Year 9 Practice Examination 2015

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	TOTAL
2	3	5	4	5	5	6	7	6	7	50

Answer all questions in the spaces provided

Question One: [2 marks]

The drawing shows plants growing near a hedge in a garden.
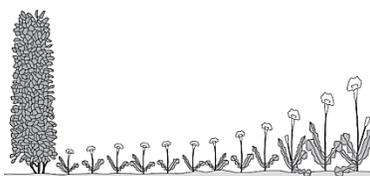
(a)   Write down one observation.

(b)   Write down one inference.

Question Two: [3 marks]

Information on five seed types suitable for feeding parrots is provided in the table below.

Seed type	Colour	Shape	Groove on surface
Bibble	Black	Elongated	Absent
Bobble	Brown	Elongated	Present
Nippy	Brown	Round	Absent
Poppy	Black and white stripes	Elongated	Absent
Blobby	Brown	Elongated	Absent

(a)   Use the information from the table to complete the key below.

1.   Seed round   Nippy
      Seed not round   Go to 2

2.   Seed brown   Go to 3
   Seed not brown   Go to 4

3.   _____   Bobble
      _____   Blobby

4.   Seed all black   _____
      Seed not all black   _____

Question Three: [5 marks]

The proportion (percentage) of sound energy which is reflected or transmitted or absorbed depends on the material which receives the sound.

A student investigates different materials. The diagram shows how a student sets up her equipment.

(a)   Using a pencil and ruler to draw on the diagram, show how microphone A receives reflected sound.

Loudspeaker

Expanded polystyrene block

Surface material
being tested

Microphone B

Microphone A
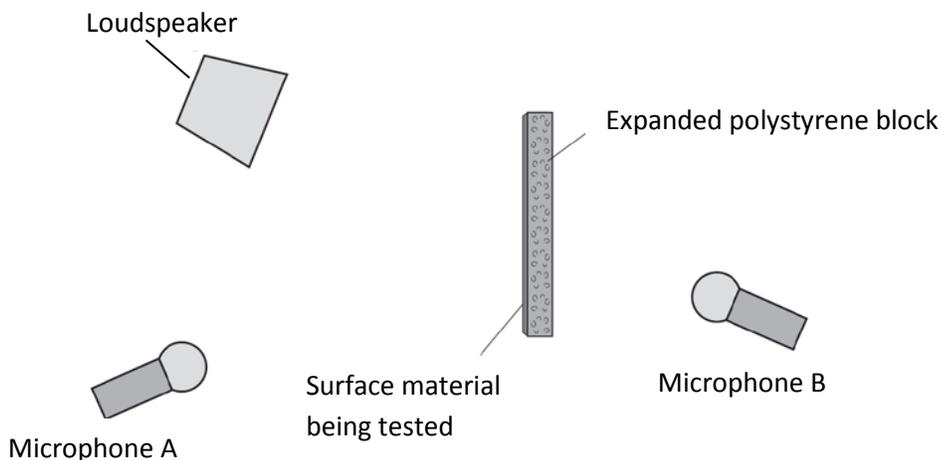
(b)   The student tests five materials. Each sheet of material is 1 mm thick. This has been glued onto a block of expanded polystyrene.

Why does the student use the same size of expanded polystyrene block and the same sound level for each test?

The table shows the readings for the sound level transmitted to microphone Y.

Sound level from loudspeaker (%)	Surface material	Sound level transmitted to microphone B (%)
100	plasterboard	30
100	Thin cloth	53
100	paper	67
100	wood	23
100	soft material	24

(c)   Which surface material transmits the smallest proportion of the sound?

People living in a flat have very noisy neighbours. They play their music very loudly.

(d)   Suggest one practical idea to reduce the amount of noise transmitted into the flat through your walls.

Question Four: [4 marks]

Paper chromatography can be used to identify substances in a mixture.

(a)   The steps in making a chromatogram are listed below in the wrong order.

      A   Draw a pencil line near the bottom of the filter paper strip.

      B   Hang the filter paper in the solvent.

      C   Mark filter paper with a sample of the mixture.

      D   Pour solvent into a beaker so it will be just below the pencil line.

      E   Remove the strip and allow to dry.

      Arrange the steps in the correct order. ___ ___ ___ ___ _E_

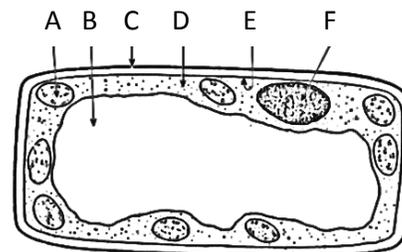(b)   Why must the solvent in the beaker be **below** the pencil line?
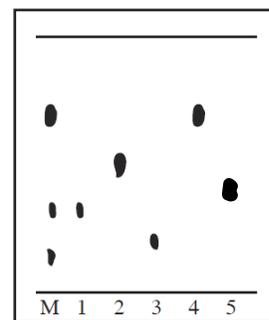
The ink sample M was compared with known dyes 1, 2, 3, 4 and 5.

