**9 SCIENCE BIOLOGY ASSIGNMENT**

**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Due date:\_\_\_\_\_\_\_\_\_\_\_**

This assignment will allow you to find out about touch receptors and how they are distributed through the body.

**Introduction**

1. **Explain** what touch receptors are and what they do. (2 marks)

(Minimum of two sentences)

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2. **State** one area of the body where you would find a high concentration of touch receptors and **explain** why this is the case. (2 marks)

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3. **State** one area of the body where you would find a low concentration of touch receptors and **explain** why this is the case. (2 marks) (Minimum of two sentences).

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4. **List** three stimuli that your touch receptors can detect. (2 marks)

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**5.** There are two main groups of touch receptors. **List** them and **state** what each type detects.(2 marks)

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**References** (minimum two references)

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**PART TWO: EXPERIMENT**

**Title:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Aim:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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Note: when the subject feels two pin pricks from two pins placed 2mm apart, two nerves have been stimulated. This means that the receptors are no more than 2mm apart. Feeling only one pin prick indicates fewer receptors, spaced more widely.

**Hypothesis**

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**Materials**

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**Independent variable:**

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**Dependent variable:**

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**Two controlled variables:**

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**Method**

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**Results:** Table (show results taken from students in group).

**Graph** (graph the average results from your group on a piece of graph paper and attach to your work).

**Discussion**

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1. **State** the areas of the body you tested that had the greatest concentration of touch receptors. (1 mark)

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2. **State** the area of the body you tested that had the lowest concentration of touch receptors. (1 mark)

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**Conclusion**

(State general result, whether hypothesis was proven or disproven and use scientific reasons to explain why you got the results you did **or** why you would have expected different results).

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**Name:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**MARKING KEY**

|  |  |  |  |
| --- | --- | --- | --- |
| **Content** | **Description** |  | **Your**  **mark** |
| Introduction | Questions | 10 |  |
| Referencing | Minimum of 2 references.  Minimum 2 types of sources.  Referenced in correct format as shown in student diary | 1  1  1 |  |
| Title | Explains what the investigation is about –  NOT ‘Biology Investigation’ | 1 |  |
| Aim | What do you want to discover by doing this experiment? | 1 |  |
| Materials | Listed all materials used.  Is specific – has number of items used. Eg 5g of salt or 2 x 50ml beakers | 0.5  0.5 |  |
| Hypothesis | Clear statement predicting the effect of one variable changing.  Does not use ‘I’, ‘we’ etc. | 1  1 |  |
| Independent  Variable | Listed the independent variable. | 1 |  |
| Dependent  Variable | Listed the dependent variable. | 1 |  |
| Controlled  Variables | Listed at least two controlled variables. | 2 |  |
| Method | Is written in past tense.  Is written in numbered step-by-step.  Includes all the steps completed in experiment.  Must include labelled diagrams  Should explain how each of your controlled variables were  controlled | 1  1  1 |  |
| Results  table | Drawn neatly in pencil and using a ruler.  Includes the headings and units of measurement.  Includes all the data collected during the experiment and averages | 1  1  1 |  |
| Graph |  | 5 |  |
| Discussion | Describes at least one mistake/error that occurred.  Explains how this mistake/error affected the results.  Explains how this mistake/error could be avoided. | 1  1  1 |  |
| Discussion  Questions |  | 2 |  |
| Conclusion | One sentence stating the result of the experiment using figures (numbers) from your results  One sentence stating whether the hypothesis was supported or disproved.  Scientific reasons to explain results. | 1  1  3 |  |
| Presentation | Correct spelling, grammar, full sentences.  Written neatly or typed up neatly.  Subheadings used and highlighted appropriately | 2 |  |
| **Total mark** | | 45 |  |