**Monday 13th November 2023 – Lumley Homework – LIVING THINGS**

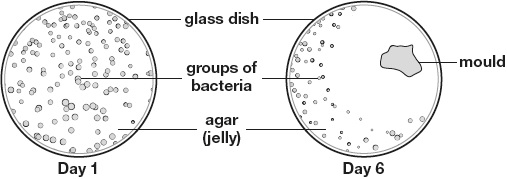
**Q1.**

**Penicillin**

(a)  In 1928 a scientist called Alexander Fleming grew micro-organisms called bacteria. Growth shows that bacteria are living things.

The bacteria grew on agar (jelly) in glass dishes.

After a few days Fleming saw mould growing in one of the glass dishes.



(i)   Sort the five things in the box below into **living** and **non-living** things.

One has been done for you.

|  |
| --- |
| bacteria  glass dish  mould  agar (jelly)  human |

|  |  |  |
| --- | --- | --- |
|  | **Living things** | **Non-living things** |
|  | bacteria |  |

1 mark

(ii)  Growing is a life process.

Name **ONE** other life process.

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1 mark

(b)  Bacteria can cause disease.

Fleming thought he could use the mould to help cure disease caused by bacteria.

Look at the pictures above for **Day 1** and **Day 6**.

Use the evidence in the pictures to explain why Fleming thought the mould could be used to cure disease.

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1 mark

(c)  Fleming used the mould to make a medicine called penicillin.

It took over 10 years for penicillin to be first used by doctors.

Write **true** or **false** next to each statement to show why it took a long time for penicillin to be used as a medicine.

|  |  |  |
| --- | --- | --- |
|  |  | **True** or **False?** |
|  | The medicine had to be tested to make sure it was safe. | \_\_\_\_\_\_\_\_\_\_\_\_ |
|  | Scientists had to find a way of making lots of penicillin at a time. | \_\_\_\_\_\_\_\_\_\_\_\_ |
|  | It took 10 years for the mould to start growing. | \_\_\_\_\_\_\_\_\_\_\_\_ |
|  | Fleming needed to check that his ideas were correct. | \_\_\_\_\_\_\_\_\_\_\_\_ |

2 marks

**Q2.**

**Germinating seeds**

(a)     Sunita wants to find out if some types of seed germinate more quickly than others.  
Sunita plants her seeds in seed trays.



Name the **ONE** variable Sunita is changing in her investigation.

 .................................................................................................................

1 mark

(b)     Sunita needs to make sure her investigation is fair.

Name **TWO** variables Sunita should keep the same to make her investigation fair.

  1 ..............................................................................................................

2 ..............................................................................................................

1 mark

(c)     When a seed germinates, a root starts to grow before a shoot.

|  |  |
| --- | --- |
| Sunita measures which type of seed  germinates first by recording when she first sees the **shoot**. |  |

Explain why Sunita records when the **shoot** first appears and not when the **root** first appears.

  .................................................................................................................

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1 mark

(d)     Sunita planted five seeds of each type of seed in the trays.

Explain why it is a good idea to plant five seeds of each type rather than just one.

  .................................................................................................................

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1 mark

|  |  |  |
| --- | --- | --- |
| (e) | This diagram shows the  life cycle of a plant. |  |

Tick **ONE** box to show where germination happens in the life cycle of a plant.



A            B          C           D   