

Annual Examinations for Secondary Schools 2014

FORM 3 SCIENCE/ DESIGN & TECHNOLOGY MARKING SCHEME

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

1 Jenny's three pets are pictured below.



hamster



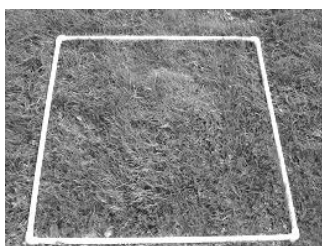
tortoise



parrot

- a. Name the pet that is a reptile. tortoise **1 mark**
- b. Name the pet that **does not** lay eggs. hamster **1 mark**

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

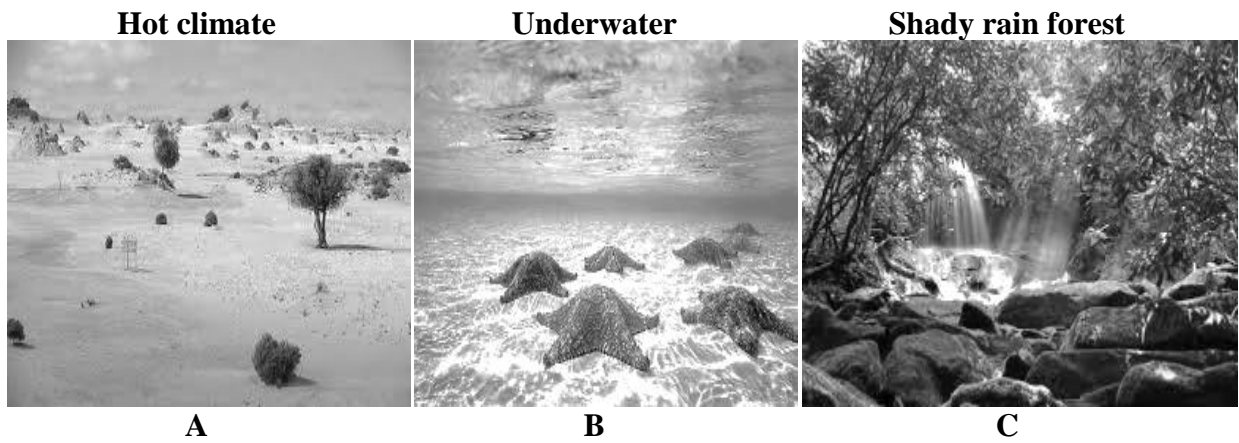


poppy

$37 \times 3 = 111$

1 mark

3 The following pictures show three different habitats.



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: C

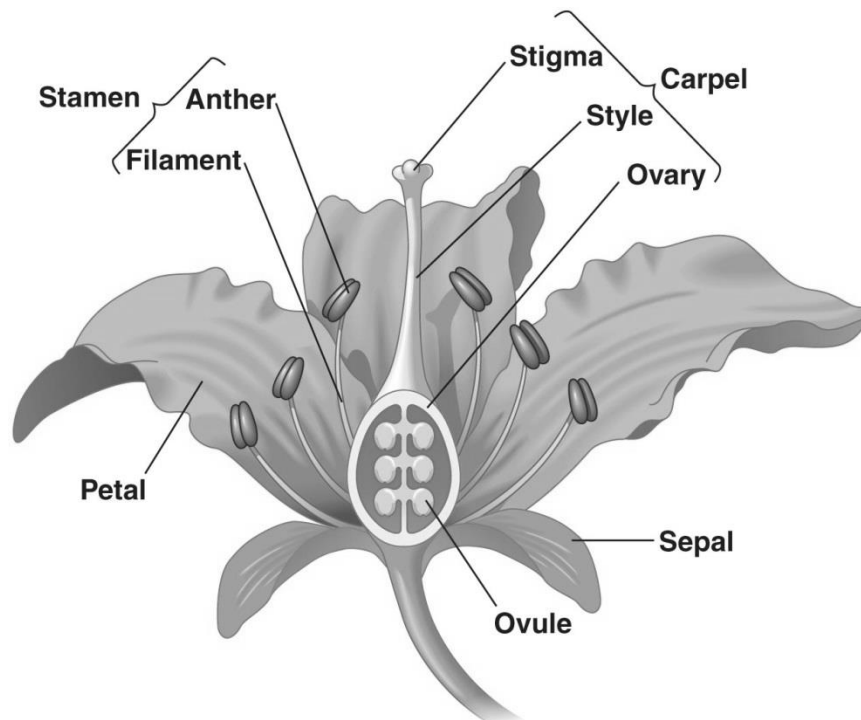
1 mark



Letter: A

1 mark

4 The following diagram shows an insect-pollinated plant.



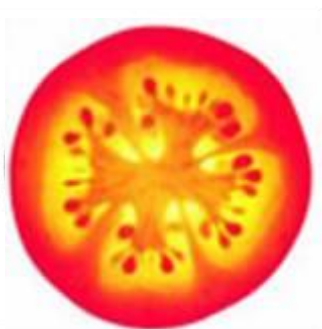
The Flower

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

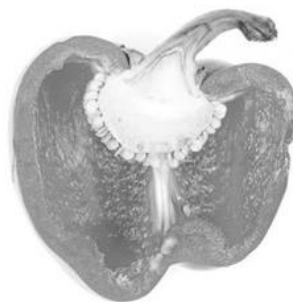
Petal

1 mark

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

Tomato and pepper have seeds while onion does not.

