

NAME:	SCIENCE TEACHER :	9A
-------	-------------------	-----------

SCIENCE

Year 9 Examination 2010

9A – 40 marks

Make sure that you have answered all the questions in paper 9B before you start this paper

Time allowed for both examinations: 2 hours

Answer all questions in the spaces provided on the paper.

You may use a calculator.

Show all your working in calculations; marks are awarded for it.

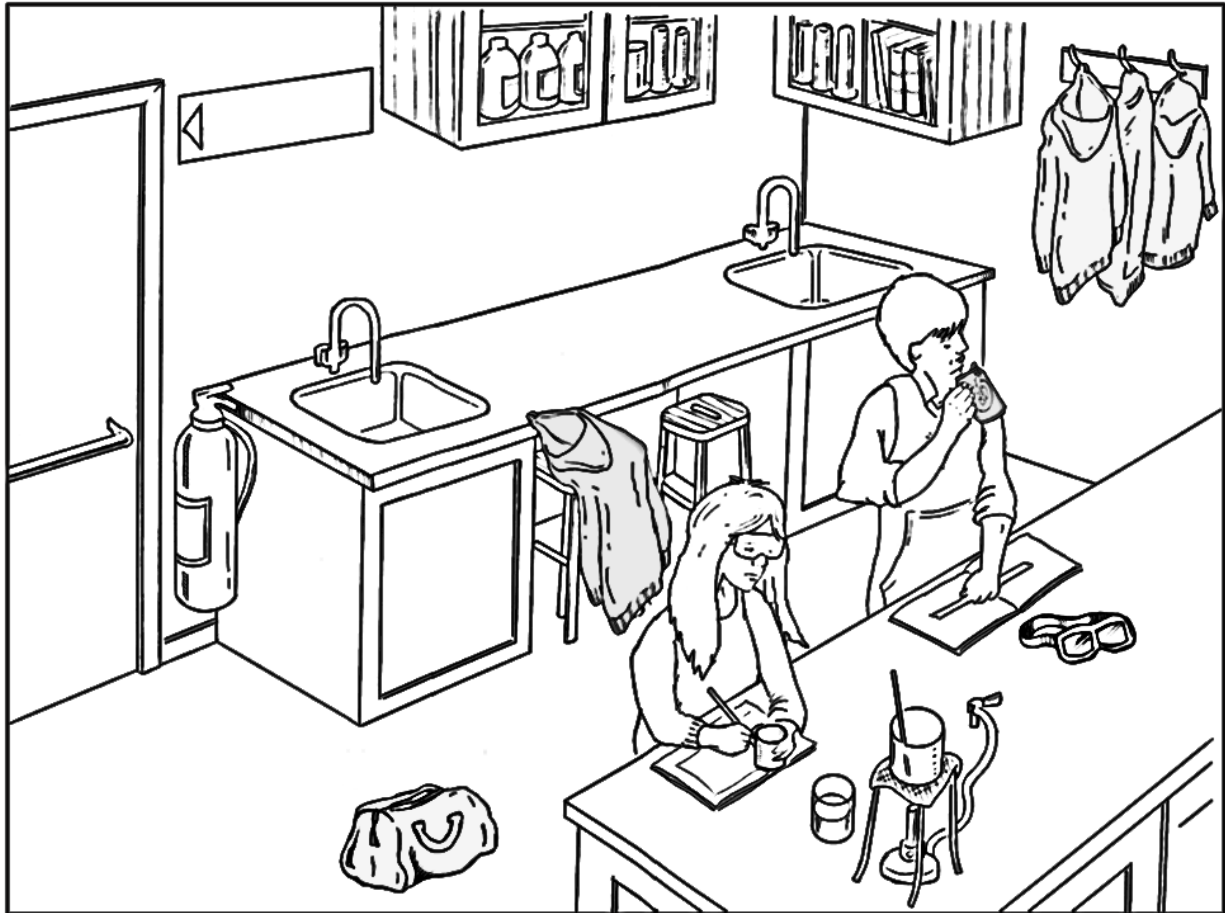
Give units for all answers (e.g. kg or m) unless they are already provided.

For Teacher Use

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Marks gained															
Marks available	3	7	1	4	7	1	3	2	2	2	3	1	2	2	40

Question One [3 marks]

- (a) Look carefully at the drawing of a science lesson. The students are not carrying out their experiment in a safe manner. In the space below write five safety rules that will help the students keep safe in the laboratory.



1.

2.

3.

4.

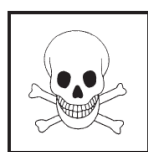
5.

The following hazard symbols are found on some chemicals in the laboratory.



