

INTERMEDIATE CERTIFICATE EXAMINATION, 1965

SCIENCE (Syllabus B)

THURSDAY, 24th June — Afternoon, 3 to 5.30

(Not more than six questions are to be attempted. Two questions at least must be answered from each Section. Illustrate your answers wherever possible.)

SECTION I

1. (a) When a body is immersed in a fluid, it experiences an upthrust equal to the weight of the fluid which the body displaces.
Describe an experiment which illustrates this principle.
- (b) A metal sphere, whose volume is 5 c.c., weighs 20 gm. Write down
 - (i) the density of the metal,
 - (ii) the volume of water displaced by the sphere when it is immersed in water,
 - (iii) the apparent weight of the sphere when immersed in water. (66 marks)
2. (a) Describe an experiment to show that solids expand when heated.
How would you show experimentally that some metals are better heat conductors than others?
- (b) Describe what occurs when a solid is melting and when a liquid is boiling. (66 marks)
3. (a) State clearly what each of the following instruments measures: barometer, hydrometer, burette, thermometer.
- (b) Copy the following table into your answer book and fill in the missing figures.

	Freezing Point of Water	Boiling Point of Water
Centigrade °C. °C.
Fahrenheit °F. °F.

- (c) Explain the following terms and give a named example of each: element, compound, chemical change, acid, alkali, salt. (66 marks)
4. (a) Describe how you would remove the sand from a sample of seawater which contains sand.
- (b) Having removed the sand completely, what still remains in the water? How would you further treat this water so as to obtain a sample of pure water?
- (c) What two gases combine to form water? (67 marks)
5. What chemicals would you use to prepare hydrogen? Describe how you would prepare and collect a few jars of the gas.
 - (i) From which of the chemicals does the hydrogen come?
 - (ii) When would you begin to collect the gas? Why?
 - (iii) Name the substances remaining in the generating flask. (67 marks)

SECTION II

6. (a) What are the functions of the leaf and the root of a green plant? Name the food materials which a green plant uses.
- (b) It is a common practice to have water plants growing in an aquarium. Of what benefit to fish are green water plants? (66 marks)
7. (a) Describe the principal methods by which seeds are dispersed. Illustrate a named example of each method.
- (b) Explain why most flowering plants produce large numbers of seeds. (66 marks)
8. (a) Describe (i) a plant which has adapted its structure to climbing,
(ii) a plant which stores food in an underground root or stem.
- (b) Name and illustrate two methods of vegetative reproduction. (67 marks)
9. (a) Describe the structure and functions of the lungs. How would you show that exhaled air contains more carbon dioxide than inhaled air.
- (b) What part should the nose play in respiration? (66 marks)
10. (a) Describe the principal organs of the digestive system and the digestive changes that occur in each organ.
- (b) Write a short account of the necessity and of the proper methods of caring for your teeth. (66 marks)