

JUNIOR LYCEUM ANNUAL EXAMINATIONS 2007

Educational Assessment Unit – Education Division

FORM 1

INTEGRATED SCIENCE

Time 1h 30min

Name _____

Class _____

ANSWER ALL QUESTIONS

1. This question is about safety and science apparatus.

- a) Safety is a very important when doing experiments. Write down two safety rules which are important in a science laboratory.

4 marks

- b) The following table shows some information about apparatus used in the lab. Fill in the missing information.

Letter	Name of apparatus	Used to ...
a.	Bunsen burner	
b.	safety glasses	
c.		measures volume of liquids
d.		holds a beaker on a Bunsen burner

4 marks

2. During a PE lesson, Samantha's teacher wanted to show the class the effect of exercise on heart rate.

First she measured Samantha's heart rate when she was resting.

Samantha then skipped for 2 minutes.

Her teacher measured her heart rate as soon as she was skipping, and continued to take measurements at 1 minute intervals until her heart rate returned to the resting rate.

These are her results.

Time	Heart Rate (per minute)
Resting before exercise	70
Immediately after exercise	145
1 minute after exercise	125
2 minutes after exercise	95
3 minutes after exercise	85
4 minutes after exercise	80
5 minutes after exercise	70

Answer the following questions:

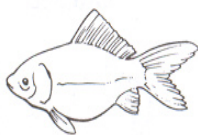
- i. What was Samantha's heart rate before she started skipping? _____ 1 mark
- ii. What was Samantha's heart rate immediately after exercise? _____ 1 mark
- iii. Calculate the increase in Samantha's heart rate during exercise.
_____ 1 mark
- iv. How long did it take for Samantha's heart rate to return to normal?
_____ 1 mark
- v. Write down the name of a measuring instrument which you would need in this experiment. _____ 1 mark

3. This question is about animals. Animals are divided into two groups.

Animals with a backbone and other bones inside their body are called _____.
Animals without a backbone and other bones inside their body are called _____.

2 marks

The following are pictures of animals with a backbone. There are five main groups.



A



B



C



D



E

Write your answers in the following table.

- i. Which group does each of these animals belong to?
- ii. Write ONE characteristic of each group.

<u>Group</u>	<u>(i) letters</u>	<u>(ii) One characteristic of the group</u>
Fish		
Reptiles		
Amphibians		
Birds		
Mammals		

10 marks

4. This question is about **energy**.

a) Use some of the words below to complete the sentence.

can, fast, renewable, cannot, slow

A _____ energy source is one that _____ be replaced as _____ as it is being used.

3 marks

b) Name ONE renewable energy source and ONE non-renewable energy source.

renewable source: _____

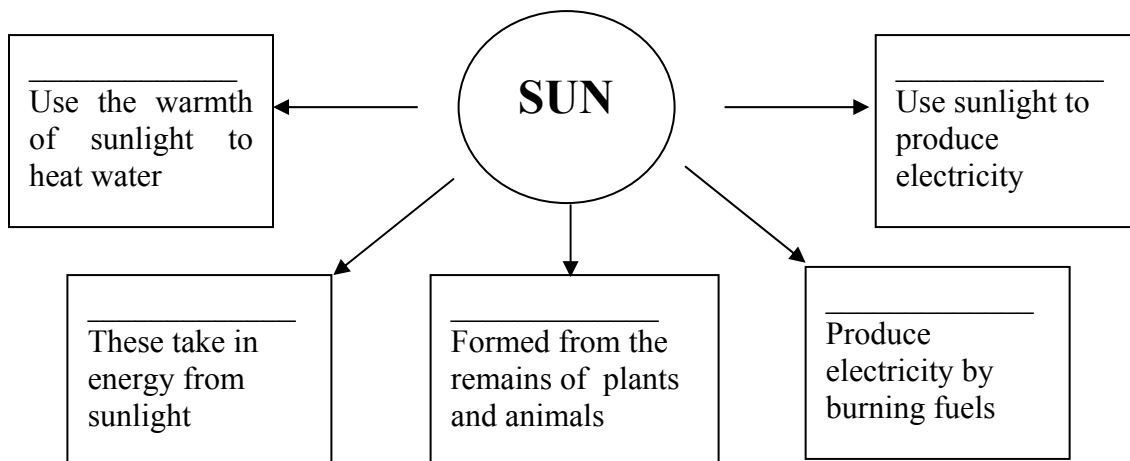
non-renewable source: _____

2 marks

c) Put the following words the in correct boxes.

