FORM 1
INTEGRATED SCIENCE
TIME: 1h 30min

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Global Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Mark</td>
<td>11</td>
<td>11</td>
<td>6</td>
<td>2</td>
<td>9</td>
<td>8</td>
<td>13</td>
<td>12</td>
<td>10</td>
<td>18</td>
<td>100</td>
</tr>
</tbody>
</table>

Name: ____________________________
Class: __________

Instructions:

- Answer all questions.
- The use of a science stencil is allowed.
1. Mary uses measuring instruments and laboratory apparatus during Science lessons.
   a. Draw lines to match the measuring instrument with the corresponding object, and write down the corresponding units.

<table>
<thead>
<tr>
<th>Object</th>
<th>Measuring Instrument</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass of book</td>
<td>Thermometer</td>
<td></td>
</tr>
<tr>
<td>Volume of water</td>
<td>Weighing Scales</td>
<td>kg</td>
</tr>
<tr>
<td>Temperature in class</td>
<td>Stopwatch</td>
<td></td>
</tr>
<tr>
<td>Time taken for the ice cube to melt</td>
<td>Measuring Cylinder</td>
<td></td>
</tr>
</tbody>
</table>

(6 marks)

b. In the boxes provided below draw a:

Test-tube  Conical Flask  Beaker

(3 marks)

c. Write down the reading with the correct units of the following Measuring Cylinder.
2. The following diagram shows a Bunsen Burner.

![Bunsen Burner Diagram]

a. Label all the different parts of the Bunsen Burner on the diagram below.  

(5 marks)

b. Complete the following sentences about the flame of the Bunsen Burner:
   i. When the air hole is closed, the colour of the flame is ____________________.
   ii. When the air hole is open, the colour of the flame is ____________________.

(2 marks)

c. What colour is the:
   i. Safety flame? ____________________
   ii. Hottest flame? ____________________

(2 marks)

d. Write down two safety rules you should follow when using the Bunsen Burner.
   • ____________________________________________________________________
   • ____________________________________________________________________

(2 marks)

3. This question is about Fire.

a. From the box below, underline the things that are not needed to keep a fire burning.

| fuel | water | heat | carbon dioxide | oxygen |

(2 marks)
b. Match the following scientific words with their correct meaning:

<table>
<thead>
<tr>
<th>Scientific Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combustion</td>
<td>Put out a flame</td>
</tr>
<tr>
<td>Inflammable</td>
<td>Burning</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>Cannot burn</td>
</tr>
<tr>
<td>Extinguish</td>
<td>A gas produced when fuel burns</td>
</tr>
</tbody>
</table>

(4 marks)

4. The picture below shows a bottle of glue.

Write down the meaning of the hazard warning symbols, by choosing from the box below.

corrosive explosive flammable toxic radioactive

(2 marks)
5. Joseph set up the apparatus shown below. He wanted to measure the time taken to heat 50cm³ of water, and then measure its temperature when it boils.

   a. List the apparatus shown in the diagram Joseph used to carry out the experiment.

      Apparatus:
      • Beaker filled with water
      • ____________________
      • ____________________
      • ____________________
      • ____________________
      • ____________________

      (4 marks)

   b. Name the apparatus Joseph used to measure 50cm³ of water.

      ____________________

      (1 mark)

   c. Draw the apparatus named in question b.

      (1 mark)

   d. At what temperature does water boil?

      ____________________

      (2 marks)

   e. Name the apparatus used to measure the time it takes for the water to start boiling.

      ____________________

      (1 mark)

6. The picture below shows a cactus plant.

   a. In which habitat does the cactus grow?

      ____________________

      (1 mark)

   b. Mention one way in which the cactus plant has adapted to live in this type of habitat.

      ____________________

      (1 mark)
c. Animals are also adapted to live in specific habitats. Mention two ways in which the polar bear has adapted to live in the cold regions.

