



The Hong Kong College of Anaesthesiologists
Intermediate Fellowship Examination
Written Paper in Physiology
Friday, 10 February 2017, 09:00 - 11:00

The questions carry equal marks. Answer **ALL** of them. For questions with multiple parts, allocation of marks is indicated in the brackets.

1. With regard to calcium ion, outline its role
 - a) in the generation of action potential of pacemaker cells in the heart. (40%)
 - b) during contraction and relaxation in ventricular myocytes. (60%)
2. Describe the effects of resonance and damping on an invasive arterial blood pressure tracing.
3. Outline the changes in respiratory function in a patient with complete transection of the cervical spine at C6 level.
4. Outline the cardiovascular changes associated with ageing.
5. Describe the structure of the juxtaglomerular apparatus and explain the mechanism of tubuloglomerular feedback in the control of glomerular filtration.
6. Compare and contrast the respiratory mechanics and gas exchange functions of adults and term neonates.
7. Describe the physiological response to the acute loss of 1 litre of blood from an awake 70 kg adult.
8. Describe how the body handles metabolic acidosis.
9. Outline the factors that affect gastric motility.
10. Outline the coagulation response to injury of the vessel wall.
11. Write short notes on the physiology of cerebrospinal fluid.
12. Describe the physiological consequences of acute hypoglycaemia.

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