**Exam 4 Part B. Your Name:**

**Please TYPE your answers in an MS Word Document. When complete send your exam answers as an ATTACHMENT to an Email to Dr. Kravitz. Exam 4 Part B is due Friday May 1 by 12midnight. No late papers accepted. Also, academic honesty is totally active here. Please do your OWN work!**

This EXAM is open note. Please use the April 27-May 1 LINK to guide your answers.

**Negative Feedback Systems of the Body**

1. Definition: Please define how negative feedback systems work. (3 pts)

2. Go through the 6 steps of antidiuretic hormone, describing how the negative feedback system works with this hormone. (18 pts)

3. Go through the 7 steps of a negative feedback system NOT working with Type 2 diabetes. (21 pts)

4. In your own words, lease explain how insulin binds to its protein receptor and activates the GLUT4 protein. (6 pts)

5. Why are aerobic and resistance training exercise so important to the prevention or management of Type 2 diabetes? (3 pts)

6. How long do the GLUT4 proteins stay activated from exercise? (3 pts)

7. To prevent or help manage Type 2 diabetes, how OFTEN do most organizations (i.e. American Diabetes Organization) recommend doing exercise? (3 pts)

**Hormones of Exercise: GH, Aldosterone, Epinephrine and Norepinephrine**

1. What role does growth hormone play with fat metabolism with triglycerides? (3 pts)

2. What role does growth hormone play in muscle with triglycerides? (3 pts)

3. What one factor best describes the response of growth hormone from exercise? (3 pts)

4. How is the hormone aldosterone involved in exercise? (3 pts)

5. How are epinephrine and norepinephrine involved in exercise? (3 pts)

6. List four sympathetic-like physiological responses of epinephrine and norepinephrine? (4 pts)

**Cortisol and Protein Synthesis Inhibition**

1. Short essay: Using an exerciser example (as described in the YouTube video), describe how cortisol is really involved in protein synthesis inhibition? (20 pts)

**Glucose Hormonal Regulation: Regulation of Fat Metabolism**

1. Explain the plasma glucose hormonal regulation mechanism. (4 pts)

2. Explain the hormonal regulation of fat metabolism. (4 pts)

3. Explain why insulin levels drop in trained and untrained persons doing aerobic exercise. (4 pts)

4. Which hormone is the strongest INHIBITOR of fat metabolism (before and during exercise)? (3 pts)

**Oxygen Deficit and E.P.O.C.**

1. Draw a figure depicting the physiological steps of oxygen deficit (at the start of exercise) and E.P.O.C. after exercise stops. Either TAKE A Picture or SCAN your drawing and include within this document, or include as an attachment when you email Dr. Kravitz your Exam 4 Part B. (20 pts)

2. In your own words, define oxygen deficit? (4 pts)

3. What does E.P.O.C. mean? (3 pts)

4. What are 6 physiological factors that contribute to E.P.O.C.? (3 pts)

5. What variable is the most influential factor with E.P.O.C? (3 pts)

6. From the best research cited in the YouTube video, how long does E.P.O.C. last? (3 pts)

7. Explain WHY resistance exercise also has an E.P.O.C. (5 pts)

**Special Topic: Altitude Training**

1. What is the BEST Altitude training method and WHY? (8 pts)

**End of Exam.**