Oxidizing

A



Toxic

B



Highly
flammable

C



Radioactive

D



Irritant

E



Corrosive

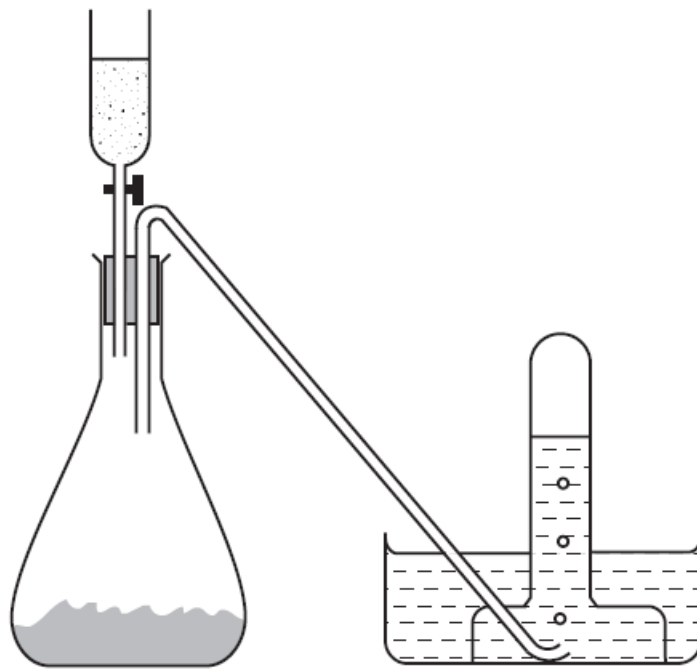
F

- (b) Complete the table below to show which warnings would appear for each of the chemicals. The first one has been completed for you.

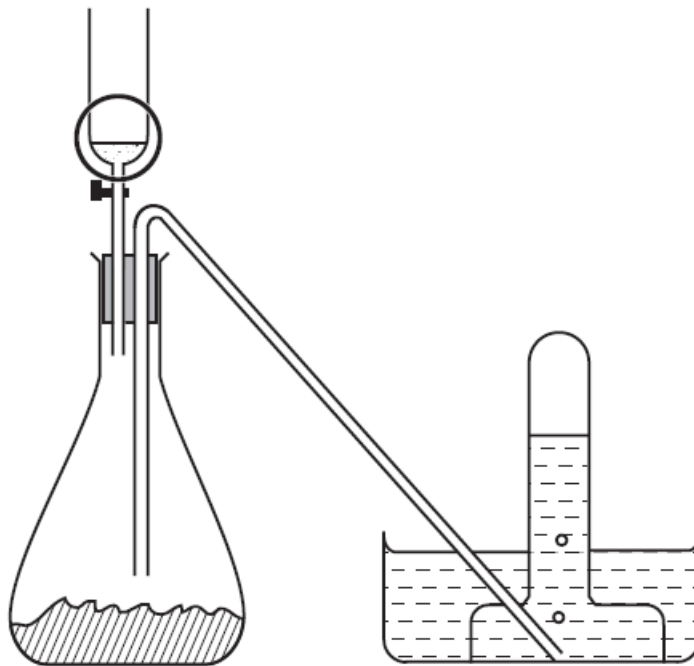
Chemical	Letters	Hazard
Bleaching powder	A F	Oxidising Corrosive
Crude oil		Toxic Highly flammable
Carbon monoxide	C E	

- (c) Look the diagrams below. There are 6 differences. Circle 5 more **on diagram B**. One has been done as an example.

DRAWING A

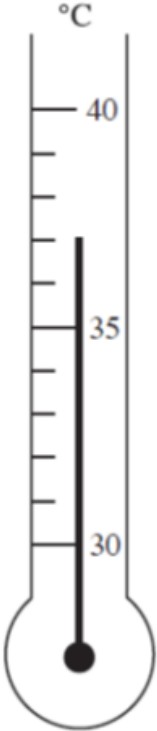
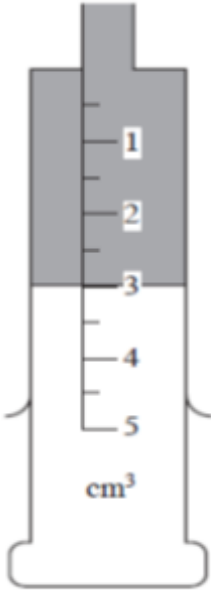




DRAWING B



Question Two [7 marks]

- (a) Look at the drawings of the apparatus shown below. Under each drawing, write in the reading shown on the apparatus.

<p style="text-align: center;">Thermometer</p> 	<p style="text-align: center;">Syringe</p> 
<p style="text-align: center;">Stopwatch</p> 	<p style="text-align: center;">Clock</p> 




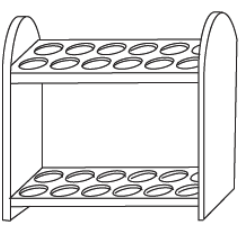
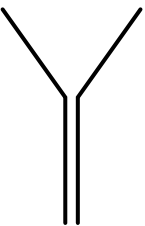
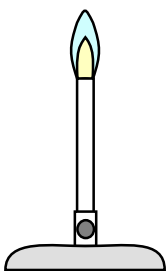
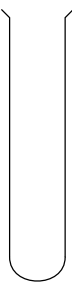
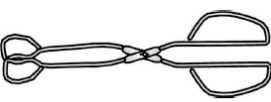
(b) Use these words to answer the questions below.

temperature • thermometer • degrees celsius °C

(i)	This is used to measure temperature	
(ii)	This is the unit used to measure temperature	
(iii)	This describes how hot something is	

(c) Match the drawings of the apparatus with its label. One has been completed for you.

Bunsen burner • filter funnel • ~~measuring cylinder~~ • safety goggles
test tube • test tube rack • tongs • tripod and gauze

			
<i>measuring cylinder</i>			
			

- (d) Look carefully at the list of apparatus below. Decide which apparatus is the best to use during an experiment. One has been completed for you.

