**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 drug interactions, with examples, in terms of physicochemical (10%), pharmacokinetic (25%) and pharmacodynamic properties (65%).

2. Compare and contrast the pharmacology of aspirin and parecoxib.

3. What are the causes of a prolonged paralysis after suxamethonium administration (90%)? How is it treated (10%)?

4. Define volume of distribution and how can it be calculated using one compartment model. (20%) Describe how volume of distribution can be affected by:
   a) drug factors (30%)
   b) pregnancy (50%)

5. Describe the mechanism (40%), clinical presentations (40%) and treatment of Paracetamol poisoning (20%).

6. Describe the drugs that are used for reversal of non-depolarising muscle relaxants. In your answer, include their mechanisms of action (60%) and side effects (40%).

7. What are the toxic effects of local anaesthetics (provide specific examples) (50%)? How may the risks be reduced (10%)? How is toxicity treated (40%)?

8. How does the pharmacokinetics of intrathecal morphine influence its analgesic activity (40%)? What are the risks of intrathecal morphine for postoperative analgesia (60%)?

9. Describe the drugs, in terms of their mechanism of action and potential side effects, that are used to treat bronchospasm intraoperatively.

10. Compare and contrast the pharmacology of intravenous nitroglycerine and sodium nitroprusside?

11. Describe the factors that influence the hypnotic effects of an intravenous bolus dose of propofol.

12. Describe the adverse effects resulting from toxic products produced during administration of inhalational anaesthetics.

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