SECONDARY SCHOOL ANNUAL EXAMINATIONS 2008

DIRECTORATE FOR QUALITY AND STANDARDS IN EDUCATION

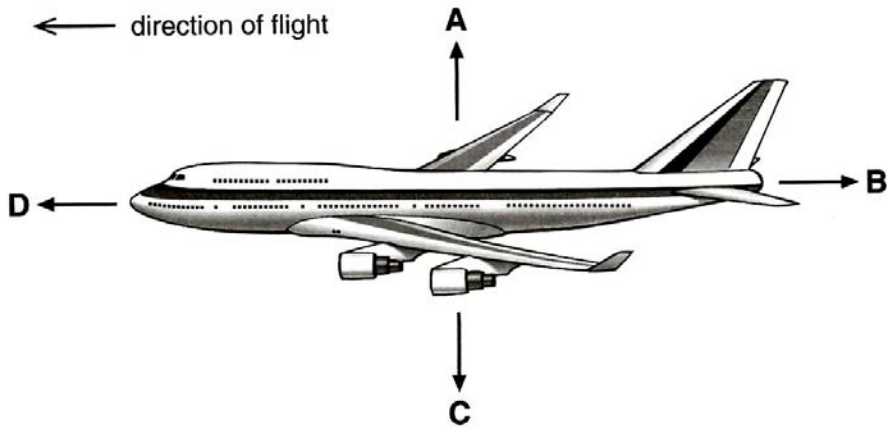
Educational Assessment Unit

FORM 2 **INTEGRATED SCIENCE** **Time 1hr 30 min**

Name _____ Class _____

ANSWER ALL QUESTIONS

1) The diagram shows four forces acting on a plane in flight.



a) Which arrow shows **weight**? _____

1 mark

b) Which arrow shows **air resistance**? _____

1 mark

c) i) Which arrow shows the **pushing force** of the engines? _____

1 mark

ii) What happens if **one** of the engines stops working?

_____

2 marks

d) What happens if force C is **bigger** than force A?

_____

1mark

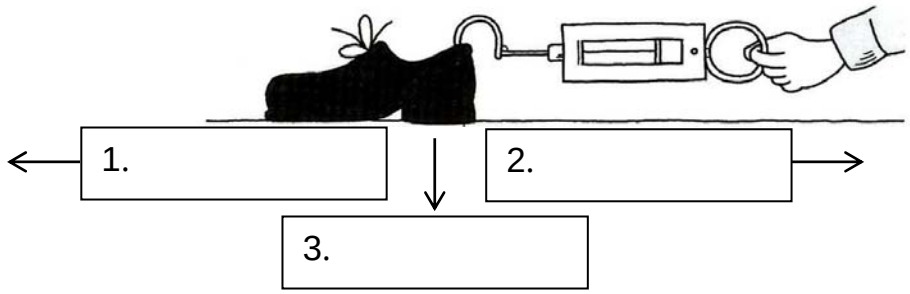
e) If force D is bigger than force B, the plane will:
Tick ☑ **one** correct answer.

- ☐ move faster
- ☐ slow down
- ☐ fall down
- ☐ move upwards

1 mark

2) Andrew is measuring the force needed to pull his shoe across a wooden floor.
He attaches an instrument to measure his pulling force.
The picture shows Andrew pulling the shoe.

a) Label the arrows on the picture to say what forces they show.



3 marks

b) What is the name of the instrument he is using?

_____

1 mark

c) The reading on the meter is 9N.
What does N stand for? _____

1 mark

d) Andrew repeated the same experiment on a carpet and on ceramic tiles.
He put all his results in a table.

Floor surface	Force needed to pull the shoe (N)
ceramic tiles	3
wood	9
carpet	12

i) Why is the force bigger on the carpet than on wood?

_____

1 mark

ii) Put the 3 floor surfaces in the table above in order, starting with the one which has the biggest force of friction first.

