**Physiology 115 Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Spring 2015

**QUIZ #4**

For the multiple choice questions, there is *one* and *only one* best answer. Use the back of the sheet if you need to complete answers.

1. Which structure in the mitochondria contains the proteins and lipids involved in the oxidation-reduction reactions of the electron transport system?
   1. cytosol
   2. matrix
   3. intermembrane space
   4. outer membrane
   5. **inner membrane**
2. Which of these electron-accepting coenzymes will produce three (3) ATP molecules during oxidative phosphorylation?
   1. FADH2
   2. **NADH**
   3. ethanol
   4. lactate
   5. CO2
3. Which of these is a function or feature in a lysosome?
   1. contains digestive enzymes in its vesicle that will activate on acidification
   2. has proton (H+)-ATPases in its membrane to pump H+ into the vesicle
   3. is produced as a vesicle budding off the *trans* face of the Golgi complex
   4. **all of the above**
   5. none of the above
4. Do EITHER (a) OR (b)  
   (a) Give the names of three (3) things that fundamentally form or are characteristic of the rough ER   
   (b)What are the three (3) trafficking fates for vesicles coming off the Golgi complex (name & describe)?  
     
   (a) 1. membranes are a fundamental feature of the ER and other organells   
    2. lumen, this is the space bounded by the membranes  
    3. ribosomes: these are macromolecular assemblies of RNA (ribosomal RNA) and proteins  
   other acceptable answers

* cisternae: these are really the membrane and lumen together (which would make up 2 things together
* continuous with nuclear envelope
* vesicles: these bud off and go to the Golgi
* protein synthesis (particular because of ribosomes

(b) 1. constitutive secretion: vesicles that usually are made with the purpose that their phospholipids and integral proteins become part of the plasma membrane, replenishing it in this way; they may also exocytically expel contents inside the vesicle that are to be utilized in the extracellular space surrounding the cell

2. regulated secretion: vesicles that are usually filled with proteins or nonproteinaceous substances that move just next to the plasma membrane and wait for a signal or event which causes membrane fusion by the processes of exocytosis  
3. lysosomal formation: vesicles that will acquire a function of digesting materials obtained by the cell via phagocytosis, pinocytosis or receptor-mediated endocytosis when fused with the endocytic vesicles