Heat <i>proof mat</i>	<i>Tongs</i>	<i>Tripod</i>	<i>Gauze</i>	<i>Bunsen burner</i>
<i>Ruler</i>	<i>Thermometer</i>	<i>Metre rule</i>	<i>100 mL measuring cylinder</i>	<i>Beaker</i>
<i>Stop clock</i>	<i>10 mL measuring cylinder</i>	<i>Spatula</i>	<i>Safety goggles</i>	<i>Clock on the wall</i>
<i>Boiling tube</i>	<i>Conical flask</i>	<i>30 cm ruler</i>	<i>Test tube</i>	<i>Glass stirring rod</i>

<i>Use in experiment</i>	<i>Best apparatus</i>
Measuring the length of a pen	30 cm ruler
Taking the temperature of water	
Adding a little powder to a test tube	
Measuring the length of the hall	
Protecting the bench from chemicals	
Protecting the eyes	
Timing an experiment	
Picking up a hot piece of metal	

Question Three [1 mark]

Read the following information about dissolving salt.

- Add salt to water and it dissolves.
- Add salt to hot water and it dissolves faster than in cold water.
- Add salt to water and stir and it dissolves faster.
- Add lumps of salt to water and they dissolve slower than fine salt.

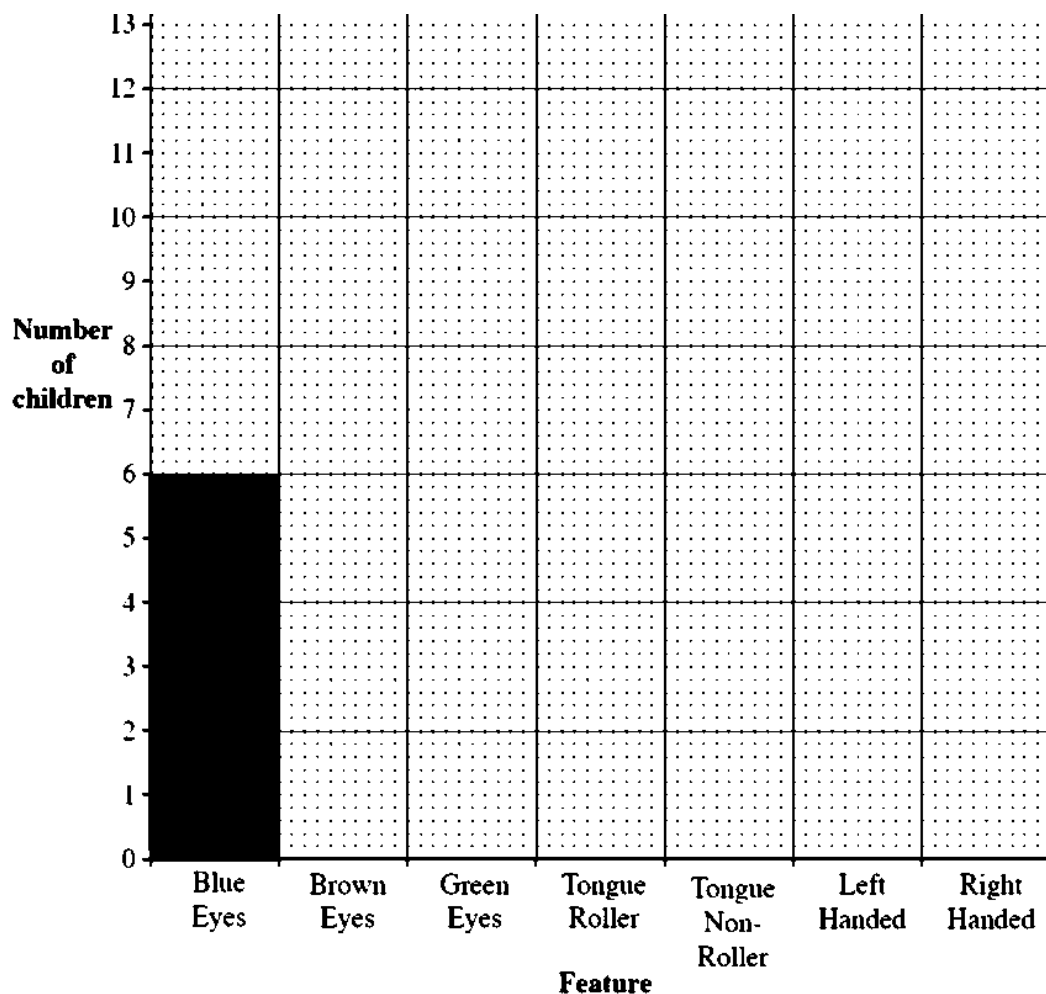
Write down two things you could do to help salt dissolve faster.

Question Four [4 marks]

The pupils in a class were investigating how different they were. They looked at eye colour, tongue rolling and which hand they used to write. The results are shown below.

Feature	Blue Eyes	Brown Eyes	Green Eyes	Tongue Roller	Tongue Non-Roller	Left-handed	Right-handed
Number of children	6	4	5	10	5	3	12

(a) Plot these results on the graph paper below. The first one has been done for you.



(b) Which eye colour was the most common in this class?

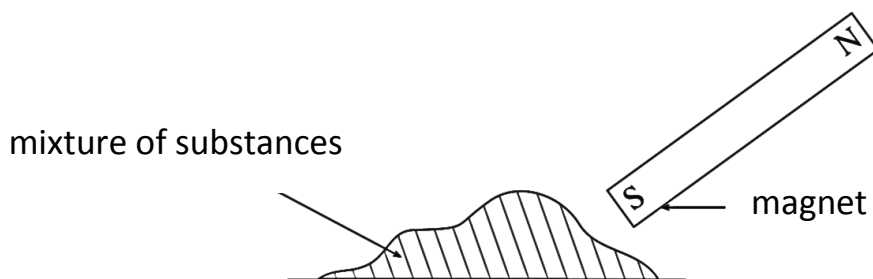
(c) Which two features had the same number of children?

