DIRECTORATE FOR QUALITY AND STANDARDS IN EDUCATION
Department for Curriculum Management and eLearning
Educational Assessment Unit
Annual Examinations for Secondary Schools 2011

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

Name: _____ **Class:** _____

ANSWER ALL QUESTIONS

1. This question is about experiments and safety in science.
Read the information and answer the questions below:

Steve is heating 100cm^3 of water in a beaker. When the temperature of the water is 50^{0}C, Steve adds a few drops of food colouring to the water. The water becomes green.

a. Write down TWO safety rules which are important for this experiment.

(i) _____

(ii) _____

(2 marks)

b. Copy ONE sentence which shows the result of this experiment.

_____

(1 mark)

c. Write down the names of FOUR pieces of science apparatus you see in the picture.

_____ _____

_____ _____

(4 marks)

d. Write down the names of any TWO other pieces of science apparatus required for this experiment but not shown in the picture.

_____ _____

(4 marks)

2. Marie and Jake were taking some measurements. By mistake Jake mixed his readings. Draw lines to match up the two columns.

Measuring…	**Result**
The mass of a 12 year old student	155cm
The temperature of tap water	4.5kg
The length of the teacher's desk	4^0C
The mass of a school bag	15^0C
The temperature of cold water	48kg

(5 marks)

3. a. Look at the list of things. Sort them into TWO groups.

tree **Sun**
water **soil**
bird

Living things	**Non-living things**

(5 marks)

b. Animals are living things. Which THREE things do all animals do? Tick (✓) three boxes.

grow ☐ get rid of waste ☐ fly ☐
swim ☐ lay eggs ☐ move ☐

(3 marks)

c. Vertebrates are animals with a backbone. Complete the sentences below to describe each vertebrate group. The first one has been done for you as an example.

Mammals are warm blooded animals covered with hair or fur.

Reptiles are _____

Birds are _____

Fish are _____

Amphibians are_____

(4 marks)

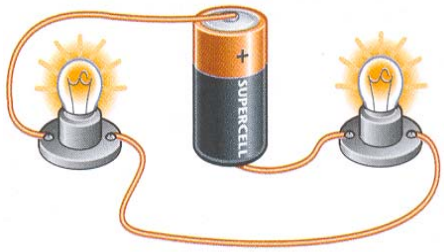
4. This question is about electrical circuits.

   a. In the table below draw the circuit symbols to show a bulb, a cell (battery) and a wire.

a bulb	a cell (battery)	a switch	a wire

(4 marks)

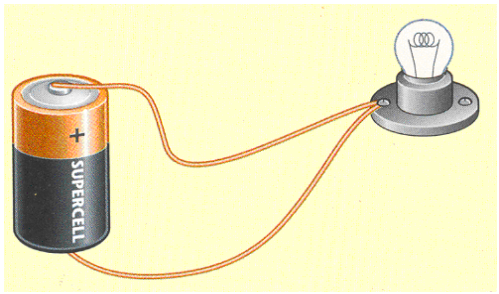
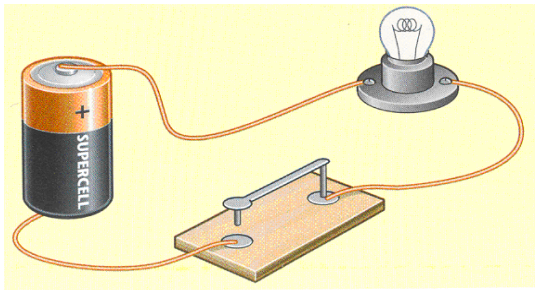
   b. Use symbols to draw a circuit diagram of the following.

(3 marks)

   c. The bulbs in circuits 1 and 2 do not light up.

   Give a reason for this. Write your answer in the table below.

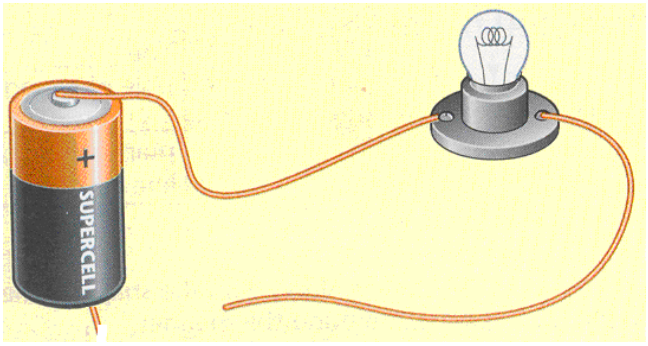
Circuit 1	Circuit 2
	
The bulb in circuit 1 does not light up because _____ _____	The bulb in circuit 2 does not light up because _____ _____

(2 marks)

d. Circuit 3 is incomplete. Paula tries to light up the bulb by completing the circuit using different objects. She uses:

a plastic ruler **an iron nail** **a rubber** **a metal spoon**

Circuit 3



Complete the table by putting each of the above objects in the correct column.

Column 1: **The bulb lights up with**	**Column 2:** **The bulb does not light up with**

Objects in column 1 are called _____.

