**HUMAN BIOLOGY – YEAR 12**

**TASK 6 – REFLEX AND REACTIONS INVESTIGATION**

**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ MARK:\_\_\_\_\_ /70**

**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ WEIGHTING: 8%**

**The structure of the eye, ear and receptors in the skin allow the body to react to changes in the external environment. Receptors detect stimuli which include light, sound, changes in position, chemicals, touch, pressure, pain and temperature. Reflex actions are automatic and rapid, which involve sensory neurons, interneurons and motor neurons.**

This task is presented in two parts.

**Part A: Research phase [30 marks]**

Research and take notes on a reflexes, reactions and receptors. Notes should include how they are used in the human body.

**Part B: Experimentation**  **[40 marks]**

Complete a series of experiments and use knowledge gained from research to explain what occurs in the experiments.

**Part A – Research**

1. (a) Research and take notes on how reflexes, reactions and receptors are used in the human body. You must cover the following:

* What are reflexes, reactions and receptors. [4 marks]
* How are reflexes and reactions different. [4 marks]
* Table summarising receptors that detectlight, sound, changes in position, chemicals, touch, pressure, pain and temperature. Include: [4 marks]
  + Name of receptor
  + Location
  + Role (what it detects)
  + Part of brain activated/linked to
* Model showing neural pathway showing direction and neurons involved. [4 marks]
* Briefly explain: [4 marks]
  + The brain being used for voluntary actions
  + The brain stem (along with the spinal cord and mid brain) used for involuntary actions
  + The receptors of the body are used to detect change and link to either reflexes or reactions
* How does repetition of a task (training) affect performance of a task? [4 marks]
  + Include changes to neural pathways in the brain
* The effect of alcohol on reaction time [4 marks]

(b) You also need to provide a reference list/bibliography. Hand this in as a separate sheet attached to your note-taking sheet. You must include at least four references. If you do not provide a reference list of at least four references you will lose 3 **marks** overall.

2. You will also receive 2 marks for handing this in on the correct day due day. [2 marks]