Exercise Science Review #3

1. What are the three components of the CV system and what are its 4 functions
2. What is the myocardium, pericardium, epicardium, and know the what side of the heart the pulmonary and systemic circulation occurs – what is the exception to the rule for veins and arteries
3. Know the pathway of the heart from the vena cava to the aorta
4. Know the components of the electrical system of the heart and what is the pacemaker
5. Know what makes up the ECG with respect to atrial and ventricular repolarization and depolarization
6. What is the cardiac cycle and what is happening during the diastolic and systolic phase – what is hypertension and what is the top number and bottom number for BP
7. What are three things that affect blood pressure
8. What are the 5 types of blood vessels in the vascular system
9. What are the two types of pumps that assist venous blood return
10. What are the two man components of blood and what are the three components of the blood cells and their function
11. What is plasma mainly made of
12. Be able to define stroke volume, Heart rate, Cardiac Output (Q), Frank Starling Law and Ejection Fraction
13. What is SV, HR and CO (Q) how does exercise effect each and what does training do to SV and HR
14. What are the three main functions of the lungs and what are the two zones for respiratory system?
15. What are the 5 structures of the conductive zone and 3 structures of the respiratory zone?
16. In jot dot form be able to explain the mechanics of breathing including the terms inspiration, expiration, diaphragm, thoracic cavity, lungs and air pressure
17. Be able to define the following terms Ventilation, Tidal Volume and respiration frequency
18. Beside Pons what is the respiration control center found in the brain stem and what are the two main functions of the expiratory center.
19. What 2 categories are lung volumes
20. Be able to define three static lung volumes – TLC, VC and RV
21. BE able to describe how and why training at high altitude effects your body and for how long
22. Define diffusion and what are three things that rate of diffusion depend on
23. How is oxygen and carbon dioxide transported with in the blood
24. Be able to define the differences between internal and external respiration
25. Be able to how training effects the Lactate threshold (LT) and onset of blood lactate accumulation (OBLA)
26. How is Oxygen deficit and EPOC (excess post exercise oxygen consumption) effected with exercise

27. Be able define what macronutrients and macronutrients and know examples for each
28. Know the function of proteins, an example and the number of calories they provide for each gram of protein
29. Know the difference between a complete protein and incomplete protein
30. Know the function of carbohydrates, an example and the number of calories they provide for each gram of carbohydrates

31. What is the difference between simple and complex carbohydrates as far as examples and time in which sugar is released to the cells
32. Know the function of fats, an example and the number of calories they provide for each gram of fats
33. Know the difference between HDL's and LDL's and another name for each and why they are good are bad for you.
34. Know examples for HDL's and LDL's
35. Know three functions of vitamins
36. Know 4 functions of minerals
37. Know the 4 categories of the Canada Food Guide
38. Know what the energy equation is and what does the energy storage equals
39. Define the Metabolic Rate and the Basal Metabolic rate
40. What are the 5 factors that affect your Metabolic Rate
41. Be able to calculate your RMR using the Harris-Benedict equation
42. Be able to read a food label
43. What kind of tool is the BMI
44. What does BMI estimate
45. If your BMI is high what 6 diseases are you risking?
46. Know the BMI categories and what factors can cause the BMI to overestimate fat and underestimate fat
47. What are 4 factors that effect your BMI
48. Be able to use the BMI table
49. What 5 factors lead to obesity?
50. What are 8 factors that lead one to believe a person has a eating disorder
51. What are 5 negative side effects of an eating disorder reducing the person's weight
52. Know the relationship between diet consumption and the type of athlete you are coaching
53. What are 2 functions of fluid replacement and why is it important
54. What is the best fluid to replace and when should fluid placement occur?
55. List 5 reasons why are Ergogenic aids used by athletes
56. What are 3 types of Ergogenic aids
57. Define the following nutritional aids, the reason athletes take it and 2 negative side effects for each: Vitamins and minerals, Protein and amino acid supplements, Carnitine, Creatine, Caffeine
58. Define the following Pharmacological aids, the reason athletes take them and 2 negative side effects of each, they include: Pain-masking drugs, Anabolic steroids, Prohormones, Human growth hormone, and Erythropoietin
59. What is the negative effect that each of these pharmacological substance have on performance: Alcohol, Marijuana, 33.Local anaesthetics, Corticosteroids, Beta blockers