



**The Hong Kong College of Anaesthesiologists
Intermediate Fellowship Examination**

Written Paper in Physiology

11 July 2008

The questions carry equal marks. Answer ALL of them.

- 1. Describe the sequence of cardiovascular and respiratory changes that occur at birth in a newborn baby.**
- 2. What are the functions of cerebrospinal fluid? Describe how it is produced, circulated and absorbed and relate them to the intracranial pressure.**
- 3. What are the functions of red blood cells and briefly mention how these functions are interrelated?**
- 4. Explain the cardiovascular changes that occur during a Valsalva manoeuvre. What would happen to the changes if a patient had congestive cardiac failure?**
- 5. Describe peripheral and central sensitization of pain.**
- 6. Define pH and base excess (BE). Describe how the variables pH and BE on a blood gas report are derived.**
- 7. What are the determinants of plasma osmolality? Describe how plasma osmolality is regulated.**
- 8. Briefly explain the principles of capnography. List the potential sources of error.**
- 9. Describe the process of vomiting and the neural pathways regulating it.**
- 10. Give an account of the factors that are involved in the control of arteriolar smooth muscle tone.**
- 11. When an airway becomes obstructed explain why an infant becomes hypoxic more quickly than an adult.**
- 12. In the respiratory system, what is meant by the term “dead space”? Explain the principles behind the measurement of anatomical and physiological dead space.**

END OF PAPER