***Year 11 ATAR  
Physical Education Studies***

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***Task 6***

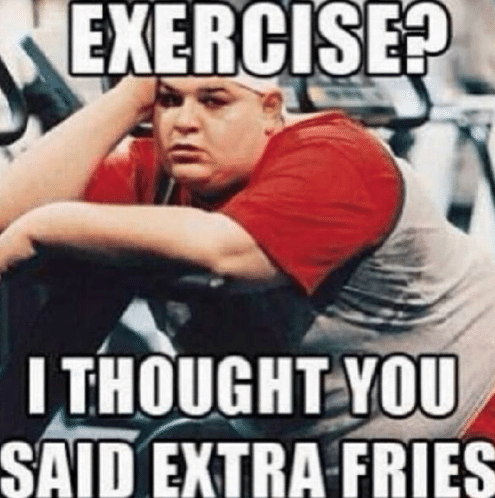
***Exercise Physiology Lab & Investigation***

***Weighting: 7.5%***

**Total Mark: /50**

**Percentage: %**

***STUDENT NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***



**INVESTIGATING PHYSIOLOGICAL RESPONSES TO EXERCISE**  
Investigate and report on the bodies short-term and long-term responses to physical activity.  
  
**Laboratory**  
Working with a partner, choose one person to participate in the Beep test and one person to record results.  
  
Your aim is to discover the immediate physiological responses to exercise, and explain why these responses are occurring.

Fill in the attached table by recording the following:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Heart Rate**  **BPM** | **Perceived Exhaustion Rate**  **Rating 1-10** | **Sweating**  **Rating 1-10** |
| **Level 1** |  |  |  |
| **Level 2** |  |  |  |
| **Level 3** |  |  |  |
| **Level 4** |  |  |  |
| **Level 5** |  |  |  |
| **Level 6** |  |  |  |
| **Level 7** |  |  |  |
| **Level 8** |  |  |  |
| **Level 9** |  |  |  |
| **Level 10** |  |  |  |
| **Level 11** |  |  |  |
| **Level 12** |  |  |  |
| **Level 13** |  |  |  |

**Blood Pressure**

Pre-test:

Post-test:

**(4 Marks)**  
**Investigation Questions  
  
Part A**   
1. Looking at your results, explain the pattern you noticed with regard to the subject’s heart rate. Why do you think this occurred? Did it plateau? **(3 Marks)**  
  
  
2. What was the difference between the subject’s blood pressure before and after the test? Why do you think this occurred? **(3 Marks)**  
  
  
3. Look at your results with regards to how much your subjected sweated throughout the test. Explain these results in relation to the concept of temperature regulation. **(3 Marks)**  
  
4. Think about the test your subject completed, and look at the results to determine what would have been happening to their body. Explain how each of the following would have changed as an immediate response to exercise and why? **(10 Marks)**  
  
a) Stroke Volume  
  
b) Heart Rate  
  
c) Selective Redistribution of Blood  
  
d) Oxygen Uptake (Oxygen Debt, VO2 Max, Oxygen Deficit)   
  
e) Tidal Volume  
  
**Part B**  
The Tour de France is an annual men's multiple stage bicycle race primarily held in France. It consists of 21 days of cycling separated into stages covering 3,500km in total.  
  
  
5. Prior to completing the Tour De France, a cyclist must endure many months, if not years of constant training. Explain **four** key adaptations that would occur as a result of long-term training. **(12 Marks)**

6. a) Explain the role that carbohydrates, fats and proteins play in an athlete’s diet.   
 **(6 Marks)**   
  
6. b) Considering the strenuous requirements of the Tour De France, what would be your recommendation for a pre-stage meal, nutrition during and nutrition immediately after the race? Explain. (You only have to focus on one ‘stage’, not the whole 3,500km!) **(9 Marks)**