

**DIPLOMA OF FELLOW OF THE ROYAL COLLEGE OF ANAESTHETISTS  
FINAL EXAMINATION**

**Tuesday 8<sup>th</sup> March 2016  
9:30 am to 12:30 pm**

**Candidates MUST answer all 12 questions.** Candidates will fail the written section if one or more questions on the SAQ paper are not attempted.

All 12 questions carry equal marks, although their pass marks may vary. Questions are printed in the appropriate coloured book:

1 & 2 in Book A (Blue)	5 & 6 in Book C (Green)	9 & 10 in Book E (Orange)
3 & 4 in Book B (Pink)	7 & 8 in Book D (Yellow)	11 & 12 in Book F (Grey)

One question will be printed on the first page and the second question will be printed half-way through the book. Candidates must write their answer underneath the question in each of their six books. Questions answered in the wrong book will not normally be marked (and the candidate will fail the written section). Please write clearly e.g. a, b, c etc. for which section of the question you are answering.

Where examiners have indicated the way marks are allocated, candidates are advised to spend their time accordingly.

**Question 1 (Blue Book)**

- a) List and briefly state the reasons for the cardiovascular (7 marks) and respiratory (4 marks) effects of laparoscopy in the head up position for a Nissen fundoplication (anti-reflux procedure).
- b) How may these effects be minimised? (9 marks)

**Question 2 (Blue Book)**

A 45-year-old man has a major haemorrhage following significant trauma and is admitted to your emergency department. He does not have a head injury.

- a) Give one definition of major haemorrhage. (1 mark)
- b) What are the principles of management of major haemorrhage in this patient? (11 marks)
- c) What complications might follow a massive blood transfusion? (8 marks)

**Question 3 (Pink Book)**

- a) What are the site of action and the intra and extracellular mechanisms of analgesic effect within the spinal cord following the administration of intrathecal (IT) opioids? (6 marks)
- b) List the principal side effects of IT opioids. (7 marks)
- c) What factors may increase the risk of postoperative respiratory depression following administration of IT opioids? (7 marks)

**Question 4 (Pink Book)**

A 56-year-old man is listed for carotid endarterectomy 10 days after suffering a cerebrovascular accident.

- a) What are the advantages (4 marks) and disadvantages (4 marks) of performing the procedure under regional anaesthesia?
- b) What local or regional anaesthetic techniques may be used? (3 marks)
- c) How can his risk of perioperative cerebrovascular accident be minimised? (6 marks)
- d) Following this procedure what other specific postoperative complications may occur? (3 marks)

**Question 5 (Green Book)**

- a) List 3 common causes of acute pancreatitis in the United Kingdom. (3 marks)
- b) How is acute pancreatitis diagnosed? (3 marks)
- c) Describe the classification of severity of acute pancreatitis. (3 marks)
- d) What are the specific principles of managing severe acute pancreatitis in a critical care environment? (11 marks)

**Question 6 (Green Book)**

A 54-year-old male with acromegaly presents for a trans-sphenoidal hypophysectomy.

- a) What is acromegaly? (2 marks)
- b) List the clinical features of acromegaly which are of relevance to the anaesthetist. (8 marks)
- c) What other clinical presentations of a pituitary adenoma may be encountered? (2 marks)
- d) What specific considerations, including surgical factors, may influence the conduct of anaesthesia in this patient? (8 marks)

### Question 7 (Yellow Book)

- What factors may contribute to difficulties encountered when securing the airway under general anaesthesia in the pregnant patient? (9 marks)
- What measures can be taken to reduce airway related morbidity and mortality associated with general anaesthesia in a pregnant woman? (8 marks)
- What are the recommendations in the 4<sup>th</sup> National Audit Project (Major Complications of Airway Management in the UK, NAP 4) regarding airway management in the pregnant woman? (3 marks)

### Question 8 (Yellow Book)

A 70-year-old woman with aortic stenosis presents for an open aortic valve replacement (AVR).

- What is the pathophysiology of worsening aortic stenosis? (8 marks)
- Which specific cardiac investigations may be used in assessing the severity of this woman's disease? (3 marks)
- Give values for the peak aortic flow velocity, mean pressure gradient and valve area that would indicate that this woman has severe aortic stenosis. (3 marks)
- What would be your haemodynamic goals for the perioperative management of this patient? (6 marks)

### Question 9 (Orange Book)

You have anaesthetised a 5-year-old boy for manipulation of a forearm fracture. During the operation you notice that he has multiple bruises on his upper arms and body that you think may indicate child abuse.

- Which other types of physical injury should raise concerns of abuse in a child of this age? (6 marks)
- What timely actions must be taken as a result of your concerns? (7 marks)
- List parental factors (5 marks) and features of a child's past medical history (2 marks) that are known to increase the risk of child abuse.

### Question 10 (Orange Book)

- What physiological factors determine the rate of fall in arterial oxygen saturation in an apnoeic patient (3 marks), and which patient groups are most likely to show a rapid fall? (4 marks)
- How may oxygenation, prior to intubation, be optimised during a rapid sequence induction (8 marks), and how can its progress be measured? (1 mark)
- What are the possible respiratory complications of prolonged delivery of 100% oxygen? (4 marks)

### Question 11 (Grey Book)

A 20-year-old man is brought to the emergency department having been pulled from a river where he got into difficulties whilst swimming.

- Describe the relevant history (5 marks) and investigations (8 marks) for this patient who has suffered near-drowning.
- He has a Glasgow Coma Score of 13 but is found to have an arterial oxygen partial pressure of 6kPa (45mmHg) breathing 4L of oxygen via a variable performance mask. Outline your initial management of this patient. (7 marks)

### Question 12 (Grey Book)

- What are the factors associated with an increased risk of accidental awareness under general anaesthesia (AAGA)? (14 marks)
- What monitoring devices can be used to help reduce the incidence of AAGA? (2 marks)
- What are the possible consequences to the patient of an episode of AAGA? (4 marks)