Question Five [7 marks]

Some substances had been accidentally mixed together. They need to be separated. The three substances are salt, crushed glass and iron filings. The table below gives you some important information about the chemicals.

<i>Chemical</i>	<i>Reaction with water</i>	<i>Reaction with magnet</i>
Crushed glass	No reaction	No reaction
Salt	Dissolved	No reaction
Iron filings	No reaction	Attracted

In order to separate the mixture into three separate piles, the class used a magnet. The mixture was placed on a piece of paper. A magnet was brought near to the mixture.

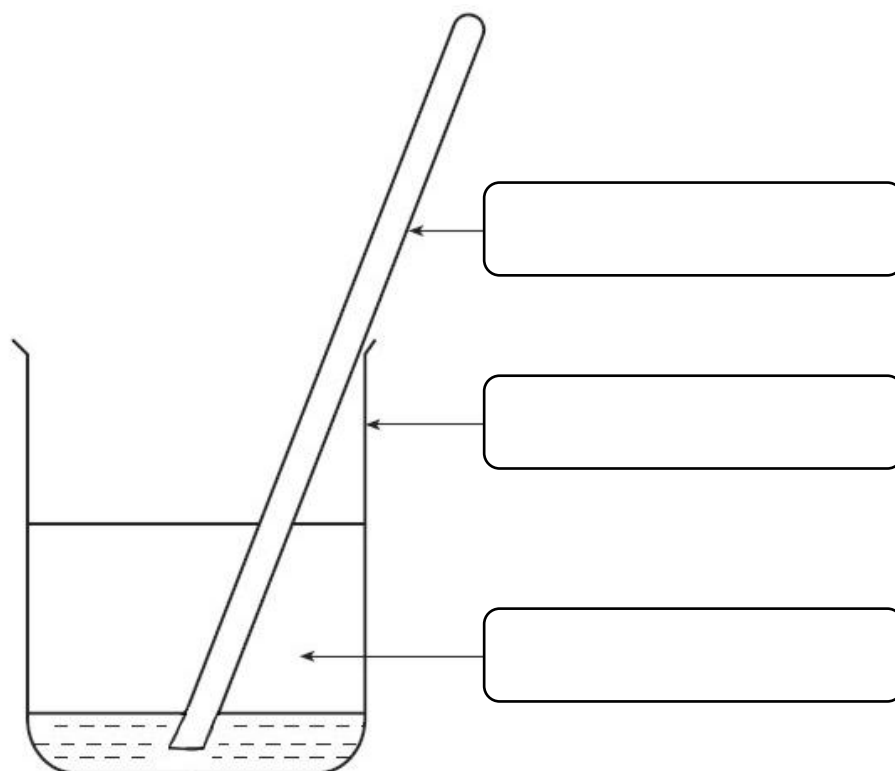


(a) Which substance(s) would stick to the magnet?

(b) Some warm water was added and the mixture was stirred until no more would dissolve. Why is it better to use warm water in this experiment?

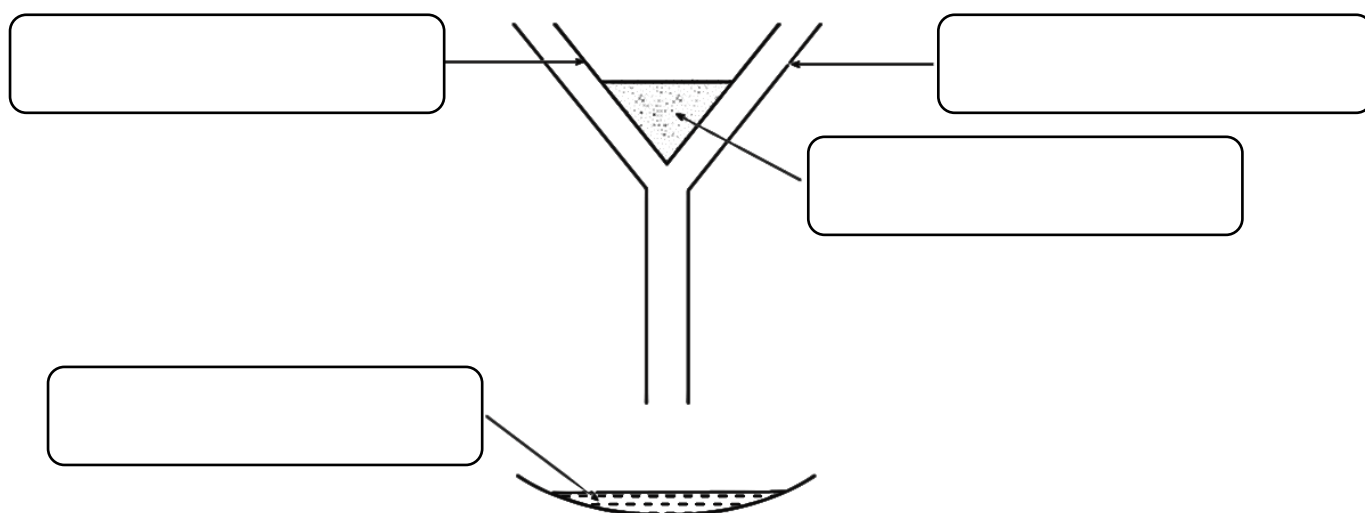
(c) Why is it better to stir the mixture?

