



# The Hong Kong College of Anaesthesiologists

## Intermediate Fellowship Examination

### Written Paper in Pharmacology

Friday, 6 February 2004, 14:00 - 16:00 h

Answer ALL questions

1. What is a receptor? How are receptors classified? Describe the different ways in which a drug interacts with its receptor to produce a response.
2. What do you understand by the following four terms:
  - (1) half life;
  - (2) context sensitive half life;
  - (3) clearance; and
  - (4) volume of distribution.Describe how these factors contribute to the design of continuous intravenous infusion regimes.
3. Discuss the pharmacology of paracetamol.
4. Describe the non-analgesic effects of pethidine.
5. By what pharmacological mechanisms can vasodilatation be produced during anesthesia? Give examples of drugs which act by each of the mechanisms that you describe.
6. What is the mechanism of action of local anesthetic agents? What factors affect the onset of action and duration of action of these drugs?
7. Discuss the factors that influence the speed at which inhaled anesthetics approach a steady state within the body.
8. Compare and contrast the mechanism of action of neostigmine and edrophonium.
9. Describe the clinical features and treatment of atropine overdose.
10. What is a normal (Gaussian) distribution? In a clinical trial in which you wish to compare the means of a measured variable in two groups, how could you determine whether the data are normally distributed? Discuss and give examples of methods that could be used to analyze the data if they are not normally distributed.
11. Outline the pharmacology of xenon which makes it a favorable inhalational anesthetic compared with the agents that are currently in clinical use.
12. Briefly describe the drugs that may be used to enhance clotting after major intraoperative bleeding.