

JUNIOR LYCEUM ANNUAL EXAMINATIONS 2009

Directorate for Quality and Standards in Education
Educational Assessment Unit

FORM 2

INTEGRATED SCIENCE

TIME: 1h 30min

Name: _____

Class: _____

ANSWER ALL QUESTIONS

1) Different organisms live in different habitats.

a) Draw a line from the organism to its habitat.

crab

freshwater

earthworm

desert

seagull

seashore

frog

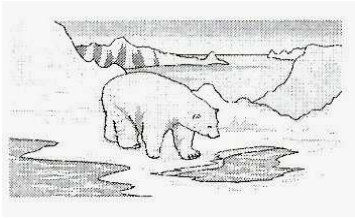
soil

lizard

cliffs

5 marks

b) The following table shows an animal and some information about it.

	<p>Polar Bear – Fact file lives on the cold Arctic ice covered in thick white fur thick fat layer stored below the skin short thick neck and legs small ear lobes broad feet which have large claws</p>
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Select three of the features in the polar bear fact file and explain how each of them helps the polar bear to exist on the Arctic ice.

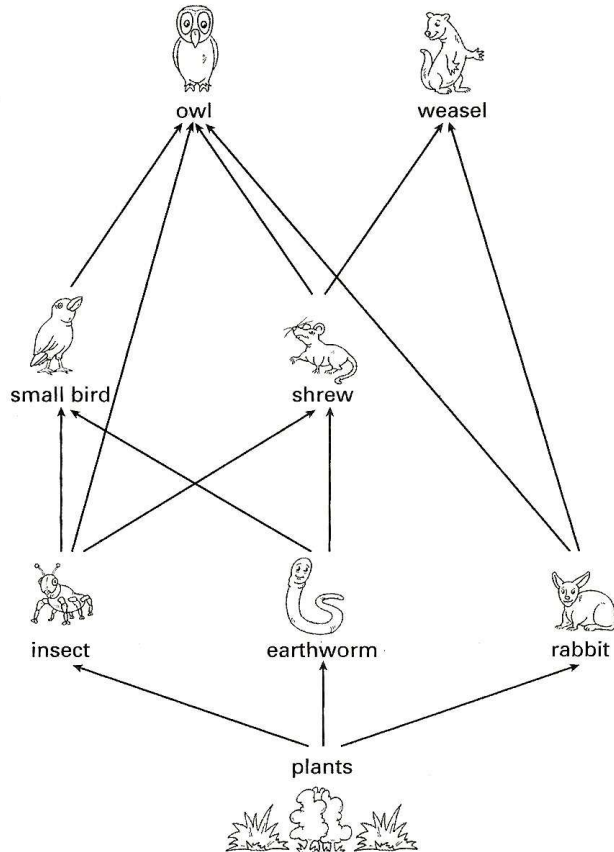
1) _____

2) _____

3) _____

3 marks

2) The diagram shows a food web.



Use the information in the food web to help you answer **ALL** questions.

a) What two things do shrews eat?

_____ 2 marks

b) Name the producer. _____

1 mark

c) The owl is a predator.

i) Name one other predator. _____

1 mark

ii) Name an animal that is both a prey and a predator. _____

1 mark

iii) Give two characteristics which help the owl to be a predator.

2 marks

d) The shrews are all killed. Write **two** effects that this would have on the food web.

4 marks

3) Chris is given seven different liquids and tests their pH.

Liquid	A	B	C	D	E	F	G
pH of liquid	4.0	8.5	3.5	2.0	13.0	7.0	2.5

- a) Which liquid is neutral? _____ 1 mark
- b) Which liquid is the weakest acid? _____ 1 mark
- c) Which liquid is most alkaline? _____ 1 mark
- d) Write the above liquids in order, starting with the most acidic to the most alkaline.

_____ 2 marks

- e) What kind of reaction occurs if liquid B is added to liquid C?

_____ 2 marks

4) Farmer Cassar has a large farm on which he grows a range of crops. He reads that potatoes grow best in soil with a pH value of 6.0.

