The Hong Kong College of Anaesthesiologists
Intermediate Fellowship Examination
Written Paper in Pharmacology
Friday, 31 July 2015, 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. Define correlation and simple linear regression of two variables (50%) and explain the difference between the two terms. (50%)

2. Define Minimum Alveolar Concentration of inhalational anaesthetic agent. (40%) Explain with examples how this information can be used to guide the conduct of general anaesthesia? (60%)

3. Explain, with examples, the inter-individual variability in warfarin dosing requirements.

4. Describe the mechanisms of action and adverse effects for each of the following classes of drugs:
   a. sulphonylurea (30%)
   b. biguanide (30%)
   c. alpha-glucosidase inhibitor (30%)

   In your answer, rank the classes of drugs, from the highest to the lowest risk of hypoglycaemia if patients have unintentionally taken the drug while fasted for surgery. (10%)

5. Outline the factors determining the speed of onset of neuromuscular blocking agents. Give examples to illustrate your explanation.

6. Compare and contrast propofol with dexmedetomidine for maintenance of sedation with respect to the pharmacodynamics effects.

7. Classify antiemetic drugs. (40%) Give examples and describe the side effects for each class of drugs. (60%)

8. Describe the pharmacology and list the anaesthetic use of gabapentin.

9. Describe the pharmacology of phenoxybenzamine.

10. Compare and contrast the mechanisms of action, clinical indications, adverse effects and potential drug interactions of frusemide and mannitol.

11. What is stereoisomerism? (50%) Describe the effect of stereoisomerism and cardiotoxicity of bupivacaine and levobupivacaine. (50%)

12. Discuss the pharmacokinetic concepts of elimination half-time(50%), context sensitive half-time(50%)

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