_____________________________________________________________________
_____________________________________________________________________

(2 marks)

d. Different animals have different diets. Complete the following paragraph:

Carnivores are animals that feed mainly on other animals. An example of a carnivore is the ________________. On the other hand, animals which feed on plants only are called ________________. An example of this type of animal is the _________________.
The word ________________ refer to animals which feed on both animals and plants. An example of an omnivore is humans.

(4 marks)

7. The diagram below shows an ocean food web.

![Food Web Diagram]

a. From the food web above, find one prey and its predator.

Prey: ________________  Its Predator: ________________

(2 marks)
b. Give one reason why the number of sand eels could increase, if the population of herrings die.

_____________________________________________________________________

_____________________________________________________________________

(1 mark)

c. What would happen to the number of capelin, if all sand eels and herrings die? Explain why.

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

(2 marks)

d. Complete the following table, by filling the Vertebrate group and one characteristic.

<table>
<thead>
<tr>
<th>Animal</th>
<th>Vertebrate Group</th>
<th>One characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parrot</td>
<td>Bird</td>
<td>Have wings and feathers.</td>
</tr>
<tr>
<td>Panda</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shark</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lizard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frog</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(8 marks)

8. The three states of matter are Solids, Liquids and Gases.
   a. In what state of matter is the object below? ____________________

(1 mark)
b. In the boxes below, draw the particle arrangement of:

```
| Solids | Liquids | Gases |
```

(3 marks)

c. Underline the correct words from inside the bracket:
- Solids, liquids and gases have different properties. For example, (solids, liquids, gases) have a fixed shape and cannot be compressed.
- (Solids, Liquids, Gases) can be squashed into a smaller volume easily while (solids, liquids, gases) change shape to that of the container but still have a fixed volume.
- In car brakes, a (solid, liquid, gas) must be used by hydraulic fluid for brake pads.

(4 marks)

d. The diagram below shows how states of matter can change. Write the names of the processes that take place at:

```
Solid  Liquid  Gas
```

i. ____________________
ii. ____________________
iii. ____________________
iv. ____________________

(4 marks)
9. The picture below shows a plant.

a. Label the different parts of the plant. Write your answers in the boxes provided.  

(4 marks)

b. Where are the seeds produced? ____________________  

(1 mark)

c. What is the function of the leaves?  

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

(2 marks)

d. Which part of the plant takes up the water and nutrients? ____________________  

(1 mark)

e. What will happen to the plant if it placed in a dark room? Why?

_____________________________________________________________________

_____________________________________________________________________

_____________________________________________________________________

(2 marks)
10. Energy is neither created nor destroyed but only changed from one form to another.
   a. Look at the pictures and fill in the main energy changes.

   | Electrical Energy | → | Light Bulb | → | Light Energy |
   | Iron | → | Mobile Phone | → | |
   | Violin | → | |

   (6 marks)

b. The light bulb in the example above, changes electrical energy into light energy. However, some energy is wasted into another type of energy. Which is this energy?
   ______________________________

   (1 mark)

c. Name the units of energy. ______________________________

   (1 mark)
d. Underline the renewable energy sources in the list below:

   gas  hydroelectric  coal  oil  wind  solar

   (3 marks)

e. Write down one advantage of renewable energy sources.

   ______________________________________________________

   (1 mark)

f. Fill in the blanks using some of the words from the box below.

<table>
<thead>
<tr>
<th>turbines</th>
<th>kinetic</th>
<th>pollution</th>
<th>electrical</th>
<th>non-renewable</th>
<th>oil</th>
<th>heat</th>
</tr>
</thead>
<tbody>
<tr>
<td>wind</td>
<td>renewable</td>
<td>gas</td>
<td>solar</td>
<td>light</td>
<td>panels</td>
<td>oxygen</td>
</tr>
</tbody>
</table>

   The electricity in Malta is generated mainly using a power station. Power stations use ________________ as fuel in order to work. This type of energy is _________________. The main disadvantage of using this type of energy is the fact that it causes ________________ when burnt. When this source of energy is burnt, ________________ is released which causes water to turn into vapour. This vapour causes the ________________ to rotate, which then turn generators and finally produce ________________.

   (6 marks)