DIRECTORATE FOR QUALITY AND STANDARDS IN EDUCATION
Department for Curriculum Management and eLearning
Educational Assessment Unit
Annual Examinations for Secondary Schools 2012

Trac

FORM 2 **INTEGRATED SCIENCE** **TIME: 1h 30min**

Name: _____ **Class:** _____

ANSWER ALL QUESTIONS

1. a. Vinegar is sometimes put on chips. It has a sour taste.
What does the taste tell you about vinegar? Tick (✓) the correct box.

It is poisonous. ☐ It is an acid. ☐ It contains sugar. ☐

1 mark

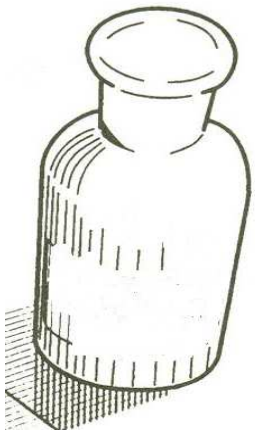
b. Red cabbage can be used to test acids and alkalis. It is bright red in acids and purple in alkalis.

(i) What colour is it in lemon juice? _____ 1 mark

(ii) Fill in the blanks:
Substances, which change colour when you add acids or alkalis, are called _____. Litmus paper is one example. It is _____ in acids and _____ in alkalis. The universal indicator changes colour in acid and alkali. It is green in _____ solutions.

4 marks

c. The labels of three chemical bottles have fallen off. The labels say *Distilled water*, *Sodium Hydroxide* and *Ammonia*.



(i) Which indicator would you use to match the bottles with their labels? Underline the correct answer.

Litmus Paper **Universal Indicator**

(ii) Give a reason for your answer. 1 mark

_____

2 marks

d. Some people suffer from acid stomach. Some medicines, such as *Milk of Magnesia*, reduce the pain.

(i) Is *Milk of Magnesia* an acid or an alkali?

_____

1 mark

(ii) What is the reaction between the acid in the stomach and *Milk of Magnesia* called?

_____ 2 marks

(iii) Give another example of this type of reaction.

_____ 2 marks

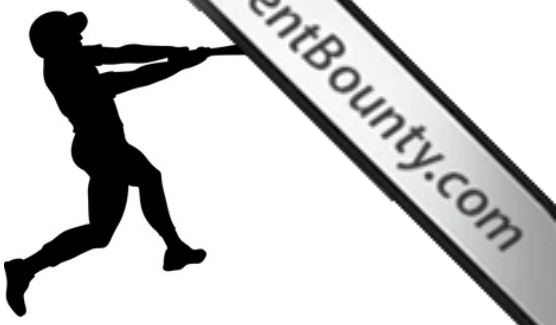
2. Draw an arrow on each of the following diagrams to show the direction of the force named:

a. The weight of a woman hanging from the bar.

b. The force of the road on the tyres of a parked car.

c. The force of friction between the shoes and the ground.

d. The force of the bat on the ball.



4 marks

3. Steve rolls a ball of plasticene on the floor. The ball stops after some time.

a. Explain why the ball slows down and stops.

_____

_____

2 marks

b. Does the ball roll further on a flat wooden surface or on grass?

_____

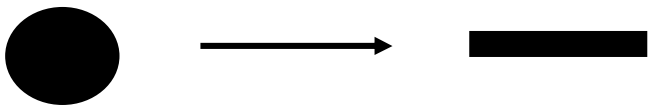
1 mark

Give a reason for your answer.

_____

2 marks

c. Steve changes the shape of the plasticene ball by squashing it. It becomes flat.



(i) Is there any change in the mass of plasticene? _____

(ii) Is there any change in the weight of the plasticene? _____

2 marks

d. Fill in the blanks:

He floats the plasticene in a bowl of water. The plasticene floats on the water because there is a force called _____ keeping it afloat. 1 mark

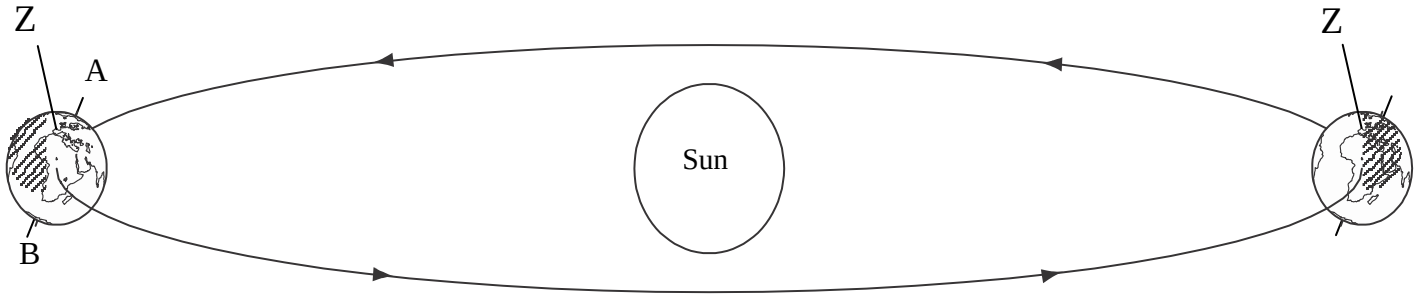
4. These are some facts about the Solar system. Write the correct word for e
Each word can be used once, more than once or not at all.

