

## **LESSON 2 ASSIGNMENT**

**For questions 1 through 5 use the data you recorded during your second set task.**

1. What is your target heart rate? Give your answer complete with calculations
2. Create a graph showing your heart rate (pulse rate) and body temperature over the course of the set task.
3. Discuss the changes in your heart rate with exercise, commenting on whether you met your target heart rate, when you reached it and how long it took you to recover to your pre-test (resting) heart rate. Comment on any physiological changes you noticed occurring that would be a response to your changing heart rate. Write one to two paragraphs.
4. Discuss the changes in your body temperature during the set task, commenting on the physiological changes you noticed occurring (and when) during the exercise and after it that would be a response to your changing heart rate. How long did it take for your body temperature to return to normal (pre-test level)?
5. Given the typical stroke volume for an adult male is 70mL/beat, calculate your cardiac output at each stage where you took your pulse rate and create a graph. Analyse the results in a paragraph, taking into consideration the fact that the average healthy adult has a cardiac output of between 5 and 6L/minute at rest.
6. Using the information you gathered in your first set task, draw up model electrocardiographs for a normal, healthy adult, and for adults with the three conditions you investigated. Explain how the electrocardiograph abnormalities relate to each condition in 2-3 sentences for each.
7. People who regularly undertake cardiovascular exercise can reduce their resting heart rate. Write a short report of no more than half a page explaining how/why this occurs, how it affects cardiac output and the overall benefit of reducing heart rate both at rest and during exercise.
8. Create an ordered bullet point list of the events involved in a cardiac cycle, including filling of the heart chambers, contractions of the heart chambers, passage of the blood from the heart and so on.
9. Draw a diagram depicting the contraction of a cardiomyocyte.