**Science Homework – Alnwick -16.6.25 Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Q1.**

**Human life cycle and pulse rate**

(a)  Ella is learning about the human life cycle.

She collects pictures of people of different ages.

Label the photographs to name stages **B** and **D** in the human life cycle.



   **baby**  \_\_\_\_\_\_\_\_\_\_\_\_  **teenage**  \_\_\_\_\_\_\_\_\_\_\_\_  **old age**

1 mark

(b)  Ella wonders if pulse rate is affected by the different stages in the human life cycle.

Complete the sentence below about pulse rate.

  Pulse rate measures how quickly the \_\_\_\_\_\_\_\_\_\_\_\_ pumps blood around the body.

1 mark

(c)  Ella measures the resting pulse rate of people from each of the life stages.

Ella’s test would not be fair if she measured some people’s pulse rates after they were exercising instead of after resting.

Explain why.

  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1 mark

(d)  The table shows Ella’s results.

|  |  |
| --- | --- |
| **Stage of the human life cycle** | **Average resting pulse rate (beats per min)** |
| A (baby) | 135 |
| B | 97 |
| C | 84 |
| D | 72 |
| E (old age) | 76 |

Ella concludes, ‘The older you are, the slower your resting pulse rate is.’

The evidence in Ella’s results does **not** support her conclusion.

Use Ella’s results to explain why they do **not** support her conclusion.

  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1 mark

(e)  People who are fit have lower resting pulse rates than people who are unfit.

Write **yes** or **no** on each row of the table to show if the activities are likely to affect a person’s resting pulse rate.

|  |  |  |
| --- | --- | --- |
|  | **Activity** | **Will the activity affect a person’s resting pulse rate? Yes** or **no?** |
|   | swim every day |   |
|   | go for a walk every day |   |
|   | read every day |   |

1 mark

**Q2.**

**Sports day**

(a)     Dan has some ideas about exercise.

Write **true** or **false** under each statement about exercise.





2 marks

(b)     Leg muscles and bones help people to run and move.
Leg bones are part of the skeleton.

Other than movement, describe **another** function of the skeleton.

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

1 mark

(c)     Dan wins the 100 m race at his school’s sports day. He gets a medal.

|  |  |
| --- | --- |
| The school’s medals are madeof **steel** or **plastic**.They are all the same size,shape and colour.Dan tests his medal to findout if it is steel or plastic. |  |

Will each test show if Dan’s medal is steel or plastic?
Write **yes** or **no** in each row of the table below.



|  |  |
| --- | --- |
| **Test** | **Will the test show if Dan’s medal is steel or plastic?Yes or no?** |
| Hold a magnet next toeach medal. |   |
| Put each medal in an electric circuit with a bulb and cell. |   |
| Drop some water on each medal. |   |
| Weigh each medal. |   |
| Shine a light on each medal. |   |

2 marks

**Q3.**

**Pulse rate**

(a)     Class 6 are learning about the human body.

Complete the sentences below using the words in the box.



  The ............................... pumps blood around the body.

The ............................... carry blood around the body.

The ............................... protect the heart.

1 mark

(b)     Your pulse rate tells you how fast your heart is beating.

Tick **ONE** box to show what equipment you could use to workout your pulse rate.



|  |  |  |  |
| --- | --- | --- | --- |
| ruler |  | forcemeter |  |
| stopwatch |  | thermometer |  |

1 mark

(c)     Class 6 have some ideas about pulse rate.

Write **true** or **false** next to each statement about pulse rate.



|  |  |
| --- | --- |
|   | **True** or **false?** |
| Different types of exercise can affect pulserate by different amounts. | ...................... |
| Different people can have different resting pulse rates. | ...................... |
| A high pulse rate means the heart is beating fast. | ...................... |

1 mark

(d)     Class 6 investigate the effect of exercise on pulse rate.
They measure Emily’s pulse rate three times:

|  |  |
| --- | --- |
| 1.      at rest.2.      straight after running for         10 minutes.3.      after resting for 20 minutes. |  |

Look at the table of results below.
Some of Emily’s pulse rates are missing.

Complete the table of results by predicting Emily’s pulse rates straight after running and after resting for 20 minutes.



|  |  |  |  |
| --- | --- | --- | --- |
|   | **At rest before running** | **After running for 10 minutes** | **After resting for 20 minutes** |
| **Pulse rate (heart beats per minute)** | 90 | ...................... | ...................... |

1 mark

(e)     Class 6 think of some questions about the heart and exercise.

Tick **THREE** boxes to show which questions the class could investigate by doing a fair test.



|  |  |
| --- | --- |
| Where is the heart found in the body? |  |
| How does age affect a person’s heart rate? |  |
| How does the heart work? |  |
| What does the heart look like? |  |
| Do tall people have faster pulse rates than short people? |  |
| Do people who exercise regularly eat more food than people who do not exercise? |  |

2 marks