

Self-Assessment RSPT 1050: Modules G & H

The following ABG was drawn at a P_B of 760 mm Hg and a FiO_2 of .40.

pH: 7.20 $PaCO_2$ 89 torr PaO_2 : 50 torr HCO_3^- : 35 mEq/L SaO_2 78% Hb 12 gm%

1. Calculate the PAO_2 . $[(760 - 47) * .40] - (89 * 1.25) = 285.2 - 111.25 = 173.95 = 174$ mm Hg
2. Calculate the A-a gradient. $174 - 50 = 124$ mm Hg
3. Which parameter(s) tell us if the patient is hypoxemic? PaO_2
4. Is the oxygen dissociation curve shifted? **YES, TO THE RIGHT**
5. Calculate the CaO_2 . $(12 * 1.34 * .78) + (50 * .003) = 12.86 + .15 = 13.01$ vol%
6. Which parameter tells us about how well the patient is ventilating? $PaCO_2$
7. Does the patient have
A. **Hypocapnia** B. Hypocapnia C. Eucapnia
8. How would you assess the patient ventilation?
A. Hyperventilating B. **Hypoventilating** C. Normal ventilation
9. Is the alveolar ventilation
A. Increased? B. **Decreased** c. Normal
10. Which three parameters do we use to evaluate the acid-base balance in the body? **pH, $PaCO_2$, HCO_3^-**
11. Which parameter is defined as the negative log of the H ion concentration? **pH**
12. Interpret the ABG:
A. Is there an acidosis or alkalosis? **ACIDOSIS**
B. What is the primary acid-base disturbance? **RESPIRATORY ACIDOSIS**
C. What is the degree of compensation? **PARTIALLY COMPENSATED**
D. What is the degree of hypoxemia? **MODERATE**
13. Which parameter is used as an indicator of carbonic acid in the blood? $PaCO_2$
14. The effect of O_2 on the CO_2 dissociation curve is called the **HALDANE** effect.
15. Define a base **A PROTON ACCEPTOR**

16. The following ABG was drawn at a P_B of 740 mm Hg and a F_{iO_2} of .40.
 pH: 7.53 $PaCO_2$ 20 torr PaO_2 : 60 torr HCO_3^- : 35 mEq/L SaO_2 94% Hb 8 gm%
17. Calculate the PAO_2 . $[(740 - 47) * .40] - (20 * 1.25) = 277.2 - 25 = 252.2 = 252$ mm Hg
18. Calculate the A-a gradient $252 - 60 = 192$ mm Hg
19. Calculate the CaO_2 . $(8 * 1.34 * .94) + (60 * .003) = 10.08 + 1.8 = 10.26$ vol%
20. Which parameter tells us if the patient has hypoxemia? **PaO_2**
21. Is the oxygen dissociation curve shifted? **YES, TO THE LEFT**
22. If yes, what could be causing the shift? **pH and $PaCO_2$**
23. Does the patient have
- A. Hypercapnia B. **Hypocapnia** C. Eucapnia
24. How would you assess the patient's ventilation?
- A. **Hyperventilating** B. Hypoventilating C. Normal ventilation
25. Is the alveolar ventilation
- A. **Increased** B. Decreased C. Normal
26. Interpret the ABG
- A. Is there an acidosis or alkalosis? **ALKALOSIS**
- B. What is the primary acid-base disturbance? **MIXED**
- C. What is the degree of compensation? **NONE**
- D. What is the degree of hypoxemia? **MILD**
27. Define an acid: **A PROTON DONOR**
28. Where do fixed acids come from? **BODY METABOLISM AND INGESTED POISONS.**
29. What is the ratio of HCO_3^- to H_2CO_3 if the pH is normal? **20:1**
30. Name three systems that regulate pH in the body.
- A. **LUNGS** B. **KIDNEYS** C. **BUFFERS**
31. Explain the relationship between H ions and pH **INVERSE**
32. Name three ways CO_2 is carried in the RBC and the % of each
DISSOLVED IN INTRACELLULAR FLUID (5%), CARRIED AS A CARBAMINO COMPOUND WITH HEMOGLOBIN (21%), CONVERTED TO BICARBONATE (63%).