



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

**Written Paper in Physiology**  
Friday, 7 July 2006, 09:00 h. – 11:00 h.

The questions carry equal marks. Answer ALL of them.

1. Briefly explain how human erythrocytes carry out different types of functions in the body.
2. Briefly describe the role of buffers in the control of body pH.
3. Discuss the factors affecting the rate of gastric emptying in adults.
4. What are primary afferent nociceptors and how do they function? Briefly explain what happens to their response after a *brief* period of *noxious* stimulation.
5. Give an account of cerebrospinal fluid.
6. State the reaction catalysed by the enzyme carbonic anhydrase (carbonate dehydratase). List the physiological processes involving this enzyme in the human body. Briefly describe any three of these processes.
7. What determines cardiac output? Briefly describe 3 methods of measuring cardiac output.
8. Describe the factors affecting the vascular motor tone.
9. Discuss the physiological principles involved in the reflex of vomiting.
10. List the hormones and briefly outline their roles in the regulation of the blood glucose.
11. Briefly describe how blood pressure is derived using an oscillometric blood pressure machine and list the sources of inaccuracies.
12. What is preoxygenation? Explain the physiological principles of preoxygenating a patient before the induction of general anaesthesia.

**END OF PAPER**