Unit 4 – PERFORMANCE ENHANCEMENT
Cardiovascular/Respiratory Systems & Athletic Performance
Lecture Guide

1. Functions of the Cardiovascular System
   a. Carry wastes from the cells

2. Anatomy of the Cardiovascular System
   a. Atrium
   b. Ventricles
   c. Tricuspid Valve
   d. Bicuspid Valve
   e. Pulmonary Semilunar Valve
   f. Aortic Semilunar Valve
   g. Superior & Inferior Vena Cava
   h. Pulmonary Artery
   i. Pulmonary Vein

3. Vessels of the Cardiovascular System
   a. Arteries –
   b. Veins –
   c. Capillaries –

4. Functions of the Respiratory System
   a. Respiration –
   b. Ventilation – inhaling & exhaling air in & out of the lungs

5. Anatomy of the Respiratory system
   a. Nose
   b. Pharynx
   c. Larynx
   d. Trachea
   e. Bronchi
   f. Bronchioles
   g. Alveoli
6. Blood Pressure
   a. Normal –
   b. Systolic –
   c. Diastolic –

7. Respiratory Rate
   a. Average –

8. Pulse Rate
   a. Average Resting –
   b. Carotid:
   c. Brachial:
   d. Radial:
   e. Femoral:

9. Lung Volume
   a. Tidal Volume: amount of air breathed in & out during __________ breathing.
   b. Vital Capacity: amount of air breathed in & out during __________ __________ __________ & __________ __________.
   c. Spirometer: apparatus for measuring __________ __________.

10. Cardiovascular Parameters
    a. Stroke Volume: amount of blood ejected from _____ left ventricular ____________.
        i. Average resting:
        ii. Exercise:
    b. Cardiac Output: amount of blood ejected in _____ ____________.
        i. Average resting:
        ii. Exercise:
    c. During ____________ oxygen demand to working muscles ____________ driving the ____________ of ____________ ____________ and heart rate, therefore increasing ____________ ____________.

11. Cardiovascular Testing
    a. VO$_2$max – how well a person can use ____________ while ____________.
        i. A more ____________ athlete will have a ____________ VO$_2$max.
ii. Average male athlete:
iii. Average female athlete:
b. Harvard Step Test
   i. Step up and down on step for 5 minutes
   ii. Take heart rate 1, 2, & 3 minutes after finishing
   iii. Determine fitness level
c. 12 minutes run/walk test
   i. Measure distance covered in 12 minutes
   ii. Can calculate estimated __________________.

12. Short term effect of exercise on Cardiovascular/Respiratory Systems
a. Cardiovascular System
   i.
   
   ii.
   
   iii.
   
   iv.
   
   v.

b. Respiratory System
   i.
   
   ii.

13. Long term effect of exercise on Cardiovascular/Respiratory Systems
a.

b.

c.

d.

e.

14. Aerobic vs. Anaerobic
a. Aerobic:
   i. Examples:

b. Anaerobic:
   i. Examples:
15. Warm up vs. Cool down
   a. Warm up – prepares body for training by _______________ and body temperature.
      i. May include:
   b. Cool Down - _______________ slowing of exercise to allow all body systems to _______________ to _______________ state.
      i. Best time to use _______________

16. Cardiovascular Training Methods
   a. Intervals: series of _______________ bouts of _______________ exercise alternated with periods of _______________ exercise or _______________.
      i. Advantages:
      ii. 5 ways overload is accomplished
         1. _______________.
         2. _______________.
         3. _______________.
         4. _______________.
         5. _______________.
      iii. Example:
   b. Fartlek: Swedish word means _______________.
      i. Alternate _______ and _______ running over natural terrain.
      ii. _______ and _______ intervals ________ timed.
      iii. Builds both _______________ and _______________ capacities.
      iv. Example:
   c. Circuit:
d. Continuous: activity without _______________ intervals
   i. Usually between _______________ max HR
   ii. Should last at least _______________ min.
   iii. Threshold pace:
   iv. Long slow distance:

17. F.I.T.

a. Frequency:
   i. Example:

b. Intensity
   i. Target Heat Rate
      1. Formula:
      2. Moderate intensity:
      3. Vigorous intensity:
   ii. Rate of Perceived Exertion (RPE)
      1. BORG scale
      2. Based on _______________ of physical exertions
         including increased _______________,
         _______________, _______________, and
         muscle fatigue.
      3. Scale:
      4. Moderate intensity:

c. Time:
   i. Example: