

## The Hong Kong College of Anaesthesiologists Intermediate Fellowship Examination Written Paper in Pharmacology Friday, 5 February 2016, 14:00 - 16:00

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

- 1. What are the differences, in the content, between 1 L of PlasmaLyte A and 1 L of 0.9% normal saline? (30%) What are the potential advantages of infusing PlasmaLyte A instead of 0.9% normal saline in critically ill surgical patient? (70%)
- 2. Compare and contrast the effects of desflurane and propofol on the central nervous system.
- 3. Based on the underlying mechanisms, classify the side effects of amitriptyline. (50%) Discuss the potential interaction of amitriptyline with drugs commonly used in anaesthetic practice (50%).
- 4. List the drugs that are commonly used to treat asthma. (20%) Explain their potential side effects and drug interactions that are relevant to anaesthesia. (80%)
- 5. Write short notes on randomization in clinical trials. In your answer, include the aims of randomization, types of different randomization strategies and limitation(s) of randomization.
- 6. Discuss how EACH of the following factors influences the effects of local anaesthetic agent:
  (a) dosage of local anaesthetic agent. (33.3%)
  (b) addition of adrenaline (epinephrine). (33.3%)
  (c) pH adjustment. (33.3%)
- 7. Compare and contrast the pharmacology of clonidine and dexmedetomidine.
- 8. Explain why remifertanil should be administered by continuous infusion and not as intermittent boluses.
- 9. Explain, with examples, the characteristics of competitive antagonists and non-competitive antagonists. (50%) Explain how these antagonists affect the potency of a pure agonist using the dose-response curve. (50%)
- 10. Describe the clinical features and treatment of organophosphate poisoning.
- 11. Compare and contrast the mechanism of action, clinical utility, adverse effects and pharmacokinetics of neostigmine and sugammadex for reversal of neuromuscular block.
- 12. What are the potential adverse effects associated with the use of thiazide diuretics in patients presenting for anaesthesia?