(c)   What dyes were present in the sample M? How can you tell?

M 1 2 3 4 5

Question Five: [5 marks]

The diagram shows a plant cell.

Structure A is a chloroplast.

(a)   Name the process that occurs in the chloroplasts of plant cells.

A B C   D   E   F

(b)   Complete this word equation for the process that occur, using the words listed below. (One answer won't be needed)

                carbon dioxide   **nitrogen**   **oxygen**   **water**

_____ + _____ → glucose (sugar) + _____

Some structures in the diagram are also found in animal cells.

(c)   Complete the table.

Structure also found in an animal cell	Letter
Cell membrane	
Cytoplasm	
	F

Question Six: [5 marks]

The drawing shows William's house. He lives in the countryside and is trying not to use any mains electricity at all. He uses three methods to generate electricity.

Wind turbine

Solar cells
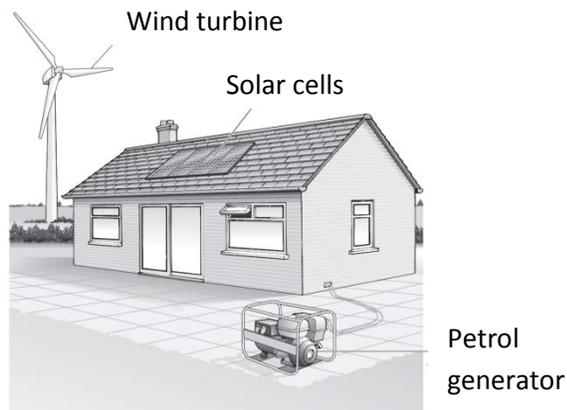
Petrol generator

(a) Draw a straight line from each of the two methods below to the main energy resource used to generate electricity. Draw only **two** lines. Use a ruler.

Method	Energy resource
Wind turbine ●	● fossil fuel
	● air movement
Petrol generator ●	● heat
	● sunlight

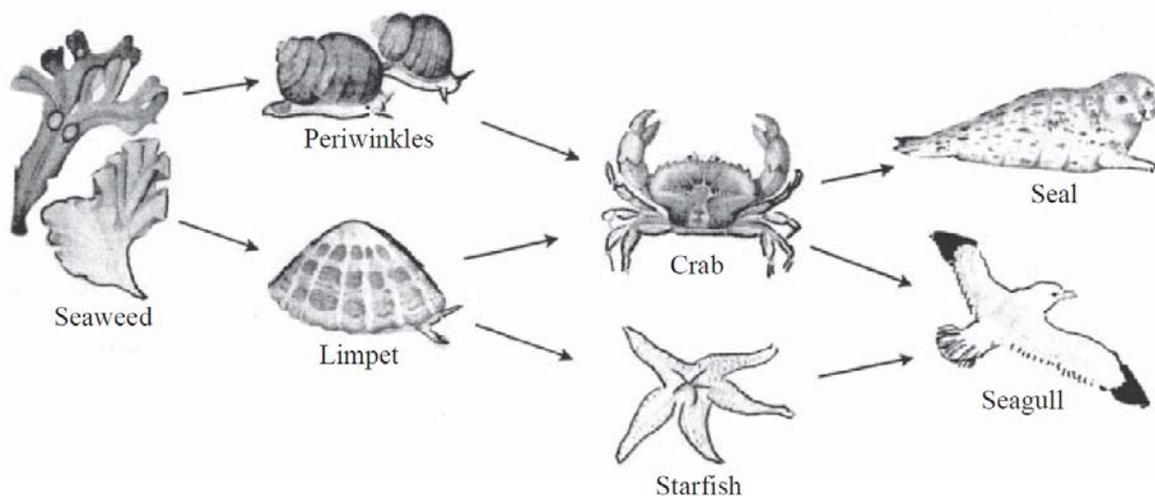(b) The solar cells cannot generate electricity all of the time. Give the reason for this.

(c) William's nearest neighbours, who live about 70 m away, complained when he applied for permission to install a wind turbine. Suggest two reasons why.

1.
2.

Question Seven: [6 marks]

The drawing shows a food web.

Periwinkles

Seaweed

Limpet

Crab

Starfish

Seal

Seagull

(a) Give the original source of energy for this food chain.

(b)   Complete the food chain from this food web.

Seaweed → limpet → _____ → seagull

(c)   Give an example of a secondary consumer in this food web.