Objects in column 2 are called _____. (6 marks)

5. Energy can be transferred from one form to another. Fill in the blanks to complete the main energy transfers.

electrical energy  → _____

_____  → _____

stored energy  → _____

(4 marks)

6. This diagram shows a power station which uses coal to produce electricity.

a. Fill in the blanks to show what happens in the production of electricity.

Coal and oil are examples of _____fuels. They are formed from the remains of animals and plants that died millions of years ago. When coal or oil are burned they give up their _____ energy as heat. In the boiler, the heat turns water into _____. This rotates the turbine blades like in windmills. When this happens the turbines turn a generator which produces _____.

(4 marks)

b. Draw lines to match each energy resource to the correct description.

Energy resource	Description
solar power	energy from waves on the sea
hydroelectric power	energy from hot rocks underground
wind power	energy from sunlight
wave power	energy from moving air
geothermal power	energy from water moving downhill

(5 marks)

c. Complete these sentences.

(i) The Sun, wind, moving water and energy from hot rocks are used as energy sources. These will never run out. They are _____ sources of energy.

(ii) We cannot renew our supplies of coal or oil. They are therefore called _____ sources of energy.

(4 marks)

7. Three students are writing down sentences about **Solids**, **Liquids** and **Gases**.

These are some of their sentences. Say whether each sentence is TRUE or FALSE.

a. Materials are made of particles. _____

b. Particles in a solid are moving about. _____

c. Particles in a liquid are close together. _____

d. A solid is changed to a liquid by heating. _____

e. A liquid is changed to a gas by cooling. _____

f. The change from a gas to a liquid is called freezing. _____

g. The change from a solid to a liquid is called melting. _____

(7 marks)

8. There are different methods of separating mixtures. For example:

filtration **evaporation** **distillation** **chromatography** **by magnet**

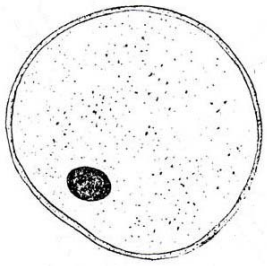
Which is the easiest way of separating these mixtures?

	Mixture	**Material required**	**Separating method**
a.	salt water	salt	
b.	soil and water	soil	
c.	iron and sand	iron	
d.	salt water	water	
e.	sand and water	sand	
f.	glass and water	water	

(6 marks)

9. This question is about the male and female reproductive system.

not to scale



a. What is a sperm? _____

(1 mark)

b. What is an egg? _____

(1 mark)

c. Which part of a sperm cell is used to help it swim? _____

(1 mark)

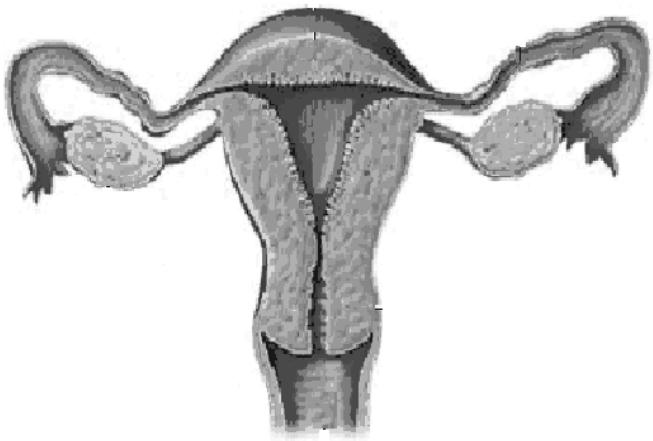
d. What is the name of the process in which a sperm joins an egg?

_____

(2 mark)

e. The following diagram shows the female reproductive system. Use the following words to label the diagram.

ovary **uterus** **vagina** **cervix** **oviduct (fallopian tube)**



(5 marks)

f. On the diagram, mark with a letter X, the place where the foetus (young baby) develops?

(1 mark)

g. On the diagram, mark with letter Y, the place from where egg cells are released.

(1 mark)

h. When a woman is pregnant, substances such as nutrients, pass from the [illegible]lood to the baby's blood.

(i) Name ONE other useful substance that passes from the mother's blood to the baby's blood. _____

(ii) Name TWO harmful substances that may pass from the mother's blood to the baby's blood.

_____ and _____

(3 marks)

10. This question is about chemicals

a. Fill in the blanks, choosing words from the following list. Each word can be used once, more than once or not at all.

compound elements water atoms mixture metal nonmetal

(i) _____ are the smallest building blocks of matter.

(ii) _____ contain only one type of atom.

(iii) Copper is an example of a _____.

(iv) Oxygen is an example of a _____.

(v) Salt is made up of two different chemicals. It is an example of a _____.

(5 marks)

b. Write down the name of the elements that have these symbols:

O _____ S _____

C _____ N _____

(4 marks)

c. Elements combine to make a wide variety of materials.

Write down the name of a chemical produced from:

(i) hydrogen and oxygen: _____

(ii) sodium and chlorine: _____

(iii) carbon and oxygen: _____

(3 marks)