



The Hong Kong College of Anaesthesiologists

Intermediate Fellowship Examination

Written Paper in Physiology
Friday, 7 March 2003, 09:00 – 11:00

Answer **ALL** questions

1. What are the essential components of a normal diet? What metabolic changes occur during a period of starvation?
2. What determines the contractility of the left ventricle? Describe how this can be quantitatively assessed in man.
3. Draw a simple diagram to illustrate the emetic neural pathways. Describe effects of vomiting and list risk factors contributing to development of postoperative nausea and vomiting.
4. Define innate immunity and describe how they protect the body against infections.
5. What are the differences between anatomical, alveolar and physiological dead space? Describe how may each of these be measured, and the values you would expect in a normal person.
6. Describe the physiological responses of a normal subject who receives a rapid intravenous infusion of one litre of normal saline, and the mechanisms by which the saline is excreted.
7. Discuss the physiological mechanisms governing coronary blood flow in the normal heart.
8. Give an account of calcium metabolism in the body.
9. Describe the mechanisms by which arterial hydrogen ion concentration is controlled.
10. Explain how the PO_2 of venous blood is prevented from falling too low when man ascends to high altitude
11. Describe the principles of compatibility testing performed on donor and recipient blood samples prior to homologous (allogenic) red cell transfusion.
12. What is a thermometer? Discuss the principles, advantages and disadvantages of the different types of electrically-operated thermometers.

The End