(d)   Describe and explain what might happen to the limpet population if all the seals died.

| The limpet population might { increase / stay about the same / decrease } because |
| |
| |

(e)   Name the type of organisms, not shown in this food web, which feed mostly on dead animals?

Question Eight: [7 marks]

Danny was carrying out a fair test investigation. He wanted to see in which place his seeds grew the tallest. He placed 3 pots in each place. He recorded how tall his plants were after 2 weeks.

(a)   Complete the design of the results table for his investigation. You will not be filling in any results (in the shaded area).

Consider the following points:

- What is being measured? (dependant variable)
- Which variable is Danny changing? (independent variable)
- How many columns and rows will your results table need?
- Does the results table need headings?
- Are there any units which need to be included? Where should these be?
- How can you show repeat measurements in the results table?
- Does there need to be space for writing down averages?
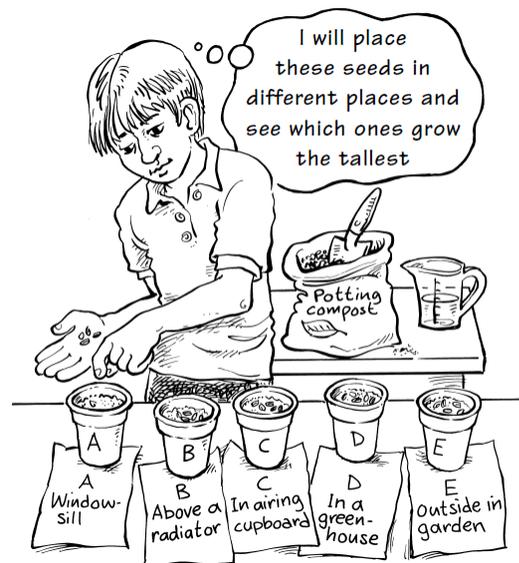
Pot			Trial 1		
A					

(b) In class Danny grew a bean plant and he measured how tall it grew.

A graph to show how tall my plant grew
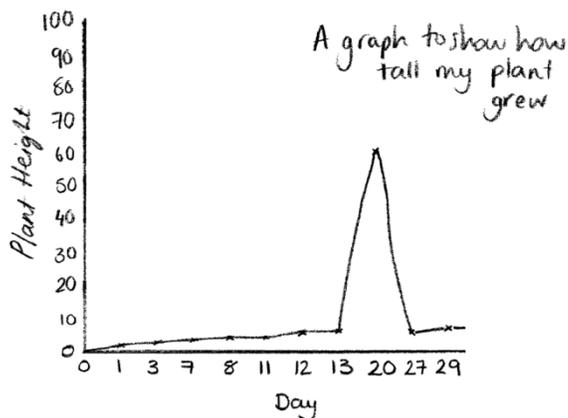
His graph has many errors (mistakes). List 5 errors you can spot.

1.
2.
3.
4.
5.

Question Nine: [6 marks]

Below are two results tables, from year 9 pupils who carried out an investigation into boiling different amounts of water.

(a) Circle any results which you believe could be wrong and suggest why you think they are anomalies.
These could be
- individual repeats which are dissimilar to the others
- whole sets of results which appear incorrect.

Marie

Amount of water (mL)	Time taken to boil (s)			Average time to boil (s)
10	51	10	48	36.3
20	65	65	59	63
30	95	85	87	90.3
40	80	76	75	77
50	130	120	119	123

Wiremu

| Amount of water (mL)	Time taken to boil (s)			Average time to boil (s)
20	56	53	80	63
40	85	79	84	82.6
60	141	138	144	141
80	210	202	203	205
100	600	606	594	600

Marie's experiment
Wiremu's experiment

(b) What could these students have done to get incorrect results? Give two suggestions.

1.
2.

Question Ten: [7 marks]

A student set up the choice chamber below to investigate the behaviour of woodlice.

Black paper   Woodlice

Gauze platform
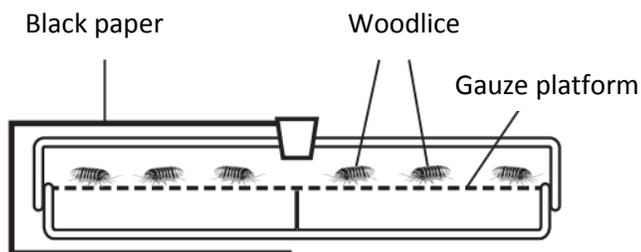
(a)   What is the experiment above trying to find out?

(b)   Describe how the student would alter the setup of the choice chamber to investigate the response of woodlice to humidity (dampness).

(c)   Describe two things the student could do to make the results more reliable, and explain how each makes the results more relaible.

1.

2.

(d)   Explain how the response of woodlice to light and to humidity increases their chances of survival.