The Hong Kong College of Anaesthesiologists

Intermediate Fellowship Examination

Written Paper in Pharmacology

22 February 2019 (Friday)

14:00 - 16:00 hours

Instructions:

a. There are three pre-labelled answer books. Please make sure you answer the questions in the respective answer book.
b. Write your candidate number on the cover of each answer book.
c. Use ink or ball-point pen.
d. Answer ALL questions. They are worth equal marks and you should spend approximately **ten minutes** for each question. For questions with multiple parts, allocation of marks is indicated in the brackets.

1. Describe the principles of computer-controlled infusion device to target and maintain a constant effect site concentration of propofol.

2. Using opioid as example, describe and illustrate with graphs what you understand by the terms "potency", "efficacy", "partial agonist", "competitive antagonist", and "therapeutic index".

3. Discuss the factors affecting duration of action of a local anaesthetic block to a major peripheral nerve.

4. Describe the pharmacology of midazolam.

5. List the drugs that affect uterine tone (50%), and outline the adverse effects of these agents (50%).

6. Discuss the advantages and disadvantages of using fentanyl for post-operative patient controlled analgesia.

7. Lists the pharmacokinetic and pharmacodynamic properties of atropine.

8. What is entonox (10%)? Discuss the advantages and disadvantages of using entonox for labour analgesia (90%).

9. Compare and contrast the mechanism of action, side effect and effectiveness of metoclopramide and ondansetron for preventing postoperative nausea and vomiting.

10. Describe, with examples, the different types of adverse drug reaction.

11. Explain the following terms: selection bias, confounding bias and measurement bias in study design (60%). How may statistical bias be reduced in the design of a scientific study (40%)?

12. Draw and explain the characteristics of a quantal dose-response graph of rocuronium (50%). Describe factors that may alter this graph clinically (50%).

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