**Exam 3 Part D. Your Name:**

**Please TYPE your answers in an MS Word Document and when complete Email Dr. Kravitz your Exam 3 part D. Exam 3 Part D is due by Midnight November 6. No late papers accepted. Also, academic honesty is totally active here. Please do your OWN work!**

This EXAM is open note. Please use the November 2-6 WEB LINK and YOUTUBE videos to guide your answers.

**Class, the EXAM questions are in sequence with HIIT YOUTUBE videos Part 1, Part 2, and Part 3. Please answer the following questions presented in the YOUTUBE videos (also on the WEB). Each answer is worth 4pts for a total of 132pts.**

1. Explain the concept of the Work bout and the Relief bout with interval training?

2. What is Sprint Interval Training (SIT)?

3. What is High Intensity Interval Training (HIIT)?

4. What is the intermittent exercise program?

5. There are THREE types of interval training. Please briefly explain them.

6. What famous researcher from France has archived the history of interval training in sport?

7. Pavoo Nurmi introduced Random Bout Interval training. In your own words explain this type of training.

8. Sigfried Heman introduced Variable Intensity Interval Training. In your own words explain this type of training.

9. Greta Waitz popularized a type of training, which is not interval training, called Tempo Training. In your own words explain this type of training.

10. Who holds he world marathon record for women?

11. Two major pioneer researchers, from Scandinavia countries, established the foundation of interval training research. What are their names?

12. These pioneer researchers introduced doing research on interval training TWO ways. What are the two ways?

13. The introduction of the biopsy needle paved the way to understanding many of the metabolic adaptations of HIIT training. Who developed the biopsy needle?

14. Please name two key researchers on HIIT Training and neurological benefits?

15. What does BDNF stand for?

16. What does BDNF do in the brain?

17. To prevent cognitive decline, what relative intensity is best?

18. What does brain plasticity mean?

19. Where in the brain is the center for learning and memory?

20. What is another adaptation in the brain, discussed in the YOUTUBE video from HIIT training?

21. What is the major TAKE-HOME message, from Dr. Kravitz on VO2max?

22. From the JAMA article, for every MET increase in VO2max, how much of a decrease is there in cardiovascular disease?

23. For cardiovascular function, which is the most potent stimulus of exercise?

24. In your own words, please describe the most common HIIT program to improve cardiovascular function.

25. A capstone study by Helgerud et al. showed that HIIT workouts can improve VO2max in TRAINED males how much?

25. A capstone study by Helgerud et al. showed that HIIT workouts can improve Stroke Volume in TRAINED males how much?

26. HIIT has been shown to improve peak power up to how much?

27. HIIT has been shown to improve anaerobic power by how much?

28. HIIT has been shown to have a higher E.P.O.C. What does this mean?

29. HIT has been show to improve insulin sensitivity how much?

30. With HIIT training, what protein that transports glucose into the cell, is significantly increased?

31. In your own words, how effective is HIIT training in reducing systolic and diastolic blood pressure (that was elevated)?

32. In your own words, explain the HIIT protocol of the Australian study that had such great success in reducing body fat?

33. What is the name of the protein that turns on the DNA to make more mitochondria and bigger mitochondria?

**34. Design two HIIT workouts for YOU? (40 pts each)**

**Answer the following questions for each HIIT workout.**

a) For each workout, please explain if it is a SIT, HIIT, or Intermittent workout

b) For each workout, please explain if it is Aerobic-based, Resistance-based or Hybrid Intermittent

c) The workout should be up to 30 minutes long: how long is each of your workouts

d) Describe what equipment, if any, will you be using

e) Describe what you will do for each WORK bout (for how long and at what RPE intensity) and for each RELIEF bout (for how long and at what RPE intensity)

f) Explain what you will do for your warm-up and cool down

g) Discuss how many times a week would be optimal for you to do EACH workout

**End of Exam. Thank you.**