Anatomy and physiology

[Author Name(s), First M. Last, Omit Titles and Degrees]

[Institutional Affiliation(s)]

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# Discussion

**Answer 1:** Yes, compensation will occur. The process compensation involves renal system. During metabolism, excessive acids are secreted by the kidneys while reabsorbing HCO3 thus increasing PH. To achieve balance PH the compound HCo3 will bind with H+ forming H2CO3 that will, in turn, remove h+.

**Answer 2:** No compensation is not occurring. However, the levels of pco2 are low while HCO3 is at normal. With metabolic acidosis, respiration process will increase in order to blow off the CO2.

**Answer 3**: The increase in the respiratory compensation will increase the respiratory rate that will help in the exhalation of excessive Co2 which will, in turn, decrease the concentration of hydrogen that will make PH normal.

**Answer 4:** Respiratory compensation will decrease the respiratory rate that will in turn increase CO2 while increasing the concentration of hydrogen in blood thus decreasing the PH to a significantly normal level.

**Answer 5:** Normal level of PH ranges from 7.35 to 7.45 while normal acidosis is lower than 7.35 also the alkalosis is much greater than 7.45. The corrected normal range of pco2 is from 35 to 45. The respiratory alkalosis is greater than 45 while respiratory acidosis is less than 35. Normal HCo3 ranges 22-26 whereas the value of alkalosis is greater than 26 (incorrect pt) the respiratory acidosis PH is 7.25 while pco2 is 74. The respiratory alkalosis PH level is 7.5 also pco2 is 74 and metabolic acidosis 7.29 also metabolic alkalosis is 7.51 and HCO3 is 14.

**Application**

**Answer 1:** Copd patients will have an elevated respiratory rate to blow off CO that will retain CO2. This will increase the concentration of hydrogen in the blood thus the PH level decreases.

**Answer 2:** Holding the breath for a limited time the pco2 and h+ will increase at a much faster rate that, the body will start breathing involuntarily to return to the normal level.

**Answer 3:** Anxiety attack may result in an increased respiratory rate thus causing hyperventilation. The exhalation of too much Co2 will decrease the concentration of hydrogen in blood that will result in respiratory alkalosis.

**Answer 4:** Uncontrolled diabetes leads to the development of ketones which by nature are acidic. They tend to build up in blood, they can cause both metabolic acidosis as well as ketoacidosis.