_____

3 marks

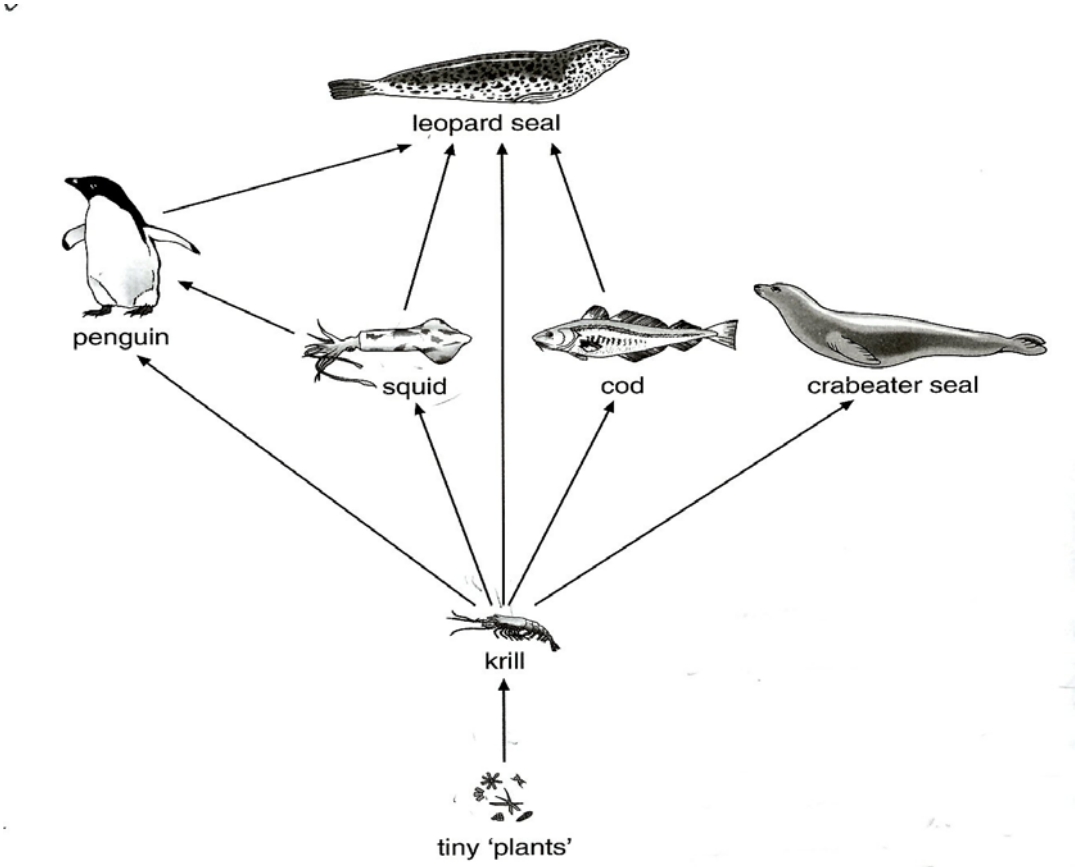
iii) Which floor surface is the most dangerous to walk on and why?

_____

_____

3 marks

3) The drawing below shows part of a food web in the sea round Antarctica



a) From the food web name:

i) a herbivore _____ ii) a carnivore _____

iii) a producer _____ iv) a predator _____

v) a prey of the predator you wrote in iv) _____

5 marks

b) From the food web, give the names of **two** animals that **only** eat krill.

1. _____ 2. _____

2 marks

c) Write down **two** food chains from the above food web.

_____

_____

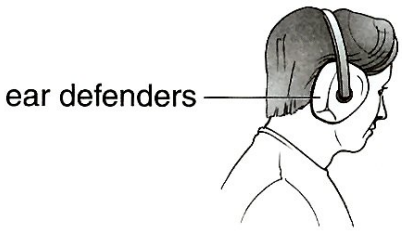
4 marks

d) What is the first source of energy in the above food web? _____

2 marks

4) Three pupils watched a firework display.

a) A man lit the fireworks. He wore ear defenders.
Why should he wear ear defenders when he is close to loud fireworks?



_____

_____

2 marks

b) A rocket exploded making a loud sound and a bright flash.
Peter, Sabrina and Nicole were standing at different distances from the rocket.


Nicole


Sabrina


Peter

When the rocket exploded, Nicole heard the quietest sound.
Why did she hear the quietest sound?

_____

1 mark

c) Nicole saw the flash before she heard the sound.
What does this tell you about the speed of light and the speed of sound?

_____

1 mark

d) Complete the sentences below.

i) Sabrina and Peter could **see** the rocket explode because it gave out _____

ii) They could **hear** the rocket explode because it gave out _____

2 marks

e) When the rocket stopped burning it fell to the ground.
What **force** caused it to fall to the ground?

_____

1 mark

5) Musical instruments are all sources of sound.
The sound is produced when something vibrates as the instrument is played.

Fill in the missing information in the table below.