- a) What is meant by a pH value of 6.0?

_____ 1 mark

- b) He tests the soil in several places on his farm to find pH values. The results are shown in the table.

soil sample	pH value
soil A	7.0
soil B	6.5
soil C	3.5
soil D	4.5

- i) Why did he take readings in several places?

_____ 1 mark

- ii) Which soil sample is most acidic?

_____ 1 mark

- c) He decides to grow potatoes at D. What should he add to the soil here and why?

_____ 2 marks

5) Many changes take place everyday. Some of them are reversible and others are not.

a) What is the meaning of the word reversible?

_____ 1 mark

b) Are reversible changes called **physical** or **chemical** changes?

_____ 1 mark

c) Tick (✓) **three** boxes to show which changes are reversible.

cooling water

baking bread

boiling an egg

boiling water

dissolving salt in water

burning a candle

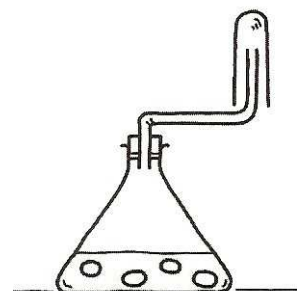
3 marks

6) The diagram shows a way of producing hydrogen.

This method of collecting hydrogen uses one property of hydrogen.

a) Which property is this?

_____ 1 mark



b) Give another property of hydrogen.

_____ 1 mark

c) We test hydrogen by adding a lighted splint to the gas.

i) What happens when the lighted splint is put into hydrogen gas?

_____ 2 marks

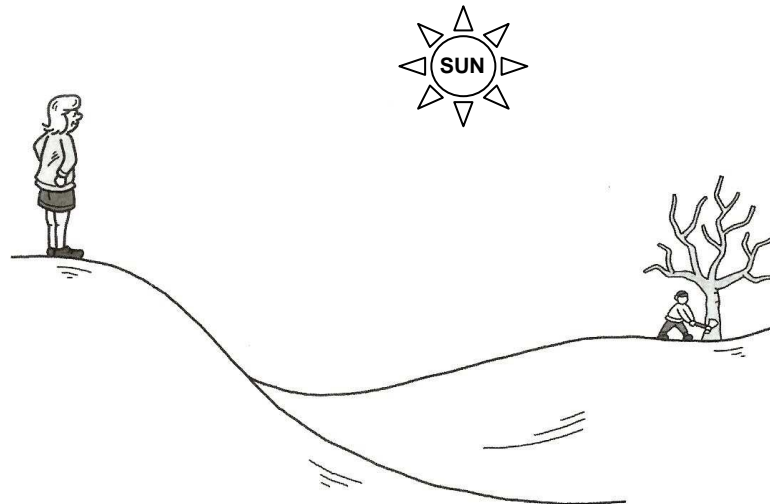
ii) What is produced when hydrogen burns in air?

_____ 1 mark

iii) Write a word equation to show this reaction.

_____ 2 marks

7) a) Jane looks across the fields and sees a man chopping down a tree.