The beaker looked like the drawing below.



(d) Label the beaker, glass rod, and solution on the drawing above.

Everything in the beaker was poured through a filter. The solution was collected in a glass evaporating dish. The apparatus used is shown in the drawing below.



(e) Label the filter funnel, substance, filter paper and solution on the drawing above.

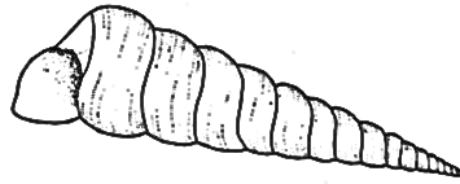
(f) Which substance is left in the filter paper?

Question Six [1 mark]

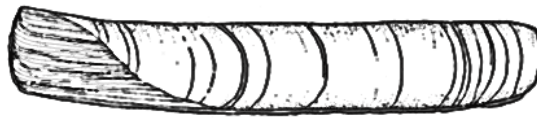
The drawings below show three different shells.



A

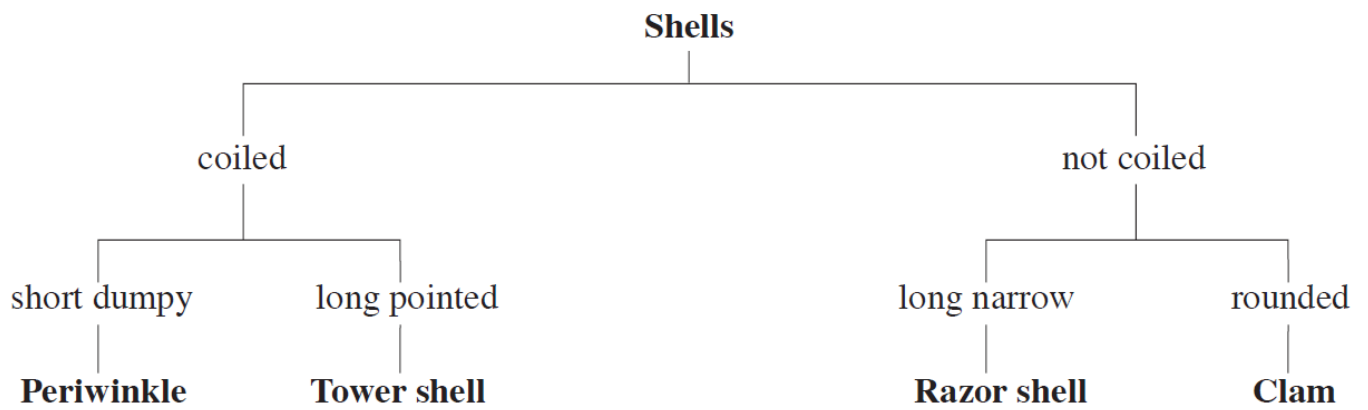


B



C

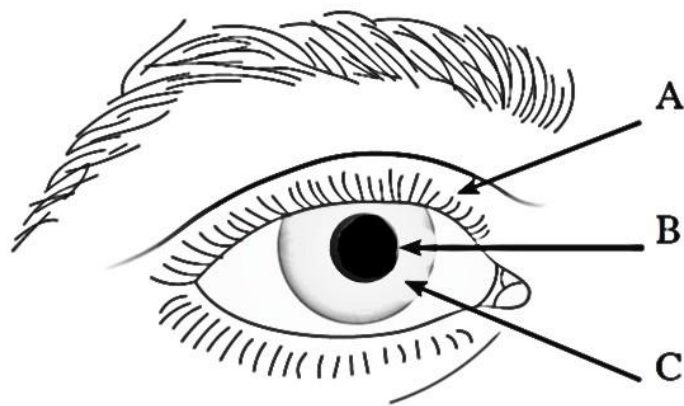
Use the chart below to name the three shells.



Shell A is	Shell B is	Shell C is

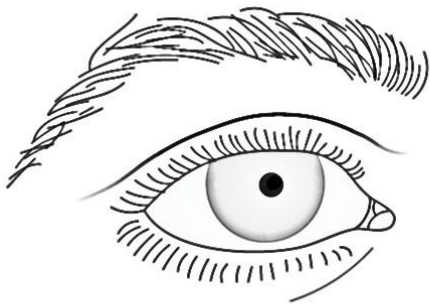
Question Seven [3 marks]

Look at the picture of the eye.

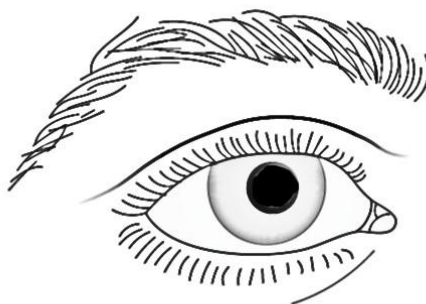


- (a) Which label A, B or C points to the pupil?

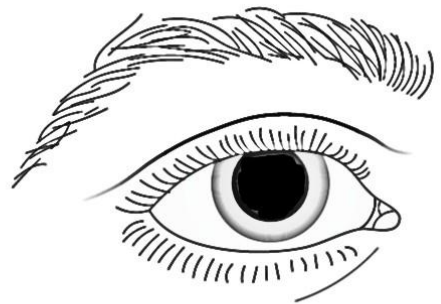
Look at the three eyes below



X



Y



Z

- (b) Which eye is in very dim light?