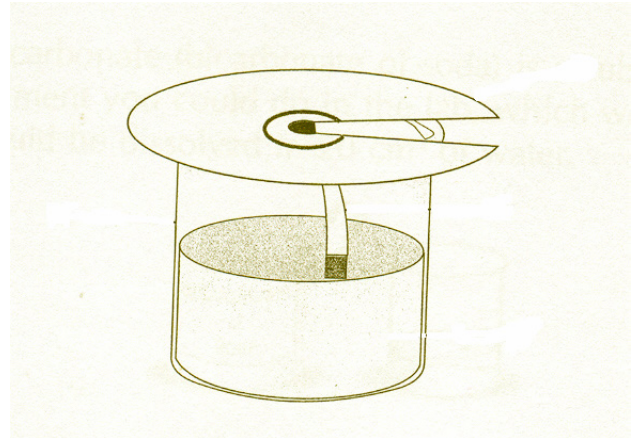
5 marks

solar cells, fossil fuels, plants, power stations, solar panels



5. **This question is about separating colours.**

a) Name THREE things you would need for separating colours.



b) What name would you give to this experiment? _____

4 marks

6. **This question is about separating materials.**

i. These are four ways of separating mixtures.

filtering, using a magnet, evaporating, by hand

Which is the easiest way of separating these mixtures?

- a. salt water _____
- b. iron and sand _____
- c. sand and water _____
- d. dried beans and peas _____
- e. chalk and water _____
- f. steel cans and aluminium cans _____

6 marks

ii. In some parts of the world, where there is very little rainfall, people use seawater to provide them with pure drinking water.

a. Explain how 'pure' water is different from seawater.

b. Name the method by which you can get 'pure' drinking water from sea water.

4 marks

7. This question is about solids, liquids and gases.

These are the names of some substances.

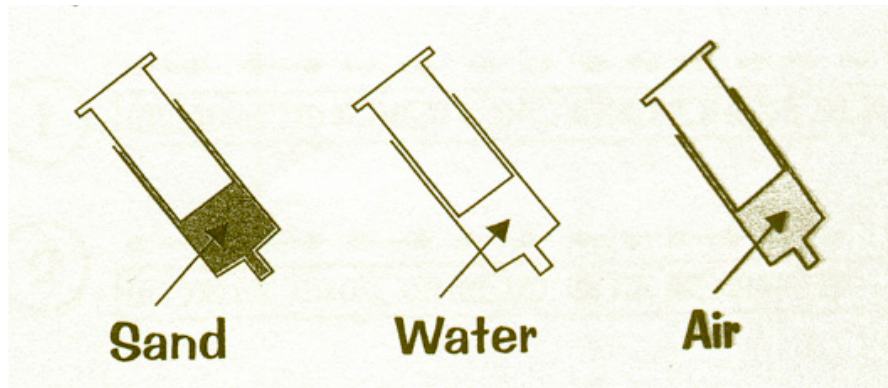
gold	Water	oxygen	vinegar	salt	air
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- i. Sort these substances into solids, liquids and gases. Write your answers in the following table.

<u>Solid</u>	<u>Liquid</u>	<u>Gas</u>

6 marks

- ii. The ends of these three syringes are sealed so that nothing can come out of them. Answer the following questions about two of the syringes.



Underline the correct words:

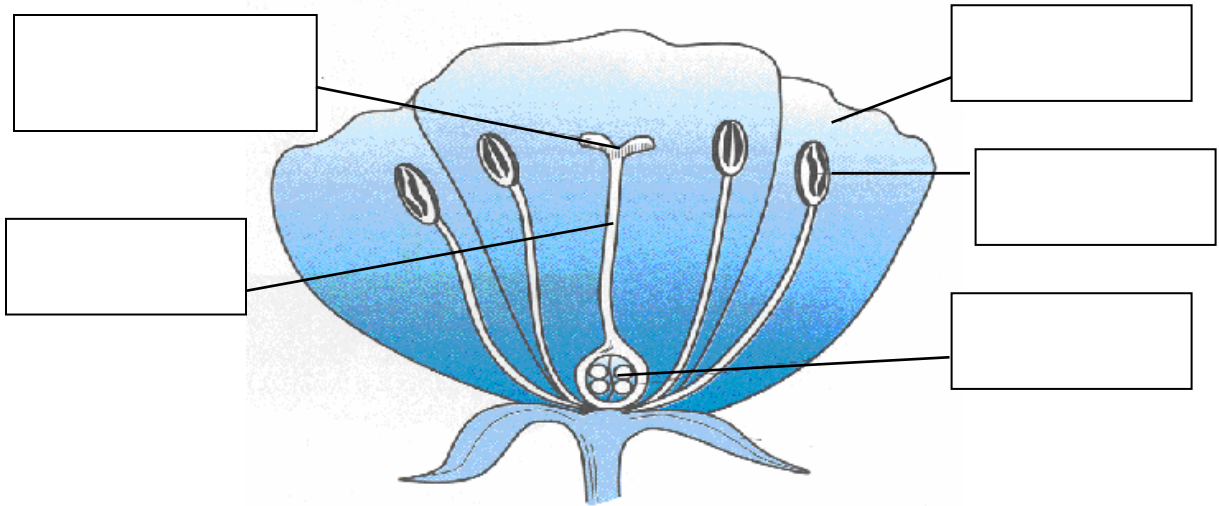
- a. You (can't / can) push in the plunger in the **water syringe**. This is because the particles in the water are very (far apart / close together).
- b. The particles in the **air syringe** are (far apart / close together). When you push in the plunger, the air particles get (further apart / closer together).