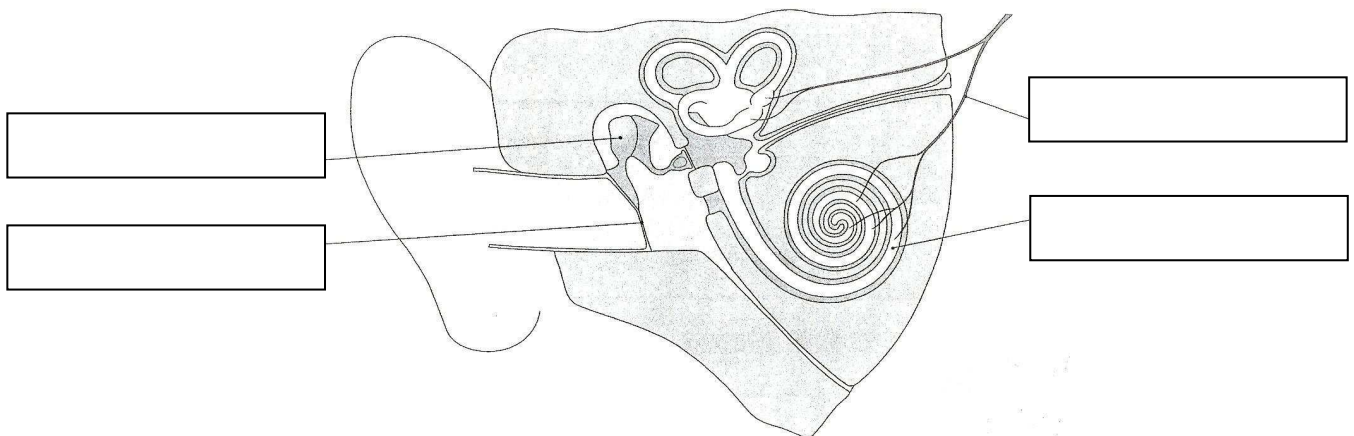
i) Which object in the picture is a source of light? _____
1 mark

ii) On the diagram draw **rays of light** to show how Jane can see the man chopping the tree.
2 marks

iii) Jane can see the man chop the tree before she can hear the noise.
Explain why.

1 mark

b) The diagram shows part of the human ear.



i) Label the diagram.
4 marks

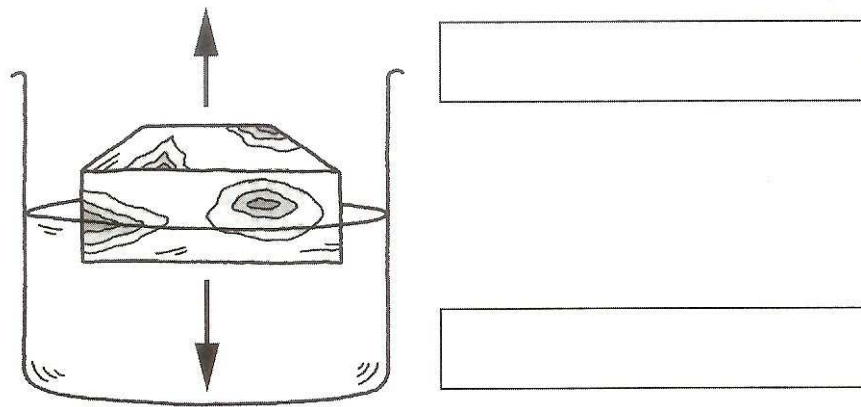
ii) Describe what happens to our eardrums when sound reaches them.

1 mark

8) Robert is trying to float a piece of wood, a brick, a ball of plasticene and a piece of jablo in a bowl with water.

a) Robert tries the block of wood first.

The arrows show the directions of two forces acting on the piece of wood.



i) On the diagram label the forces.

2 marks

ii) The wood floats on the water.

What does this tell you about the forces acting on the wood?

_____ 1 mark

b) Robert tries to float the brick on the water.

i) What happens to the brick?

_____ 1 mark

ii) Why?

_____ 2 marks

c) i) Predict whether the jablo will float or sink.

The jablo will _____

1 mark

ii) Give a reason for your answer.

_____ 1 mark

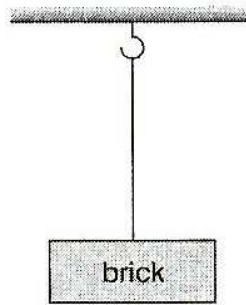
d) Robert noticed that the ball of plasticene sank to the bottom.

How can Robert make the plasticene float?

_____ 2 marks

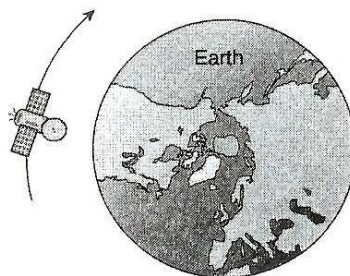
9) Draw an arrow on each of the following diagrams to show the direction of the force named.

a) The weight of a brick hanging from the ceiling.