- (c) Which eye is in very bright light?

- (d) Give a reason for your answer to (c)

Question Eight [2 marks]

The table below shows some information about the substances in 500 mL of four types of milk available in a local store.

	Type of milk			
	Skimmed	Semi-skimmed	Full fat	Extra rich
Fat	0.5 g		21 g	30 g
Carbohydrate	30 g		26 g	26 g
Protein	18 g		19 g	21 g
Calcium	741 mg		705 mg	705 mg

500 mL of semi-skimmed milk contains:

730 mg of Calcium 20 g of Protein
30 g of Carbohydrate 10 g of Fat

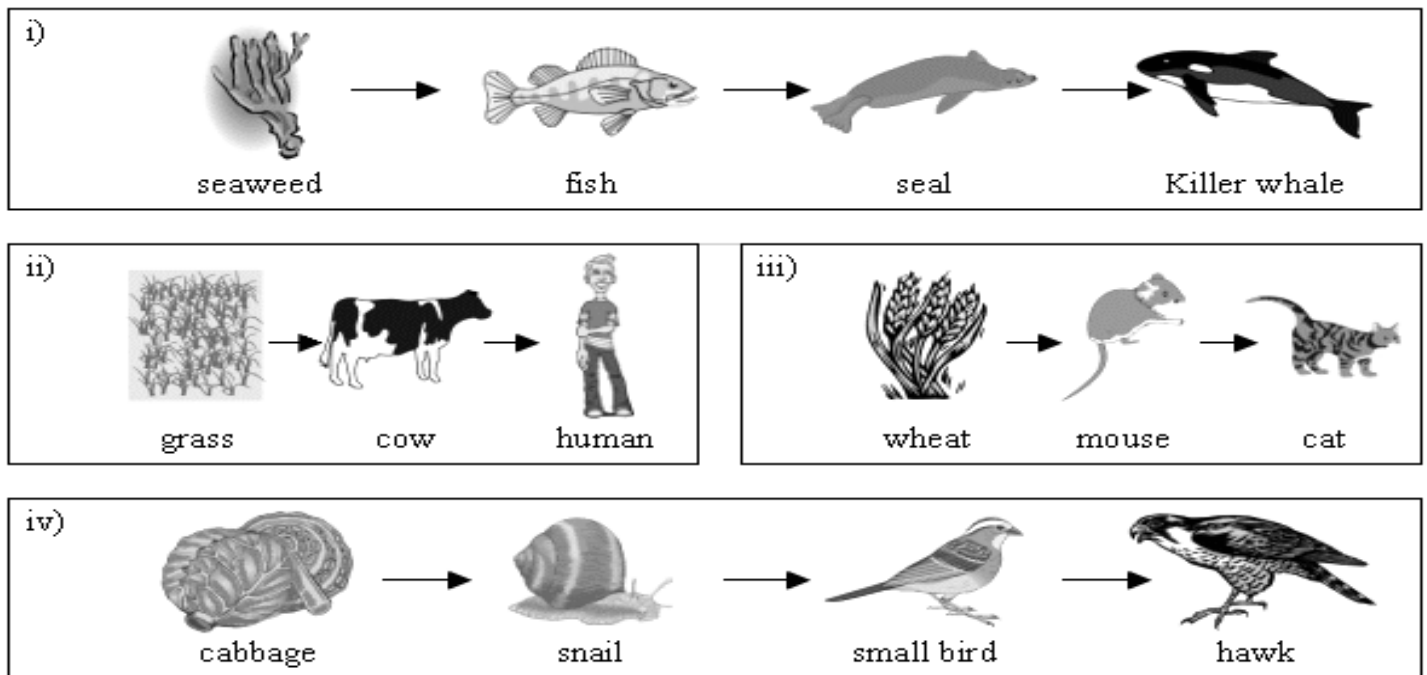


- (a) Add this information *to the table above*.
- (b) Which type of milk contains the most protein?

- (c) How much protein is found in 500mL of skimmed milk?

- (d) Which milk contains 42 g of fat **per litre** (in a litre)?

Question Nine [2 marks]



(a) For **all of the food chains above** identify all the producers, the herbivores, and the carnivores.

Living Organisms	Name(s)
Producers	
Herbivores	
Carnivores	

(b) Why do all food chains start with a producer?





Question Ten [2 marks]

