

**WARNING**  
You must return this paper with your answer-book, otherwise marks will be lost.



# Coimisiún na Scrúduithe Stáit State Examinations Commission

JUNIOR CERTIFICATE EXAMINATION, 2003

**SCIENCE – HIGHER LEVEL**  
(N.B. Not for Science – Local Studies Candidates)

THURSDAY, 12 JUNE – AFTERNOON, 2.00 to 4.30

**SECTION A (144 marks) TO BE ANSWERED BY ALL CANDIDATES.**  
(See separate sheet for Sections B, C, D and E.)

Answer *each* of the questions 1, 2 and 3. There are **TEN** parts in each question. Answer any **EIGHT** parts. All questions carry equal marks. Answer the questions in the spaces provided. Return this Section of the examination paper. Enclose it in the answer-book you use in answering the other Sections.

1. Answer **eight** of the following, (a), (b), (c), etc.

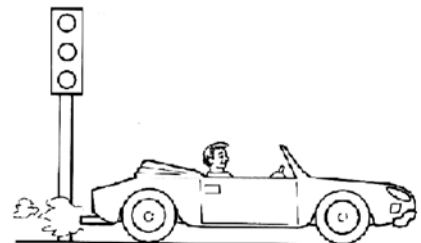
(a) What is meant by renewable energy?

\_\_\_\_\_

Name a source of renewable energy.

\_\_\_\_\_

(b) The car stopped at the traffic lights and then drove off with constant acceleration of  $2 \text{ m/s}^2$ . What is the speed of the car after 8 seconds?



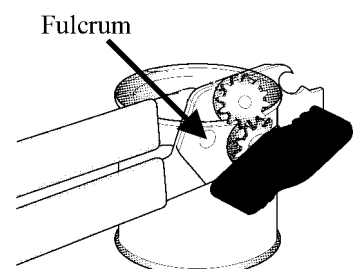
\_\_\_\_\_

(c) The diagram shows a can opener. Mark a lever in the diagram with an X.

What is a fulcrum?

\_\_\_\_\_

\_\_\_\_\_



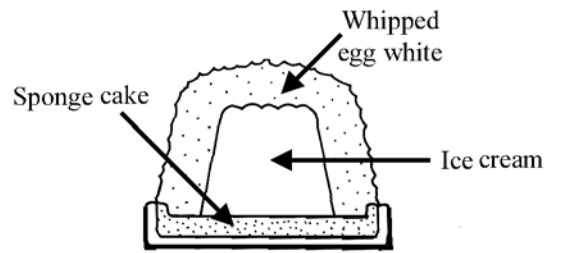
- (d) Name the states of equilibrium of tack A and tack B.

Tack A \_\_\_\_\_

Tack B \_\_\_\_\_



- (e) The diagram shows a popular dessert called 'baked Alaska'. Why does the ice cream not melt when the dessert is in a hot oven?



\_\_\_\_\_

\_\_\_\_\_

- (f) Some solids sublime on heating.  
What happens to a solid when it sublimes?

\_\_\_\_\_

Name a solid that sublimes.

Name of solid \_\_\_\_\_

- (g) What determines the pitch of a musical note?

\_\_\_\_\_

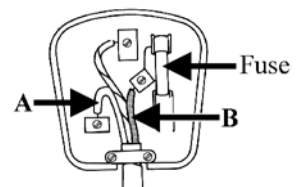
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- (h) The diagram shows a correctly wired 13 A plug. Give the colours of the coating of the wires A and B.

Colour of A \_\_\_\_\_

Colour of B \_\_\_\_\_



- (i) What is the cost of using a 2 kW electric fire for 3 hours if a unit (kW h) of electricity costs 10 cent?

\_\_\_\_\_

- (j) What happens to light when it passes through a convex lens, e.g., the camera lens?

\_\_\_\_\_



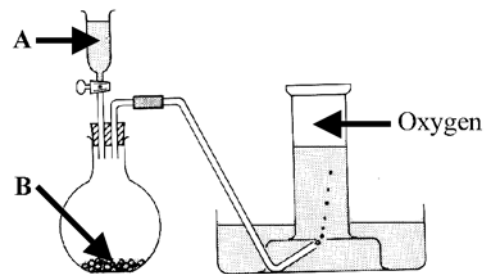
(8 × 6)

2. Answer **eight** of the following, (a), (b), (c), etc.

(a) Name a liquid A and a solid B suitable for the preparation of oxygen.

Liquid A \_\_\_\_\_

Solid B \_\_\_\_\_



(b) Name a gas, other than carbon dioxide, that can form acid rain.

Name of gas \_\_\_\_\_

Give one effect of acid rain on the environment.

Effect \_\_\_\_\_

(c) Give two precautions that should be taken when heating a substance in a test-tube.

Precaution one \_\_\_\_\_

Precaution two \_\_\_\_\_

(d) Name a method of separation and give an example of a mixture that can be separated by this method.

