

## Self Assessment RSPT 2350 – Module C

- The following acronym is used to remember blood gas errors. What do the initials mean?
  - “A”: AIR IN THE SAMPLE**
  - “V”: VENOUS SAMPLE**
  - “E”: EXCESSIVE/IMPROPER ANTICOAGULANT**
  - “R”: RATE OF METABOLISM**
  - “T”: TEMPERATURE DISPARITY BETWEEN PATIENT & MACHINE**
- What is held constant in Gay Lussac's Law?
  - VOLUME**
  - MASS**
- Gay Lussac's law states that as temperature increases, pressure will **INCREASE.**
- Interpret the following ABG obtained on an  $F_{iO_2}$  of .40:  
pH: 7.56,  $P_{aCO_2}$ : 35 torr,  $HCO_3^-$ : 26 mEq/L, and  $P_{aO_2}$ : 110 mm Hg  
**LAB ERROR; ALKALOTIC pH WITH NORMAL  $P_{aCO_2}$  AND  $HCO_3^-$**
- Henry's law states that the amount of oxygen that dissolves in the blood is dependent on **THE SOLUBILITY OF THE GAS** and **PARTIAL PRESSURE OF THE GAS.**
- Explain how an air bubble will affect the ABG result if the arterial  $PO_2$  is 60 mm Hg.
  - $P_{aCO_2}$  WILL DECREASE**
  - $P_{aO_2}$  WILL INCREASE**
  - pH WILL INCREASE**
- You are attempting to obtain a femoral ABG from a patient who is hypotensive. You suspect that your ABG may have been contaminated with venous blood. This is called venous admixture. How will this effect the ABG results? **A 1/10<sup>TH</sup> PART CONTAMINATION WILL LEAD TO A 25% ERROR IN  $P_{aO_2}$ .**

8. What is the normal WBC count? **4,000 TO 10,000 (DEPENDS ON LAB), YOUR BOOK SAYS 6,000 TO 10,000!**
9. In which clinical condition may an elevated WBC count affect the ABG results? **LEUKOCYTOSIS**
10. For each 1° C increase in temperature, oxygen consumption increases **10 %**. **I WON'T ASK YOU THIS BECAUSE I DON'T HAVE A GREAT REFERENCE FOR IT.**
11. A near drowning victim is seen in the ER and has a body temperature of 34° C. How will the patient's temperature affect the PaCO<sub>2</sub>, PaO<sub>2</sub> and pH?
- |                        |                    |                    |              |
|------------------------|--------------------|--------------------|--------------|
| PaCO <sub>2</sub> will | A. Increase        | B. <b>Decrease</b> | C. No change |
| PaO <sub>2</sub> will  | A. Increase        | B. <b>Decrease</b> | C. No change |
| pH                     | A. <b>Increase</b> | B. Decrease        | C. No change |
12. Which cells in the blood are responsible for high metabolic activity?  
**LEUKOCYTES, PLATELETS, AND RETICULOCYTES**
13. The general consensus in the literature is **NOT** to correct for temperature changes when analyzing an ABG.
- A. True  
B. **False THIS IS TRUE, BUT MOST LABS STILL DO.**
14. You are drawing from an A-line and have not adequately withdrawn enough waste to remove the heparin from the line. Which ABG parameter will most likely be affected?
- A. HCO<sub>3</sub><sup>-</sup>  
B. pH  
C. **PaCO<sub>2</sub>**  
D. PaO<sub>2</sub>
15. Which of the following has the greatest effect on an ABG result?
- A. Size of an air bubble  
B. **Duration of exposure to an air bubble**
16. Give a clinical example where the patient may look good and have bad ABG results. **METABOLIC ALKALOSIS WHERE PATIENT IS NOT BREATHING RAPIDLY (ACTUALLY HYPOVENTILATION IS COMPENSATORY) AND MAY NOT BE HYPOXEMIC.**

17. Give a clinical example where the patient may look bad but have good ABG results. **“NORMALIZED” ABG SECONDARY TO HYPERVENTILATION FOR A METABOLIC ACIDOSIS.**
18. You obtain the following ABG results. What do you think????  
PaO<sub>2</sub>: 149 torr      SaO<sub>2</sub> 82% measured by co-oximeter  
MetHb% and COHb% are normal Temperature 37° C  
PaCO<sub>2</sub> 40 mm Hg      pH 7.40 **LAB ERROR**