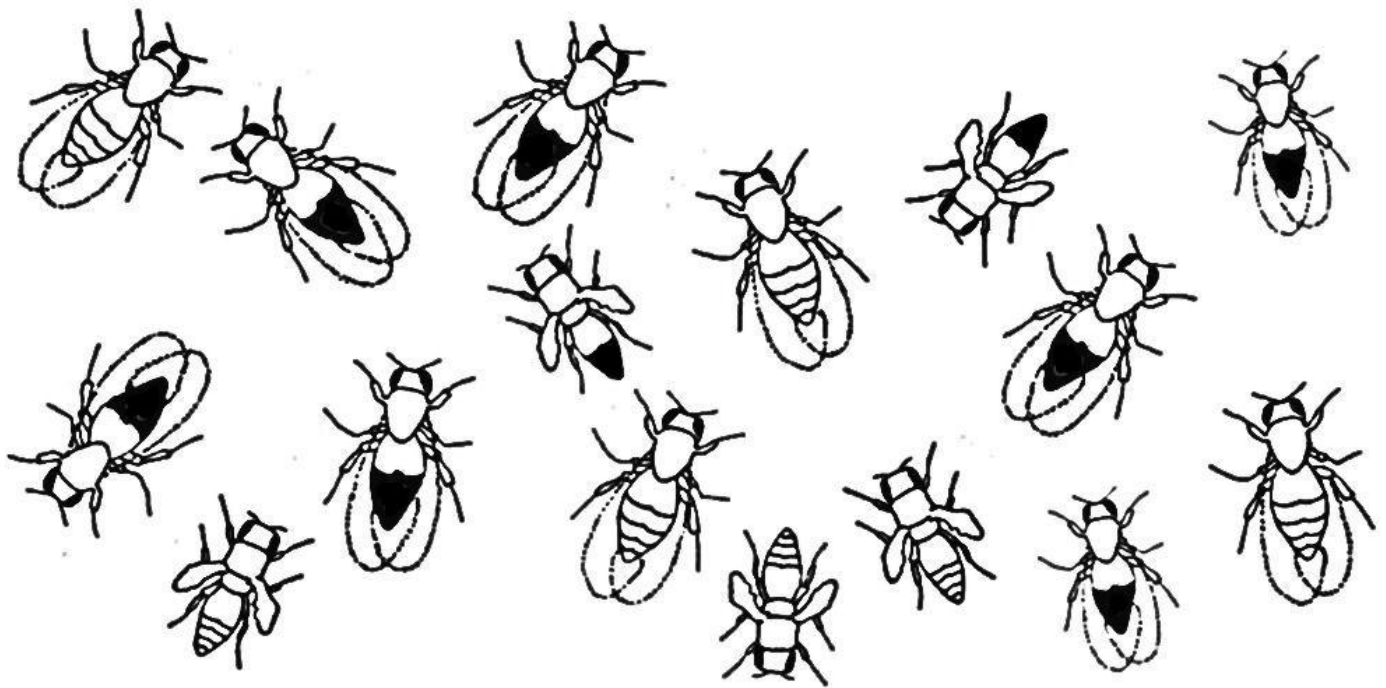
Male flies have a **black tip** to the abdomen.

Female flies do not have a black tip to their abdomen.

The flies have either normal wings or very small wings.

Look at the flies drawn below.

SEX	NORMAL WINGS	SMALL WINGS
MALE (Black tip to abdomen)		
FEMALE		



(a) How many of the flies are **male**?

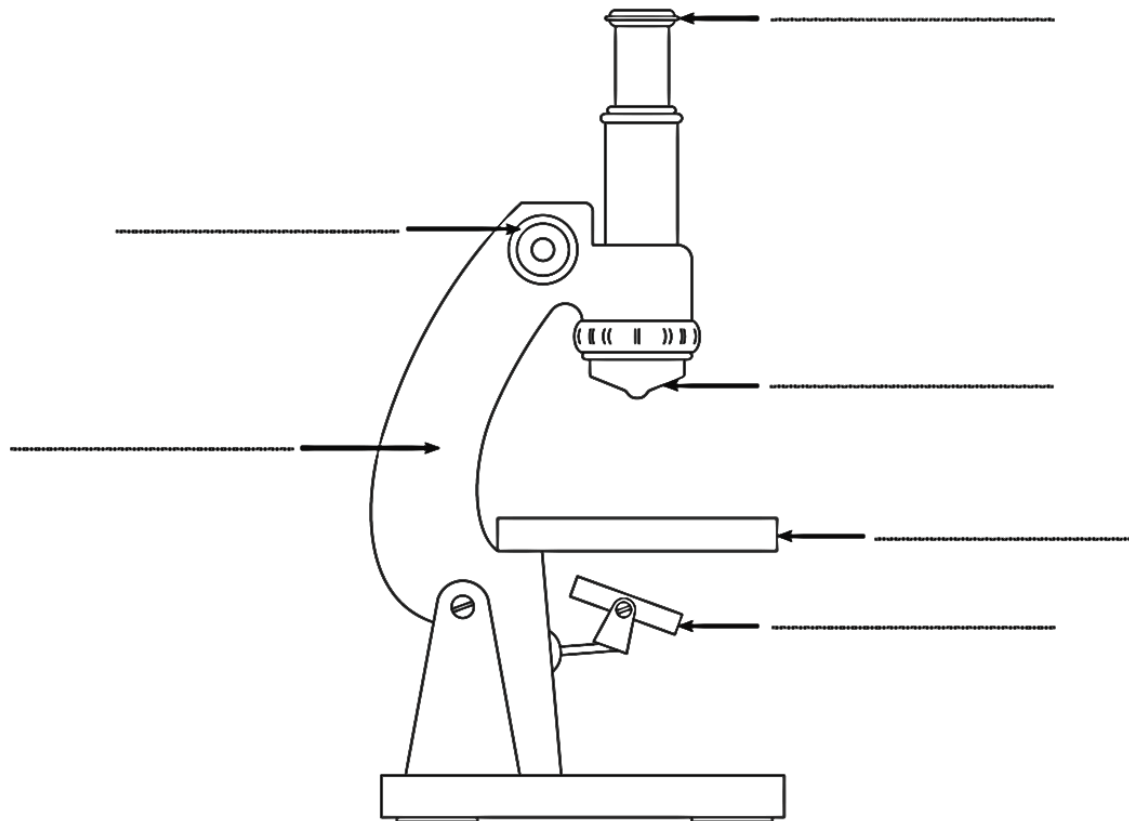
(b) How many of the flies have **normal** wings?