Name \_\_\_\_\_

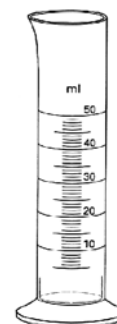
Example \_\_\_\_\_

(e) Name the item of laboratory equipment shown in the diagram.

Name \_\_\_\_\_

Name another item of laboratory equipment that can be used to measure volumes of liquids accurately.

Name \_\_\_\_\_



(f) Why is fluoride added to water for domestic use?

\_\_\_\_\_

[Turn over

(g) A and B are hazard symbols.

Give the meaning of each symbol.

Symbol A \_\_\_\_\_

Symbol B \_\_\_\_\_



Symbol A



Symbol B

(h) Give an application of ion exchange.

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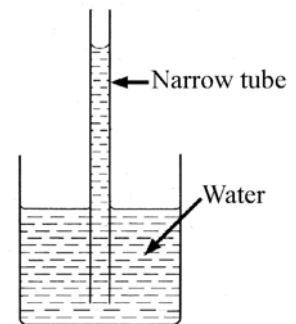
(i) Name the property of water being demonstrated by the experiment shown in the diagram.

Property of water \_\_\_\_\_

Give an everyday application of this property.

Application \_\_\_\_\_

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(j) The experiment shown was set up and left for a week. The iron wool changed colour and the water rose up the test-tube to a level above that of the water in the beaker.

What happened to the iron wool?

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What happens to the air in the test-tube to cause the water level to rise in the test-tube?

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3. Answer **eight** of the following, (a), (b), (c), etc.

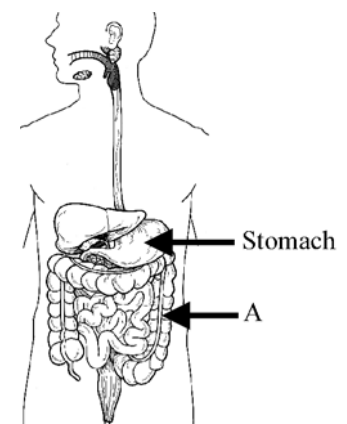
(a) What is added, by our body, to food when it enters the stomach?

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Name part A.

Part A \_\_\_\_\_



(b) What causes the pulse in the arteries of our bodies?

\_\_\_\_\_

Give the average pulse rate for an adult at rest.

\_\_\_\_\_

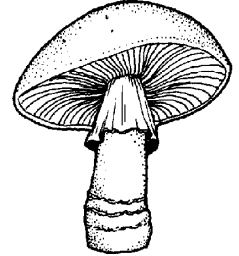
(c) Mushrooms are decomposers.

How do mushrooms feed?

\_\_\_\_\_

Why are decomposers an essential part of the living world?

\_\_\_\_\_



(d) Give two important functions of the skin covering our bodies.

Function one \_\_\_\_\_

Function two \_\_\_\_\_

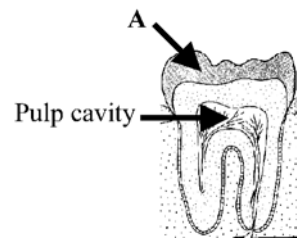
(e) Different types of teeth have the same basic structure as shown in the diagram.

Name part A.

Part A \_\_\_\_\_

Name one living item found in the pulp cavity.

Living item \_\_\_\_\_



(f) Name a plant and give the way in which it disperses its seeds.

Name \_\_\_\_\_

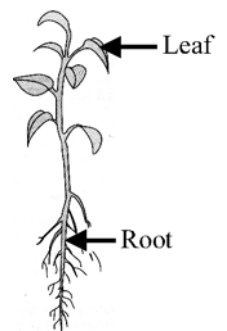
Way \_\_\_\_\_

(g) The diagram shows a young plant.  
Give one function of a leaf.

Function \_\_\_\_\_

Give one function of a root.

Function \_\_\_\_\_



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(h) Define geotropism.

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(i) The diagram shows the human respiratory system.

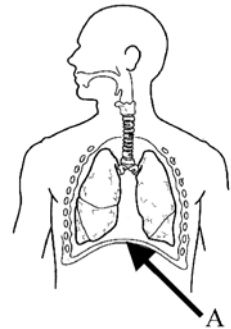
Name the structure labelled A.

Name \_\_\_\_\_

How does A help us to breathe?

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(j) The diagram shows a flower of the bramble or blackberry.

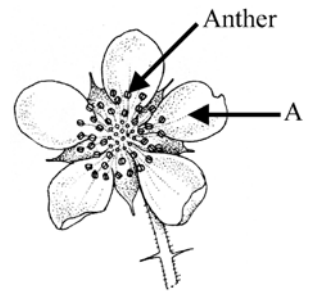
Name the part labelled A.

Name \_\_\_\_\_

Give the function of the anther in plant reproduction.

Function \_\_\_\_\_

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