1 mark

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 mark



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

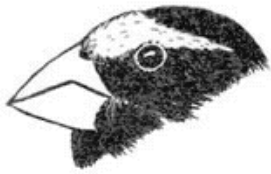
releasing ladybirds in the field

spraying pesticide

½ mark



6 The diagrams below show three different beaks of birds A, B and C.



A



B



C

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

a.

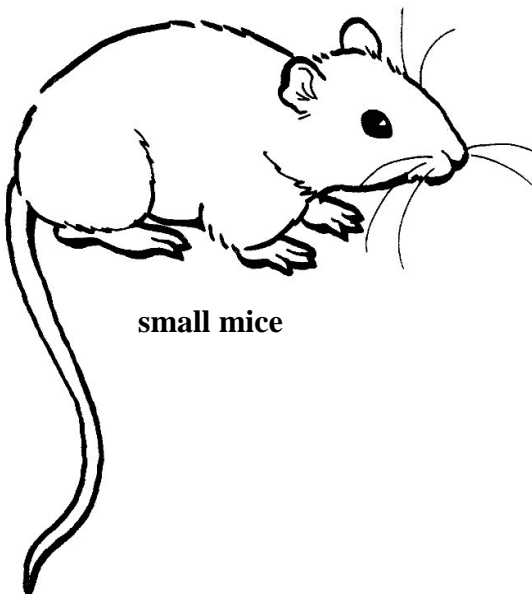


nuts

Beak: A

1 mark

b.

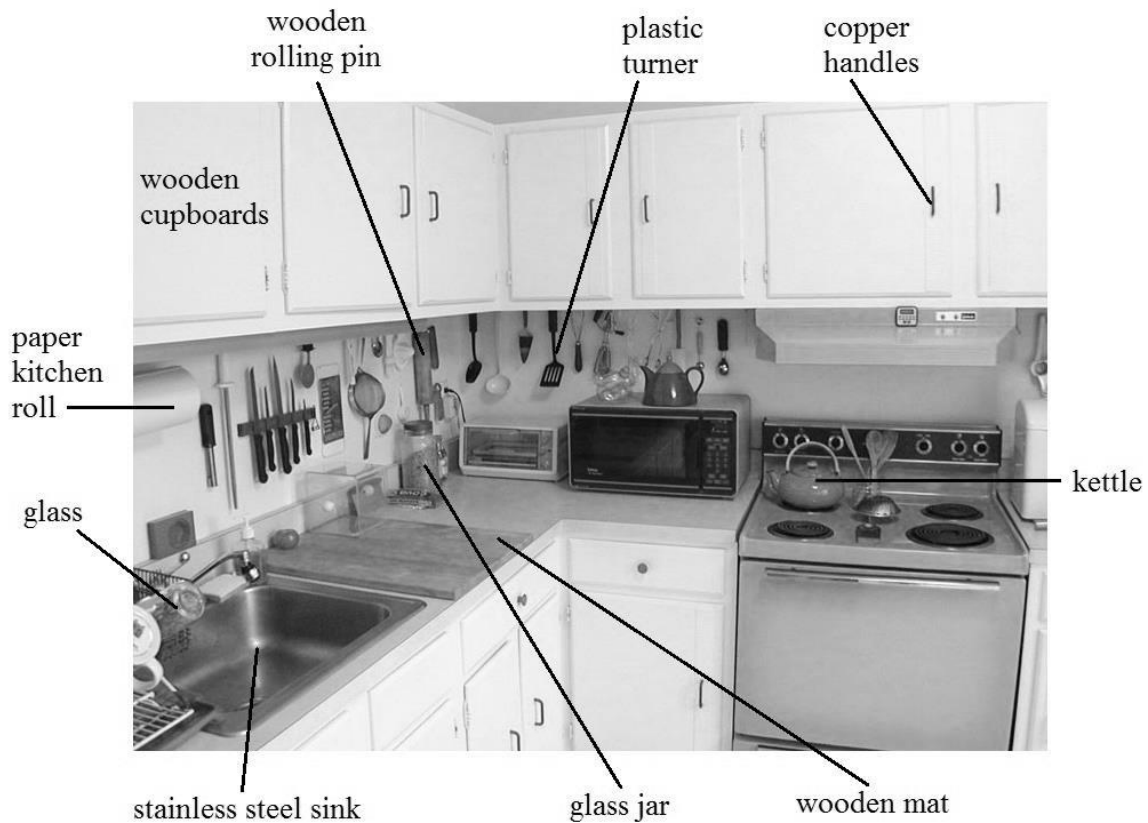


small mice

Beak: C

1 mark

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 mark**

(ii) Tick (✓) **two objects** that are made of natural materials.

