FORM 3 SCIENCE/DESIGN & TECHNOLOGY

Name: _________________________
Class: _______________

Answer ALL questions. (This paper is out of 30 marks.)

1 Jenny’s three pets are pictured below.

- hamster
- tortoise
- parrot

a. Name the pet that is a reptile.

b. Name the pet that does not lay eggs.

2 A field is 37 times larger than the quadrat you are using during fieldwork. When you throw the quadrat blindly you can observe 3 poppy plants in your quadrat. Show your working to estimate the number of poppy plants you expect to find in the whole field.

- quadrat
- field
- poppy

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

__________________________________ [1]
3 The following pictures show three different habitats.

<table>
<thead>
<tr>
<th>Hot climate</th>
<th>Underwater</th>
<th>Shady rain forest</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Hot climate" /></td>
<td><img src="image2" alt="Underwater" /></td>
<td><img src="image3" alt="Shady rain forest" /></td>
</tr>
</tbody>
</table>

A B C

For each of the leaves below write the letter that indicates the habitat from where it was taken. The leaves are pictured to scale.

Letter: _________ [1]

Letter: _________ [1]
4 The following diagram shows an insect-pollinated plant.

![Diagram of a flower with labeled parts: Stamen, Anther, Filament, Petal, Sepal, Ovary, Stigma, Carpel, Style, Ovule.]

The Flower

a. Name the flower part labelled above that attracts insects for pollination.

__________________________________________________________________________ [1]

b. Give ONE reason visible in the picture that confirms that both the tomato and the pepper are a fruit while the onion is not.

| tomato | pepper | onion |

__________________________________________________________________________ [1]
5a. A farmer would like to grow healthy crops while taking care of the environment. From the two options below tick (✓) the most environmental-friendly way of adding nutrients to the soil.

☐ adding artificial fertiliser  ☑ adding animal manure  [½]

b. The farmer would like to get rid of pests. From the two options below tick (✓) the option that will give the healthiest crops.

☐ releasing ladybirds in the field  ☐ spraying pesticide  [½]
The diagrams below show three different beaks of birds A, B and C.

Write the letter of the bird that eats each of the following type of food:

a. nuts

Beak: ________________  [1]

b. small mice

Beak: ________________  [1]
7 Use the picture of the kitchen below to answer the following questions.

a. (i) Tick (√) two objects that are made of metal.
   - [ ] glass  [ ] sink  [ ] rolling pin  [ ] handles  [ ] turner [1]

(ii) Tick (√) two objects that are made of natural materials.
   - [ ] turner  [ ] sink  [ ] jar  [ ] mat  [ ] rolling pin [1]

(iii) **Wood, steel, paper** and glass are different materials. Arrange the list in order, starting from the strongest material and ending with the weakest.

   ____________________________________________ [1]

(iv) Name one material (shown in the picture above) that gets damaged when heated.
(v) The kettle shown in the picture is to be heated on the cooker. Name a suitable material from which this kettle can be made of.

b. Joe wants to make a cup of tea. He puts water in the kettle to boil.

Tick (✔) the correct answer for each question below:

(i) The steam coming out of the kettle is a:
- Solid
- Liquid
- Gas

(ii) The water in the kettle is a:
- Solid
- Liquid
- Gas

(iii) The metal handle of the kettle is a:
- Solid
- Liquid
- Gas

(iv) When steam coming out of the kettle hits a cold cupboard, it condenses into a:
- Solid
- Liquid
- Gas

c. Joe then places a teaspoon of sugar in the tea, which contains mostly water. After some time, the sugar disappears as it dissolves into the water.

Tick the correct answer for each question below:

(i) When sugar dissolves in water it forms a:
- Solid
- Suspension
- Solution
- Solvent

(ii) Water is a liquid that dissolves sugar in it. It is acting as a:
- Solution
- Suspension
- Solid
- Solvent

(iii) Describe 2 ways of making sugar dissolve faster in water (or tea).
8 Measure (in mm) the sides of the triangle and semicircle shown below and write each measurement on the corresponding arrow.

9 Put the numbers in the correct sequence during the making. The first process is given.

Painting
Roughing out
Finishing
Cutting
Marking out [1]
10 Using line diagram, sketch the following tools:

Hammer

Flat file

Backsaw

[3]
11 By means of lines, match the proper tool with the right job. The first one is given as an example.