4 marks

8. Mary was revising **the parts of a flower**.

i. Put the following labels in their correct place.

petal	Ovary	stamen	Style	Stigma
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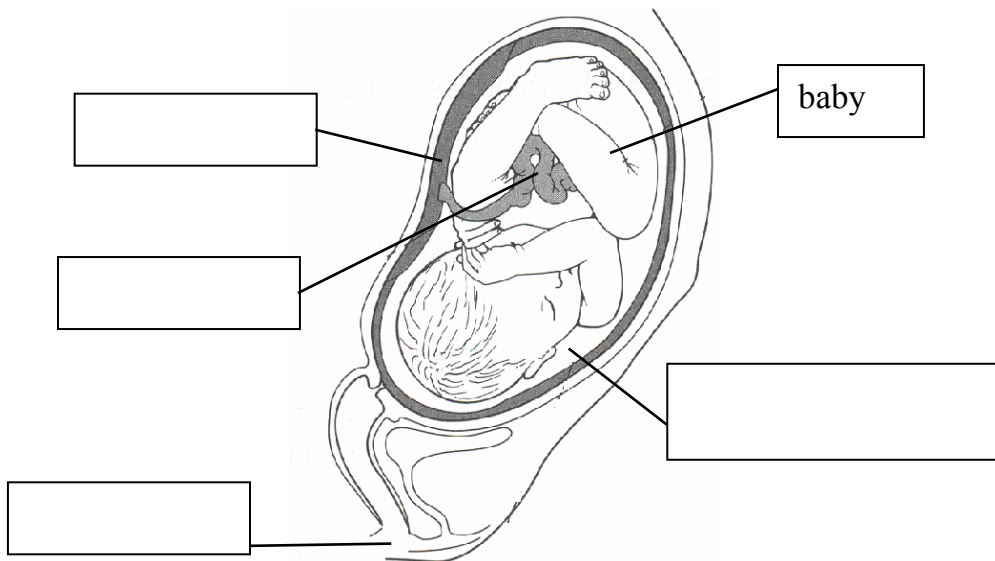
ii. What does the petal do to help reproduction? _____

iii. What does the stamen produce? _____ 8 marks

9. The following diagram shows a **baby growing in its mother's womb**.

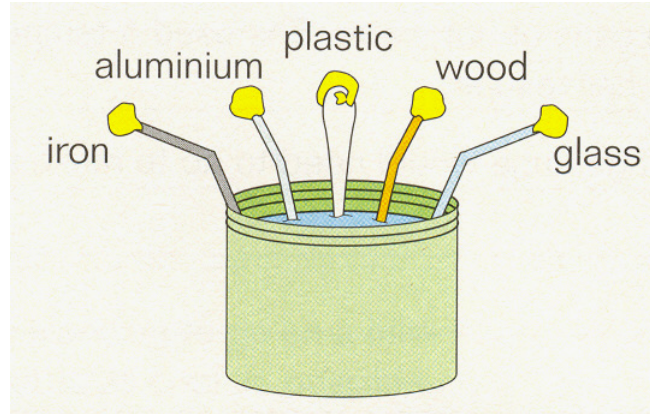
Put the following labels in their correct place.

watery liquid	Vagina	umbilical cord	Placenta
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4 marks

10. Adam has five rods of different materials. He put each rod into an electric circuit with a light bulb.



- i. Show which materials will make the bulb light.

Material	Bulb will light (Yes or No)
Iron	
Wood	
Plastic	
Glass	
aluminium	

5 marks

- ii. Materials which make the bulb light are called _____.

Materials which do not make the bulb light are called _____. 2 marks

11. This question is about **electric circuits**.

- a. Draw the symbols of the following:

battery



wire



bulb



switch



4 marks

- b. You have a battery, two bulbs, wire and a switch. In the following boxes, use symbols to draw ...

i. circuit with the bulbs in series

ii. circuit with the bulbs in parallel.

6 marks

- c. The wiring in a house is in parallel. Give two reasons why this is so.

2 marks

12. a) Divide these chemicals into **elements** and **compounds** and write them in the table below.

Oxygen, water, gold, carbon dioxide, copper sulphate, copper

Elements	Compounds

6 marks

- b) Give the name and symbol of:

	Name	Symbol
i) a metal		
ii) a non-metal		

4 marks

- END OF PAPER. PLEASE CHECK YOUR WORK AGAIN -