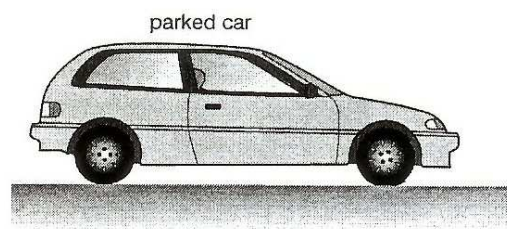
1 mark

b) The gravitational force of the Earth on an orbiting satellite.



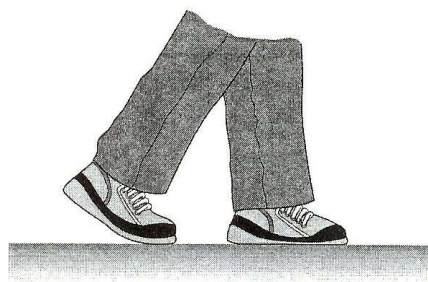
1 mark

c) The force of the road on the tyre of a parked car.



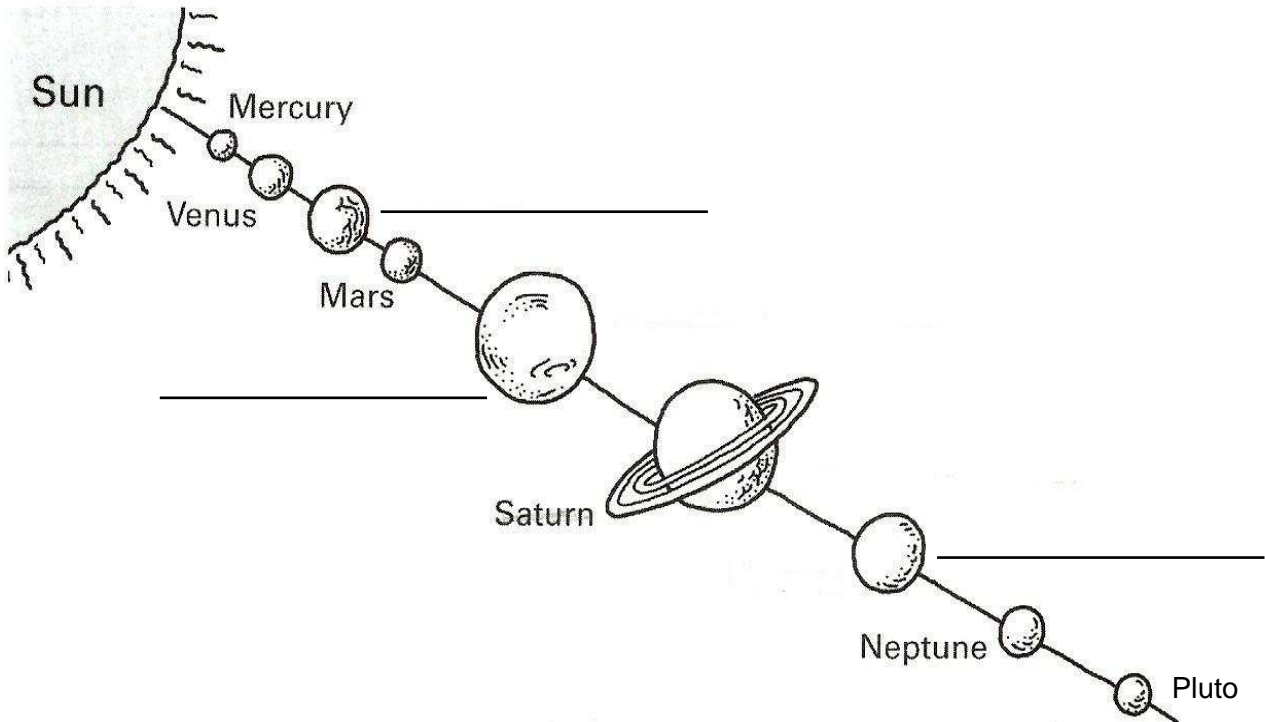
1 mark

d) The force of friction on the shoe of someone walking forwards



1 mark

10) The diagram shows the solar system.



a) i) On the diagram label the missing names of planets.

