

Examination Number

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INTERMEDIATE CERTIFICATE EXAMINATION, 1978

A

SCIENCE—SYLLABUS A

WEDNESDAY, 14 JUNE - MORNING, 9.30 to 12

SECTION A (See separate sheet for Sections B, C, D.)

Thirty items to be answered. All items carry the same marks.

Write your answers in the spaces provided.

Section A carries half the total marks for the paper.

Be sure to return this Section of the examination paper; enclose it in the answer-book you use in answering Sections B, C, D.

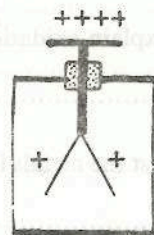
1. Heat is a form of energy. Name *two* other forms of energy.
 (i) (ii)
2. A stone displaces 20 cm³ of water. If the stone has a mass of 50 grams, what is its density?

3. Give *two* reasons why water is an unsuitable liquid for use in thermometers.
 (i)
 (ii)
4. State the relationship between the volume and the temperature of a definite mass of gas at constant pressure.

5. Electrical conduction in metals involves the movement of.....
6. A taut spiral spring is extended 10 cm when a 5 gram mass is attached to it. What mass will extend the spring 4 cm?.....
7. A blade can be arranged to 'float' on water. What does this experiment demonstrate?

8. What is the wavelength of a wave that has a frequency of 15 hertz and a velocity of 300 metres per second?

9. The diagram shows a positively-charged electroscope. What would happen to the leaves if a negatively-charged rod were brought close to the disc?



[P.T.O.]

10. Calculate the heat lost when 3 kilograms of water cool from 60°C to 20°C , given that the specific heat capacity of water is $4200\text{ J/kg}^{\circ}\text{C}$.

.....

11. Complete the statement below by inserting in each blank space the most suitable of the following numbers: 10, 36, 100, 76, 700, 1000.

Under normal conditions the atmosphere can support a column of mercury of about centimetres in height and a column of water of about metres in height.

12. What is meant by viscosity?.....

.....

13. Mention *two* reasons for saying that air is a mixture.

(i)

(ii)

14. Write the chemical formula for magnesium oxide.....

15. Insert the omitted words in the following statement.

In a positively-charged ion the number of in the nucleus is always greater than the number of orbiting the nucleus.

16. Name a linear molecule

17. What is meant by heat of solution?.....

.....

18. Complete the following: $\text{Zn} + \text{H}_2\text{SO}_4 =$

19. Name a substance that you would use with sulphuric acid (conc.) in order to obtain sulphur dioxide.

.....

20. What is meant by an acid?.....

.....

21. What is meant by the atomic number of an element?

.....

22. Explain oxidation in terms of electron transfer.

.....

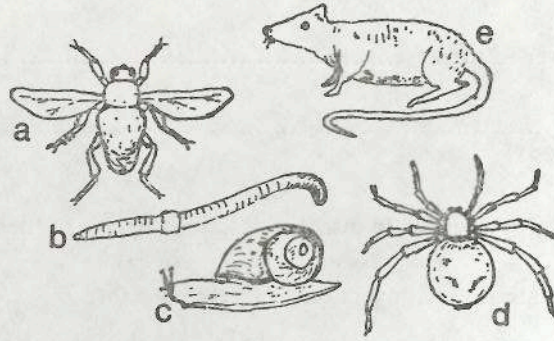
23. List the metals iron, silver and calcium according to their increasing order of chemical activity

.....

24. Name the process used to separate two liquids which have different boiling points.

.....

25. Which *two* of the organisms *a, b, c, d, e*, shown below belong to the same phylum?.....



Underline, in the following list, the phylum to which the two organisms belong.

Annélida Arthropoda Chordata Mollusca Protozoa.

26. State any *two* differences between plant and animal cells.

- (i)
- (ii)

27. What is the difference between a parasite and a saprophyte?

.....
.....

28. Underline, in the following list, the food-transporting tissue in plants.

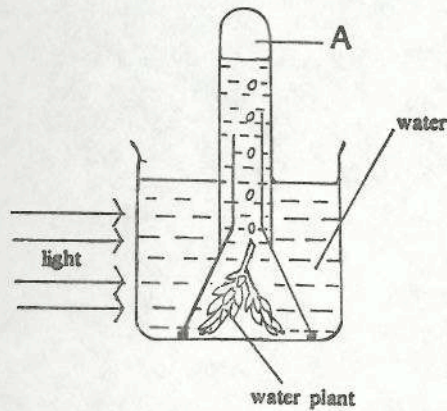
mesophyll phloem epidermis parenchyma

29. Name the biological process being studied in the experiment shown in the diagram.

.....

What gas is collected at A during this experiment?

.....



30. What is meant by fertilization?

.....
.....

31. Mention *one* metallic element essential for plant growth.....

From where do plants get this element?.....

32. State the position of the following bones in the human body.

(i) tibia (ii) humerus.....

33. State *one* function of the liver in man

34. The change from tadpole to frog *or* larva to insect is described by *one* of the following words. Underline the correct word.

assimilation conversion metamorphosis meiosis

35. State *one* function of the human ear, other than hearing.....

36. Underline your answer to *each* of the following.

(i) Starch is made up of many units of:

amino acids glucose fatty acids glycerol

(ii) The presence of starch is shown by a positive result to:

Fehling's test Iodine test Biuret test

