

## Lecture 17: Active Learning Questions

1. What is the difference between the *conductive* and *respiratory zones*? What are required for a *functioning respiratory zone*?
2. Where does *gas exchange* take place? Where is the highest concentration of *carbon dioxide* within the human body? Where is the highest concentration of *oxygen*?
3. What *iron-containing protein molecule* carries *oxygen (O<sub>2</sub>)* in the blood? *How many O<sub>2</sub>s* are carried by each protein molecule? *What* poisonous and potentially lethal *gas* binds with more than *200-fold greater affinity* than O<sub>2</sub> to its iron-containing *binding site*? Name *two sources* of this poisonous and lethal gas.
4. What *organs* besides the lungs are adversely affected by *cigarette smoke*? What happens to *cilia* when they are exposed to cigarette smoke? Why do cigarette companies add *ammonia* to cigarettes? What is *emphysema* and what is a major *cause*?
5. *E-cigarettes* and vaping are viewed as benign by the lay public. What happens to methicillin-resistant *Staphylococcus aureus* (MRSA) when it is exposed to vapors from e-cigarettes? The solvents in which the nicotine and flavors are dissolved can breakdown or be transformed into carbonyls like *formaldehyde*. What is the risk of exposure to *formaldehyde*?