE (Syllabus D).

Wednesday, 10th June, — Evening, 3 to 5.30.

(Not more than six questions to be attempted, of which three must be taken from Section I, and three from Section II. Illustrate your answers wherever possible.)

## SECTION I.

1. What is meant by density ?  
Give an account of how you would measure the density of (a) a small irregular solid, (b) a given liquid.  
An object weighs 20 gms. in air and 16 gms. in water. Find (i) the density of the object, (ii) the weight of the object in a liquid of density 1.25 gm. per c.c.  
(66 marks.)
2. Describe fully how you would measure the weight of a litre of air. Suggest reasons why your answer may vary from day to day.  
(66 marks.)
3. State what you understand by (a) conduction, (b) convection, (c) radiation, of heat. Describe, with the aid of a diagram, the thermos flask and explain how it helps to keep a hot liquid hot and a cold liquid cold.  
(66 marks.)
4. What are the essential differences in thermometers used for measuring the temperatures of (a) an oven, (b) a bath, (c) the human body ? Describe in detail any two of these thermometers.  
(67 marks.)
5. (a) Describe experiments, one in each case, to show that (i) water expands on freezing, (ii) pressure affects the boiling point of water, (iii) a black body is a better absorber of heat than a white one.  
(b) Explain why steam at 100°C causes a more severe scald than water at the same temperature.  
(67 marks.)

## SECTION II.

6. Explain the following terms:—(a) evaporation, (b) condensation, (c) distillation, (d) sublimation.  
Describe fully how you would obtain (i) pure water from sea-water, (ii) sal ammoniac from a mixture of common salt and sal ammoniac.  
(66 marks.)
7. State the approximate percentage by volume of oxygen in the air. Describe an experiment in support of your answer.  
Give an account of the preparation and properties of oxygen.  
Name the other constituents of the air.  
(66 marks.)
8. (a) Mention two acids and two alkalis which are used in the home. In the case of each substance you have mentioned outline its properties and state any one of its uses.  
(b) Write a note on the souring of milk.  
(66 marks.)
9. Draw a labelled diagram to show the position, shape and relative size of the following organs:— (i) the heart, (ii) the stomach, (iii) the kidneys.  
Mention the functions of each.  
(67 marks.)
10. (a) Explain how the skin helps to regulate body temperature.  
(b) What ill effects may result from poor ventilation in a living-room ?  
(c) Describe the first-aid treatment you would give in the case of a severe nose bleeding or a compound fracture of the skin.  
(67 marks.)