Musical instrument	What vibrates?
drum	
	strings
	the metal
trumpet	
violin	

5 marks

6) This question is about acids and alkalis.
Fill in the blanks using words from the following list.

neutral lemon juice red universal acid soap

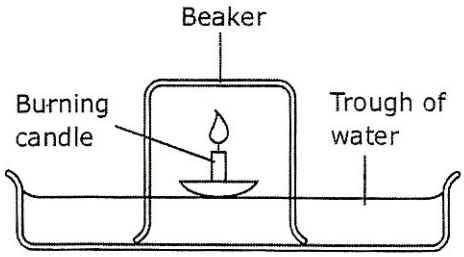
blue colour neutralisation toothpaste tomatoes

- Indicators change _____ in acids and alkalis.
- _____ indicator tells you how strong an acid is.
- In an alkali, the colour of litmus is _____.
- pH 1 shows a strong _____.
- pH 7 shows a _____ substance.
- The reaction between an acid and an alkali is called _____.
- Two acids found at home are _____ and _____.
- Two alkalis found at home are _____ and _____.

10 marks

7) A burning candle is floating on water and a beaker is placed over the burning candle.

a) What happens to the flame after a short time?



_____

1 mark

b) Why?

_____

_____

2 marks

c) What happens to the water in the beaker?

_____

1 mark

d) This word equation shows what happens when wax burns.

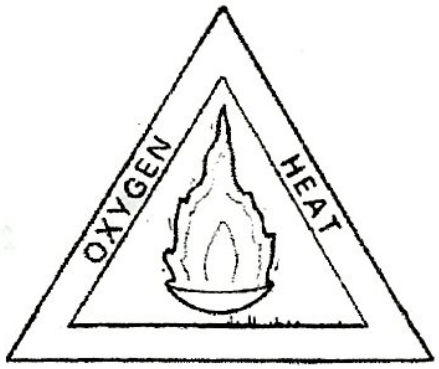
wax + oxygen $\longrightarrow$ carbon dioxide + water + energy

Which 2 things show that a chemical reaction takes place.
Tick ☑ the **two** correct answers.

- ☐ oxygen is a gas
- ☐ a new gas is produced
- ☐ energy is produced
- ☐ carbon dioxide is transparent

2 marks

8) The diagram shows the fire triangle.



a) Fill in the missing word in the fire triangle.

1 mark

b) What does the fire triangle mean?

_____

_____

2 marks

c) Fire-fighters use this knowledge to put out a fire.
Fill in the blanks:

i) Cool things down with water. This removes _____.

ii) Choke a fire with foam. This removes _____.

iii) Let it burn out. This removes _____.

3 marks

9) We eat food.

a) Give **three** reasons why we need food?

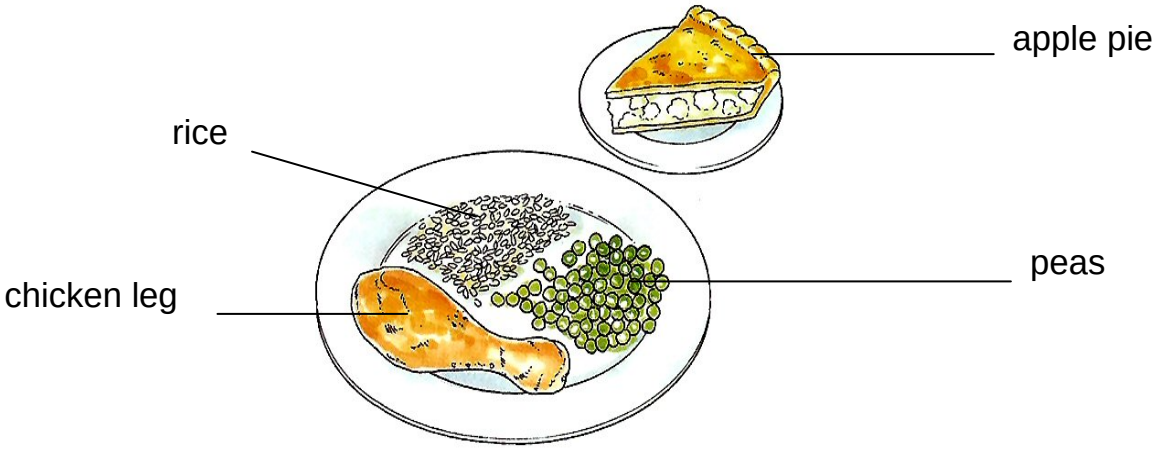
_____

_____

_____

3 marks

b) The diagram shows a typical meal.



i) Name **two** parts of this meal that are good sources of **carbohydrates**?

