Blood Gas Analysis in the Neonatal Unit

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Read each question carefully and circle your answer as appropriate

1. Define what is meant by acid
2. Define what is meant by base
3. What does pH indicate?
4. What is the function of a buffer?
5. How does the body excrete acids?
6. The concentration of hydrogen ions determines the ……. Or ……. Of body fluids
7. The normal pH of body fluids is between 7… and 7…
8. The mechanisms the body has for regulating acid-base balance include the ……, …….. and ….. systems
9. Respiratory acidosis and alkalosis is determined by an abnormality in the ….
10. Metabolic acidosis and alkalosis is seen by changes in the …….. ….. or …. ……
11. Which values in the table are outside the normal range?

pH	p02	pC02	HC03	BE
7.33	65	58	24	2
7.46	65	33	30	4.7
7.23	37	63	21.6	-6.4

12. Which of the following blood gases indicate metabolic acidosis?

pH	p02	pC02	HC03	BE
7.33	65	45	16	-6
7.46	65	33	30	4.7
7.36	38	55	15	-10

13. Compensation by the renal system:
    a) Occurs within minutes
    b) Cannot occur
    c) Can take hours to days

14. You have air bubbles in your blood gas, how will this affect your result?
15. Calculated oxygen saturations are based on _____ Hb not on _____ or _____ Hb.
16. You are nursing an infant who has severe RDS and is hypoxic, what would you expect to see on your blood gas?
17. What are the three chemical buffers in the blood?
18. An eight hour old 38 week gestation has required oxygen since birth. He is currently on 60% oxygen via humidified high flow, saturations are 95%. The following blood gas was obtained from a umbilical artery

pH	C02	p02	HC03
7.35	25	45	14

Which values are outside the normal range?

Is the gas normal, compensated or uncompensated?

Explain your answer