3 marks

ii) On the diagram write an **A** to show the position of the asteroid belt.

1 mark

b) Complete the sentences about the solar system.

Choose words from **this** list. Each word can be used more than once or none at all.

Earth Jupiter Mercury Moon Sun Uranus

All the planets of the solar system orbit the _____

Earth has a smaller orbit than _____

The Earth is orbited by the _____

Light is given out by the _____

The planet with the hottest surface temperature is _____

5 marks

11) a) Choose numbers from the list to complete the sentences below.

1	7	24	28	31	365
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The Earth spins around on its axis once everyhours.

1 mark

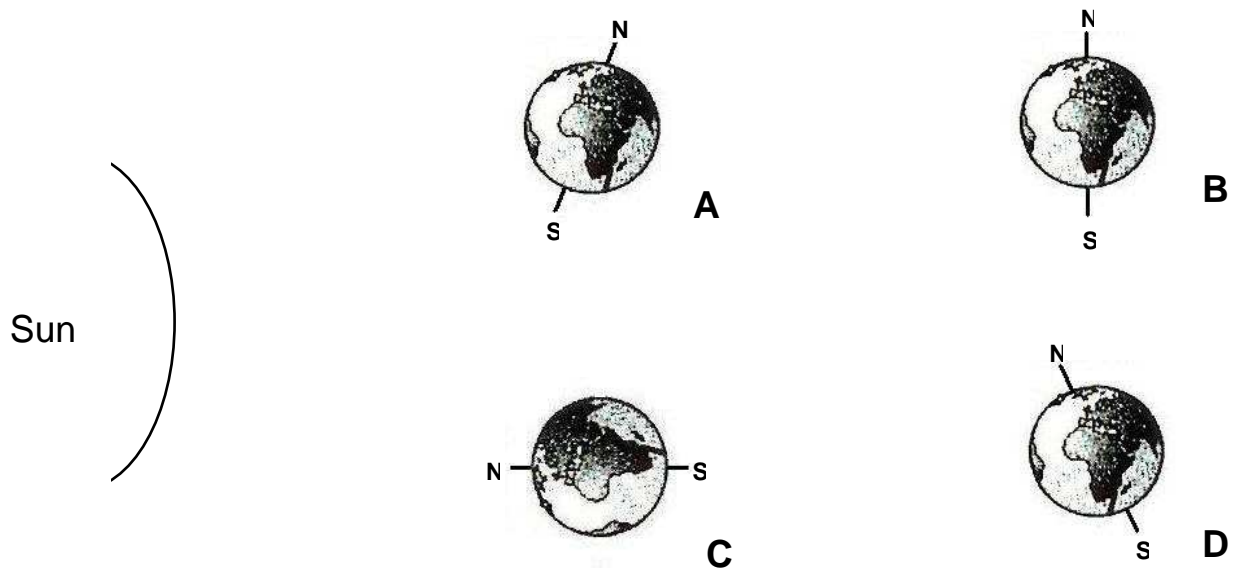
The Moon completes one orbit of the Earth once everydays.

1 mark

The Earth completes one orbit of the Sun every.....days.

1 mark

b) The diagram shows possible positions of the Earth relative to the Sun.



i) In which of these positions is the Earth when it is winter in Malta?

1 mark

ii) Why? _____

2 marks

c) Explain why the weather is warmer in Malta during the summer.

2 marks

12) Respiration takes place in all cells.

a) Write the word equation for respiration.



b) Explain how the body gets the glucose needed?

2 marks

c) Which is the most important thing produced during respiration?

2 marks

d) How are the chemicals produced by respiration lost from the body?

2 marks

13)a) Name two infectious diseases and the microbe that causes each disease.

infectious disease	microbe
1.	
2.	

4 marks

b) Write two ways in which infections can be spread.

2 marks