

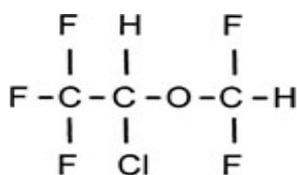


**The Hong Kong College of Anaesthesiologists**  
**Intermediate Fellowship Examination**  
**Written Paper in Pharmacology**

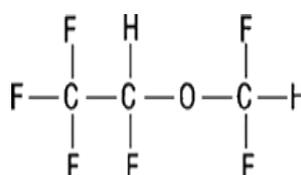
Friday, 11<sup>th</sup> February 2011, 14:00 - 16:00 h

The questions carry equal marks. Answer **ALL** questions.

1. Compare and contrast the potential cardiovascular effects of lignocaine, bupivacaine and ropivacaine. (do not discuss the potential cardiovascular effects of sympathetic / parasympathetic nervous system efferent block from neural blockade)
2. Outline pharmacokinetic factors that will affect the onset and offset times of opioids after intravenous administration. Give examples to illustrate these factors.
3. Describe the methods whereby a water-insoluble anaesthetic agent can be formulated to administer intravenously. Illustrate your answer with examples.
4. Define drug receptor. Describe the different ways that drugs interact with receptors to produce pharmacological responses. Give examples for each drug-receptor interaction.
5. Compare and contrast the physico-chemical properties, metabolism and interactions with soda lime of isoflurane and desflurane with reference to their chemical structure.



Isoflurane



Desflurane

6. Outline the pharmacological principles involved in the management of a patient with an overdose of amitriptyline (a tricyclic antidepressant).
7. Compare and contrast the pharmacological characteristics of gelofusine (a gelatin) and voluven (a hydroxyethyl starch).
8. Outline the pharmacology of unfractionated heparin and the low molecular weight heparins when used for the prevention of venous thrombembolism in the perioperative period.
9. Discuss the pharmacology of syntocinon, include in your answer the pharmacokinetic, pharmacodynamic and adverse effects of the drug.
10. What factors influence your choice of drugs for producing muscle relaxation during surgery?
11. You have invented a new method for measuring arterial oxygen saturation during anesthesia. Describe the statistical method(s) that could be used to assess the agreement between this new method and the traditional measurement of arterial oxygen saturation.
12. List the groups of drugs that are used for the treatment of diabetes mellitus. For each group of drugs, explain their mechanisms of action.