turner sink jar mat rolling pin **1 mark**

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

Steel, wood, glass, paper **1 mark**

(iv) Name one material (shown in the picture above) that gets damaged when heated.

Plastic **1 mark**

(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.

Steel (or stainless steel) **1 mark**

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

1/2 mark

(ii) The water in the kettle is a:

- Solid Liquid Gas

1/2 mark

(iii) The metal handle of the kettle is a:

- Solid Liquid Gas

1/2 mark

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

- Solid Liquid Gas

1/2 mark

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 1/2 mark

(ii) Water is a liquid that dissolves sugar in it. It is acting as a:

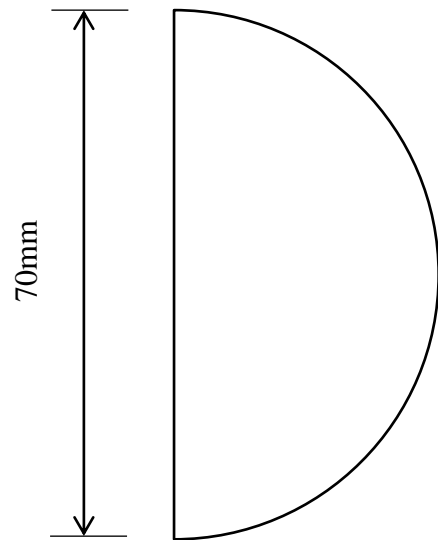
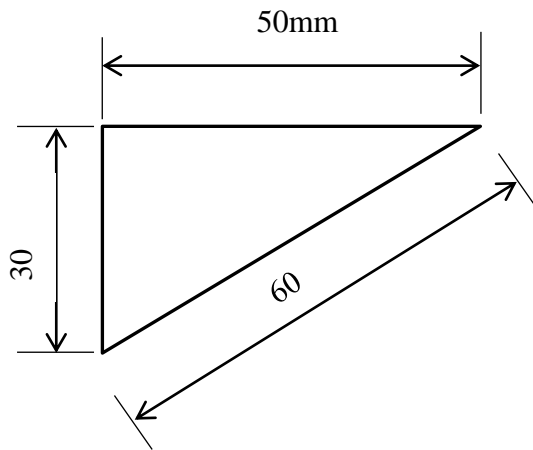
- Solution Suspension Solid Solvent 1/2 mark

(iii) Describe 2 ways of making sugar dissolve faster in water (or tea).

- Stir
- Use hotter water (also accept crush sugar into small pieces)

2 marks

- 8 Measure (in mm) the sides of the triangle and semicircle shown below and write each measurement on the corresponding arrow.



$\frac{1}{2} \times 4 = 2$ marks

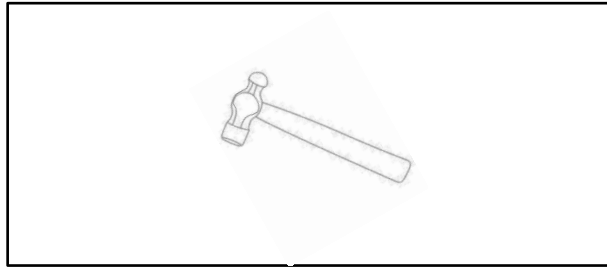
- 9 Put the numbers in the correct sequence during the making. The first process is given.

| | |
|--------------|--------------------------------|
| Painting | <input type="text" value="5"/> |
| Roughing out | <input type="text" value="3"/> |
| Finishing | <input type="text" value="4"/> |
| Cutting | <input type="text" value="2"/> |
| Marking out | <input type="text" value="1"/> |