Night	Sun	Venus	28 days	Mercury	a season
noon	gravity	24 hours	phases	365 days	

a.	the changes in the appearance of the Moon as it orbits the Earth	
b.	this stops the Moon from moving away from Earth	
c.	a hot spherical star	
d.	the time taken by the Moon to orbit the Earth	
e.	the time taken by Earth to spin once on its axis	
f.	the time when part of the Earth is facing away from the Sun	
g.	the planet nearest to the Sun	
h.	the hottest planet in the Solar system	

8 marks

5. This diagram shows the Earth at two different positions in its orbit.



_____ _____

a. What is the line A – B called? _____ 1 mark

b. What is the path taken by Earth round the Sun called? _____ 1 mark

c. Imagine that you are living in a country marked Z. At one position, it is summer, at the other it is winter. Write ‘summer’ and ‘winter’ under the correct parts of the diagram. 2 marks

d. Draw an X on the diagram to show where the Earth would be when it is spring. 1 mark

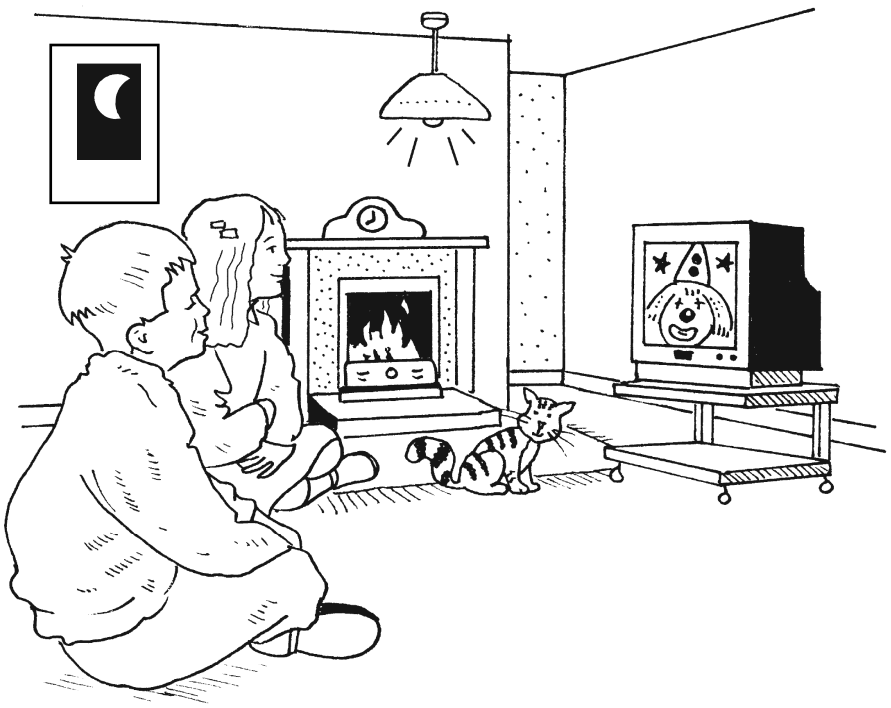
e. Give the reason why there are seasons on Earth.

_____ 1 mark

6. a. Write down **THREE** sources of light shown in the drawing.

_____ _____ _____

3 mark



b. Draw rays of light to show how the boy can watch television. 1 mark

c. Draw rays of light to show how the girl can see the clock. (The clock is on the fireplace). 2 marks

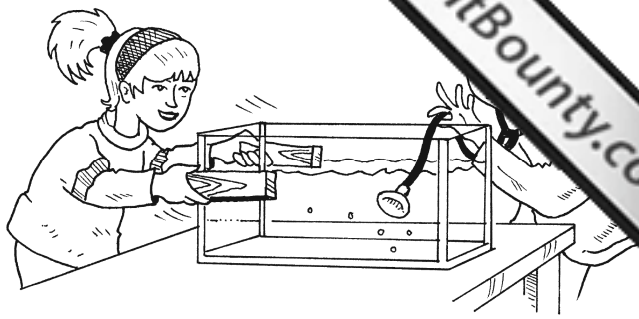
d. Light travels faster than sound but the children are seeing light and hearing sounds at the same time. Why is this?

_____ 2 marks

e. The moon can be seen through the window. Where does the light of the Moon come from?

_____ 1 mark

7. Two students are testing the movement of sound through different objects. They are using a stethoscope, two pieces of wood and a tank of water.
The students knocked the pieces of wood together and used the stethoscope to listen to the sounds.



a. This is a report of their experiment. Some words are missing. Use some of the following words to fill in the blanks:

hear	**speeds**	**stethoscope**	**wood**

I knocked the pieces of _____ together. I used the _____ to listen to the sound. I recorded how well I can _____ the sound travelling through different materials. Sound travels at different _____ through solids, liquids and gases.

