Exercise Physiology and Biochemistry

Final Exam Topics:

1. Acute and Chronic Responses to Exercise. Overview of exericsing muscles.
2. Bioenergetics and muscle metabolism.
3. Energy substratas. Storing of energy. The basic energy systems.
4. Neural Control of Exercising Muscles.
5. Sensory-Motor Integration.
6. Physiologic response/adaptation of autonomic nervous system, practical test conduction.
7. Hormonal control of exercising muscles. Hormonal regulation of metabolism,
8. Fluid and electrolyte balance during exercise and caloric intake.
9. Respiratory system regulation during exercise.
10. Pulmonary ventilation, pulmonary volumes, pulmonary diffusion, gas exchange in muscles.
11. Functional test of functional system, peakflowmetry.
12. Cardiovascular system control during exercise. Heart, vascular system and blood.
13. Cardiorespiratory responses to acute exercise. Energy expenditure and fatigue.
14. Physiological and biochemical bases of the physical working capacity test.
15. Exercise training. Adaptation to resistance training. Adaptation to aerobic and anaerobic training.
16. Environmental influences on performance. Exercise in hot and cold environment at altitiude.
17. Optimizing performance in sport. Body composition and its assessment.
18. Nutrition for sport. Optimizing training. Periodization of training. Overtraining. Ergogenic aids in sport.
19. Age and gender considration in sport and exercise.
20. Children and adolescents in sport. Aging in sport and exercise. Gender differences in sport and exercise.
21. Physical activity for health and fitness. Prescription of exercise for health and fitness.
22. Cardiovascular disease, Obesity and diabetes and physical activity.