**ASSIGNMENT MODULE C**

1. List the fractional concentrations of the four major gases that comprise the atmosphere

|  Gas | Fractional Concentration |
|---|---|
| A. **Nitrogen** | **78%** |
| B. **Oxygen** | **21%** |
| C. **Argon** | **0.9%** |
| D. **Carbon Dioxide** | **0.03%** |

2. Given a barometric pressure of 760 torr, calculate the $PiO_2$
   **(PBaro – 47 mm Hg) x FiO$_2$ = (760-47) x .21 = 150 mm Hg**
   **REMEMBER TO SUBTRACT OUT 47 mm Hg WHENEVER YOU SEE THE SMALL "i" IN THE QUESTION (PiO$_2$, FiO$_2$)**

3. Given a barometric pressure of 760 torr, calculate the $PiN_2$
   **(PBaro – 47 mm Hg) x FiN$_2$ = (760-47) x .78 = 556 mm Hg**

4. Given a barometric pressure of 760 torr, calculate the PiAr
   **(PBaro – 47 mm Hg) x FiAr = (760-47) x .009 = 6.4 mm Hg**

5. Given a barometric pressure of 760 torr, calculate the $PiCO_2$
   **(PBaro – 47 mm Hg) x FiCO$_2$ = (760-47) x .0003 = 0.21 mm Hg**

6. Given a barometric pressure of 750 torr, calculate the $PiO_2$
   **(PBaro – 47 mm Hg) x FiO$_2$ = (750-47) x .21 = 148 mm Hg**

7. Given a barometric pressure of 740 torr, calculate the $PiCO_2$
   **(PBaro – 47 mm Hg) x FiCO$_2$ = (740-47) x .21 = 0.21 mm Hg**

8. Given a barometric pressure of 755 torr and an $FiO_2$ of .40, calculate the $PiO_2$
   **(PBaro – 47 mm Hg) x FiO$_2$ = (755-47) x .40 = 283 mm Hg**

9. Given a barometric pressure of 735 torr and an $FiO_2$ of .60, calculate the $PiO_2$
   **(PBaro – 47 mm Hg) x FiO$_2$ = (735-47) x .60 = 413 mm Hg**

10. Given a barometric pressure of 740 torr and an $FiO_2$ of .30, calculate the $PiO_2$
    **(PBaro – 47 mm Hg) x FiO$_2$ = (740-47) x .30 = 208 mm Hg**

11. Given the following information, calculate the partial pressure of Gas C

    | | |
    |---|---|
    | Total Pressure in the gas mixture: | 740 mm Hg |
    | Partial Pressure of Gas A | 400 torr |
    | Partial Pressure of Gas B | 30 torr |
    | Partial Pressure of Gas D | 50 torr |
    | Partial Pressure of Gas E | 35 torr |
    | Partial Pressure of Gas C | ? |

    **PTOTAL = PA + PB + PC + PD + PE**
    **PC = PTOTAL – (PA + PB + PD + PE) = 740 – 400 – 30 – 50 – 35 = 225 mm Hg**

12. Given a PB of 760 mm Hg, $FiO_2$ of .40 and a $PaCO_2$ of 50 torr, calculate the $PAO_2$.

**$PAO_2$ = [(PBaro – 47) x $FiO_2$] – ($PaCO_2$ x 1.25) = [(760-47) x .4] – (50 x 1.25) = [(713) x (.4)] – 62.5 = 285.2 – 62.5 = 223 mm Hg**

13. Given a PB of 750 mm Hg, $FiO_2$ of .50 and a $PaCO_2$ of 70 torr, calculate the $PAO_2$.

**$PAO_2$ = [(PBaro – 47) x $FiO_2$] – ($PaCO_2$ x 1.25) = [(750-47) x .5] – (70 x 1.25) = [(703) x (.5)] – 87.5 = 351.5 – 87.5 = 264 mm Hg**