(c) How many of the **female flies** have small wings?

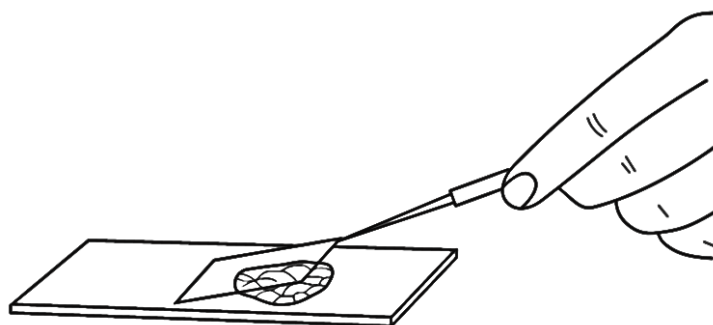
Question Eleven [3 marks]

(a) Use the words below to label the parts of the microscope.

stage • eyepiece • objective lens • mirror • body • focusing knob



(b) Below is a list of instructions for making the slide. They are in the wrong order.



Instruction A. Add two drops of water

Instruction B. Peel off a thin layer of onion skin

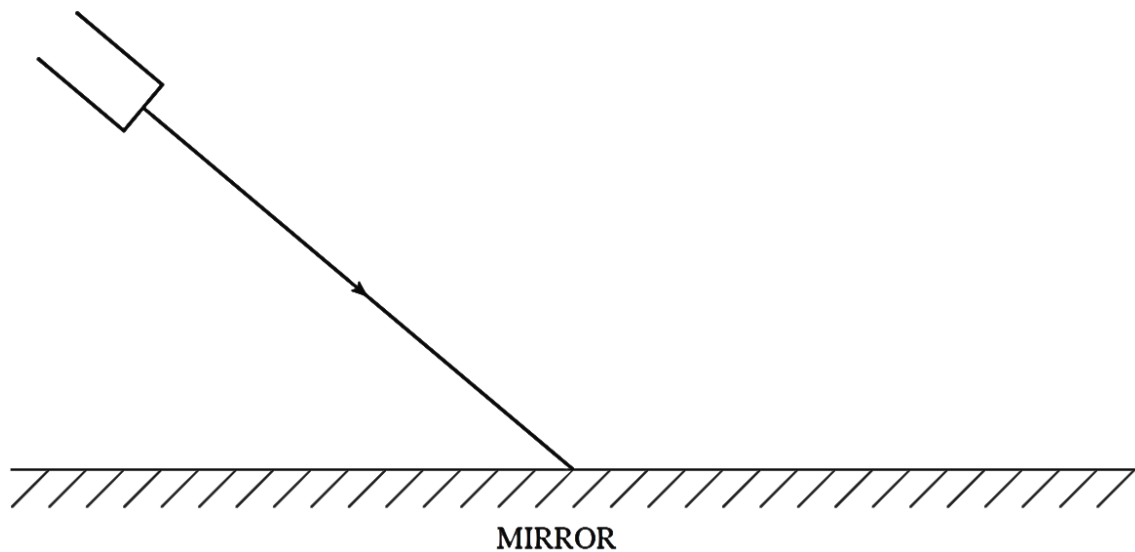
Instruction C. Cover the onion skin with a coverslip

Instruction D. Lay the onion skin on the microscope slide

Put the instructions in the correct order. Use the letters. ____ ____ ____ ____

Question Twelve [1 mark]

Light beams were shone onto the mirror as shown below.
Complete the diagram to show how the light was reflected.



Question Thirteen [2 marks]

Use the words given below to complete the table.

evaporating • condensing • freezing • melting

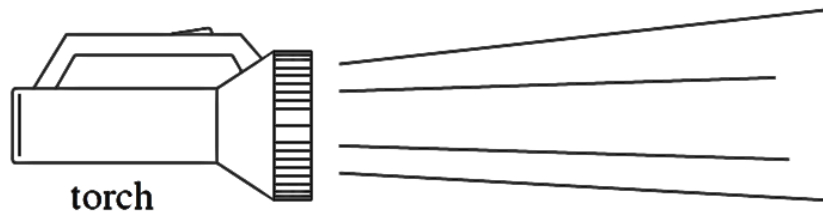
	CHANGE
GAS → LIQUID	
LIQUID → SOLID	
SOLID → LIQUID	
LIQUID → GAS	

Question Fourteen [2 marks]

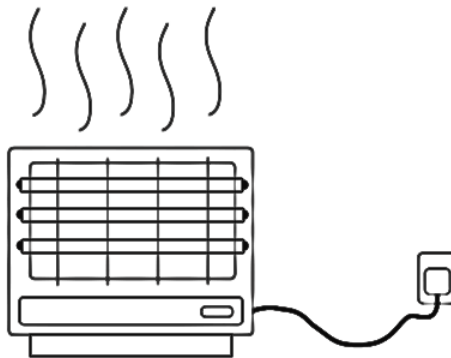
Use the words below to complete the sentences.

heat • movement • light • sound

- (a) A torch changes electrical energy into energy



- (b) An electric fire changes electrical energy intoenergy.



- (c) When you sing, you change chemical energy into energy.



- (d) A catapult changes stored energy into energy.