_____ _____

2 marks

ii) a. Which part of this meal is rich in proteins?

_____

1 mark

b. Give one reason why we need proteins in our diet.

_____

1 mark

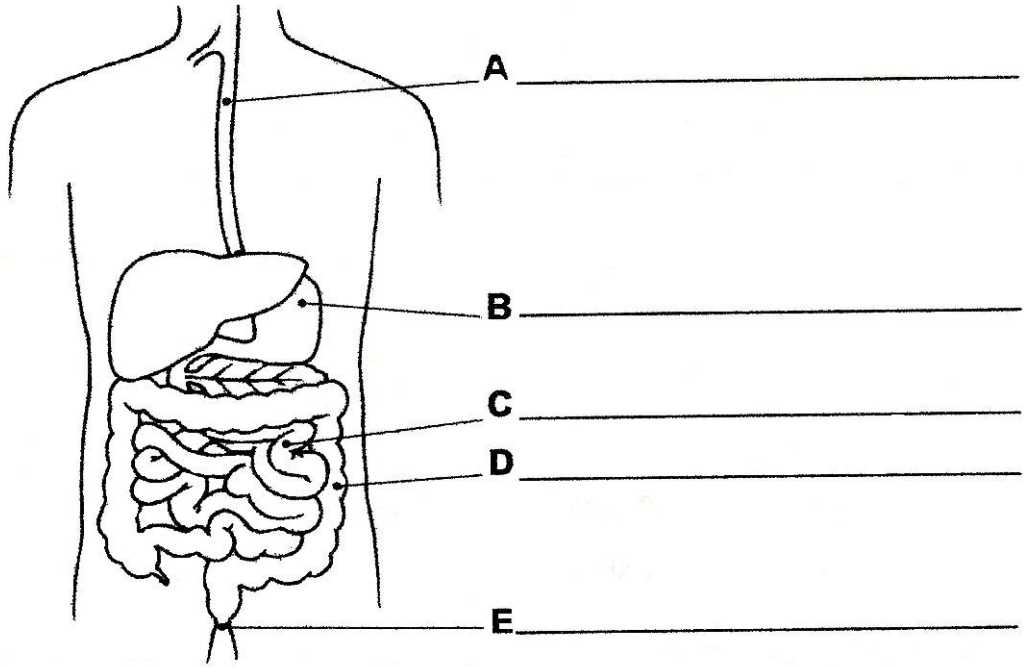
c) Brown bread contains a lot of fibre.
Why is it important that we eat food that is rich in fibre?

_____

1 mark

10) The food we eat is digested in the digestive system.
The diagram shows the digestive system.

a) Label the diagram.



5 marks

b) Explain why food has to be digested before it can be absorbed into the bloodstream?

_____

_____

2 marks

c) Where in the digestive system is food broken down mechanically?

_____

1 mark

d) What is the work of the enzymes in the digestive system?

_____

2 marks

e) Where is acid mixed with the food?

_____

1 mark

f) Where is digestion completed and food absorbed into the bloodstream?

_____

1 mark

11) The diagram shows part of the Sun and the Earth. (not drawn to scale)

a) Shade the part of the Earth that is in darkness.

1 mark

b) A, B and C are three places on Earth.
   i) Which place has the highest temperature?

   _____

1 mark

   ii) Why?

   _____

1 mark

c) What season would it be in the northern hemisphere when the Earth is in this position?

   _____

1 mark

d) If the Earth's axis were not tilted how would the seasons be affected?

   _____

1 mark

e) How long does it take for the Earth to turn once on its axis?

   _____

1 mark

f) How long does it take the Earth to travel once in its orbit?

   _____

1 mark

12)Read the following passage then answer the questions below.

Mark decided to use his telescope just as the Sun was going down. He could see Venus shining brightly in the evening sky. The Moon was also clear, and as the sky became darker he could see more stars. Some of the objects he saw are in the solar system.

a) Which two objects mentioned in the above passage are **sources of light**?

_____ _____

2 marks

b) Which two objects mentioned in the above passage **reflect light**?

_____ _____

2 marks

c) Which objects seen by Mark are not parts of our solar system?

_____

1 mark

d) Write the objects below in order of size starting with the smallest first.

Earth Sun Moon solar system

_____ _____ _____ _____

2 marks

End of paper. Please check your work again.