4 marks

b. (i) Fill in the blanks.

Sound travels fastest in _____ and slowest in _____.

2 marks

(ii) Use the idea of particles to explain your answer to (i).

_____

_____

2 marks

8. From a supermarket we can get many different foods.

a. Give **THREE** reasons why we need food.

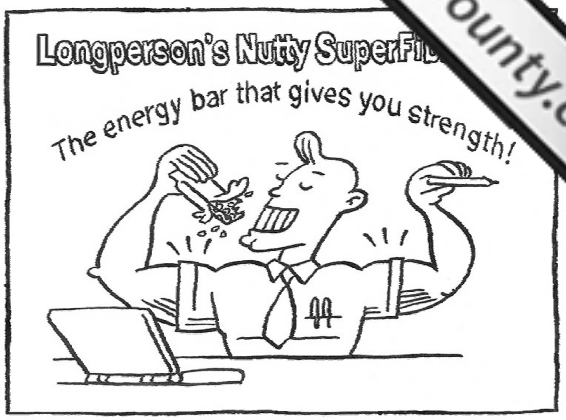
_____

_____

_____

3 marks

b. A supermarket is selling a new chocolate bar. This poster is being used to advertise this new chocolate.



The poster shows that the bar contains fibre. Why do we need fibre in our diet?

_____

_____

2 marks

c. Tick (✓) **TRUE** or **FALSE** for each of these sentences.
THREE sentences are FALSE. For the false sentences, write out the correct sentence on the lines below.

		TRUE	**FALSE**
(i)	The chocolate bar in the poster is rich in carbohydrates. _____	☐	☐
(ii)	Meat contains lots of carbohydrates. _____	☐	☐
(iii)	Meat is a good source of fibre. _____	☐	☐
(iv)	Fats are a good source of energy. _____	☐	☐
(v)	Carbohydrates are a good source of energy. _____	☐	☐
(vi)	We need proteins as a source of energy. _____	☐	☐

9 marks

9. This question is about body defence.

a. Fill in the blanks:

(i) A chemical in your tears kills _____.

(ii) Your nose produces _____ which traps microbes.

(iii) _____ blood cells destroy microbes.

3 marks

b. Answer the following questions:

(i) Explain how the stomach helps to stop the body becoming infected by microbes.

_____2 marks

(ii) Why do you think it is important for clots (scabs) to form over cuts quickly?

_____2 marks

10. Read these sentences and then answer the following questions:

Tuna is a fast swimming fish. It is able to survive in cooler waters and thus is found in a wider range of sea environments than other types of fish.

Tuna eats small fish or animals such as sardines, herrings, shrimps and shellfish. These in turn feed on plankton. Tuna is an important commercial fish. Sharks eat tuna but the main enemy for tuna is overfishing. Some countries are enforcing laws and restricting tuna fishing as research shows that tuna may become extinct.

a. Write down **TWO** important adaptations found in tuna.

_____

_____ 2 marks

b. Use the information in the extract to write down a food chain.

_____ 2 marks

c. From your food chain, give one example of an animal which is both a predator and a prey: _____ 1 mark

d. Explain the meaning of the words

(i) Overfishing: _____

(ii) Extinct: _____

2 marks

e. State what happens to tuna if:

(i) all the sharks die out _____

(ii) all sardines, herrings, shrimps and shellfish die out

_____

2 marks

11. The picture shows an old rusty bicycle.

a. Suggest the best way to prevent rusting in the bicycle's

(i) iron frame:

_____

(ii) iron chain:

_____

2 marks

b. Why is it beneficial to stop rusting?

_____

1 mark

c. Complete the following word equation that shows the reaction of rusting.

Iron + _____ ⟶ _____

2 marks

d. Sometimes aluminium is used instead of iron. Give **ONE** advantage of using aluminium.

_____

1 mark

12. This question is about burning.

a. Burning is a chemical reaction. What other word is used for burning?

_____

1 mark

b. Look at the diagram of the candle burning.

(i) What physical change is taking place?

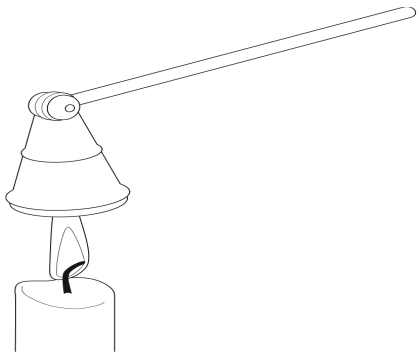
_____

(ii) What chemical change is taking place?

_____

2 marks

c. Use the fire triangle to explain why:



i. the flame goes out when a candle snuffer is placed over the lighted candle.

_____

_____

1 mark

ii. a fire-fighter pours water onto a burning bush.

_____

1 mark

iii. in large woods and forests people cut down some of the trees to form 'fire breaks'.

_____

1 mark

iv. most forest fires occur in summer.

_____

1 mark

- End of paper. Please check your work again -