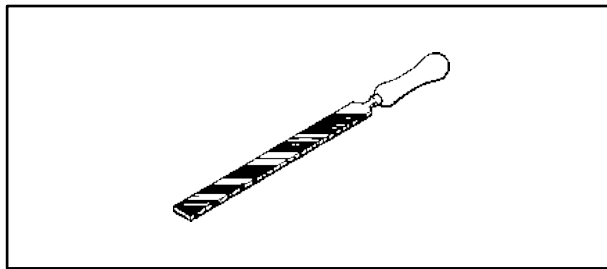
$\frac{1}{2} \times 4 = 2$ marks

10 Using line diagram, sketch the following tools:

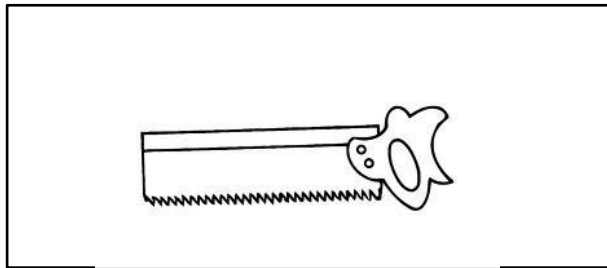
Hammer



Flat file

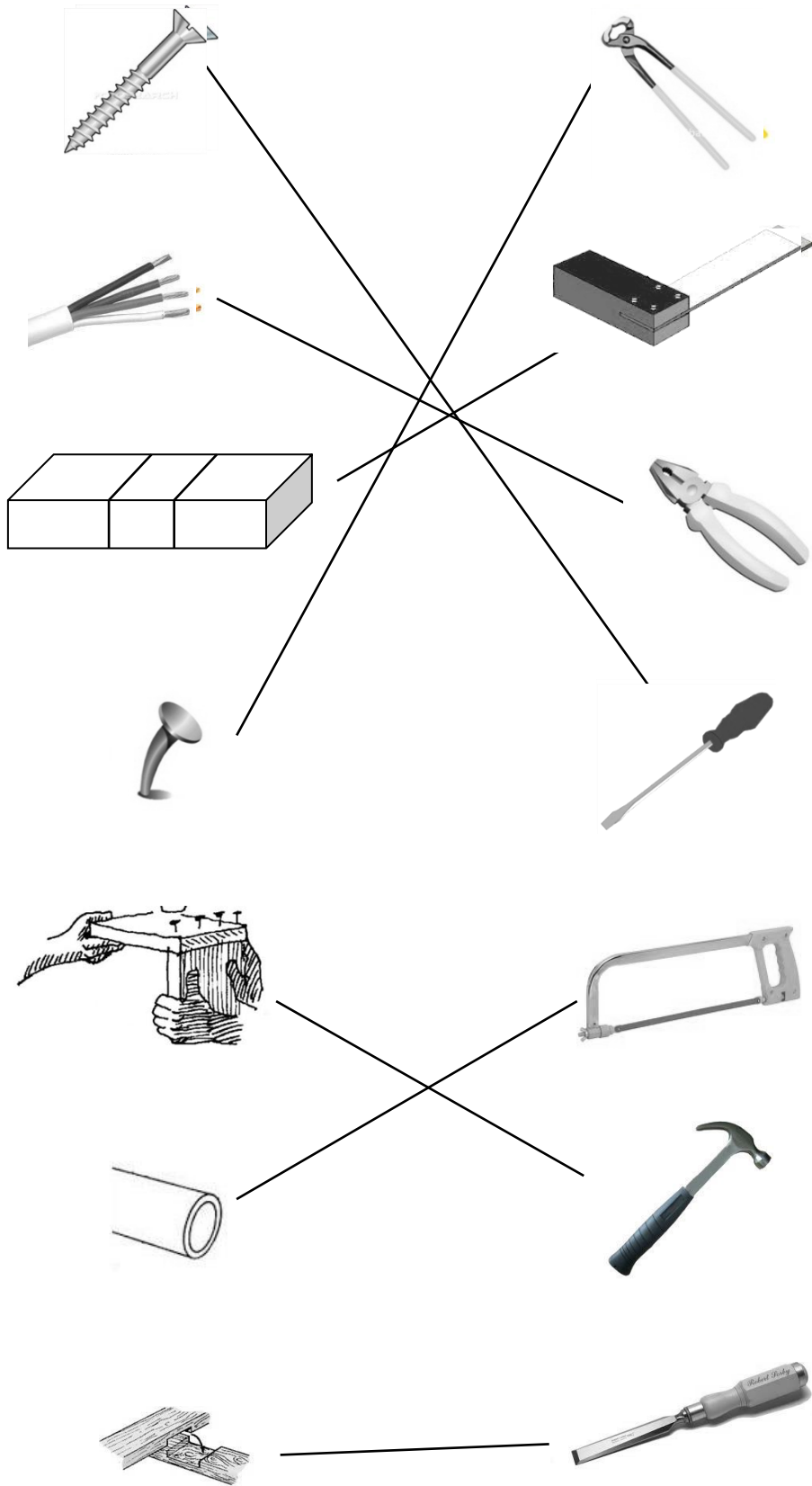


Backsaw



1 x 3 = **3 marks**

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



$\frac{1}{2} \times 6 = 3$ marks