

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

Tuesday 10th March 2015
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) Outline the mechanisms of spontaneous recovery from neuromuscular blockade following the administration of rocuronium. (2 marks)
- b) Which classes of drugs can be used to antagonise the action of rocuronium (2 marks) and how do they work? (5 marks)
- c) What are the advantages and disadvantages of these antagonist drugs? (11 marks)

Question 2 (Blue Book)

A 5 year-old boy with Autistic Spectrum Disorder (ASD) is listed for dental extractions as a day case.

- a) What constitutes ASD (1 mark) and what are the key clinical features? (6 marks)
- b) List the important issues when providing anaesthesia for dental extractions in children. (6 marks)
- c) Give the specific problems of providing anaesthesia for children with ASD and outline possible solutions. (7 marks)

Question 3 (Pink Book)

- a) List the factors that may have contributed to an increase in the prevalence of asthma in developed countries in the last 20 years. (5 marks)
- b) What are the possible causes of acute bronchospasm during general anaesthesia in a patient with mild asthma? (5 marks)
- c) Outline the immediate management of acute severe bronchospasm in an intubated patient during general anaesthesia. (10 marks)

Question 4 (Pink Book)

- a) Define critical illness weakness (CIW, 1 mark) and list the types that may occur. (3 marks)
- b) List the risk factors for the development of weakness on the ICU. (6 marks)
- c) What are the clinical features of CIW? (4 marks)
- d) How may nerve conduction studies determine the type of CIW? (4 marks)
- e) What are the options for the management of CIW? (2 marks)

Question 5 (Green Book)

A 75 year-old man is having a transurethral resection of the prostate (TURP) under spinal anaesthesia.

- a) Which clinical features would make you suspect the patient has TURP syndrome? (6 marks)
- b) List the intraoperative factors that may increase the risk of developing TURP syndrome. (7 marks)
- c) How would you manage suspected TURP syndrome? (7 marks)

Question 6 (Green Book)

You are asked to review a woman in the anaesthetic antenatal clinic. She is 30 weeks pregnant and a Jehovah's Witness. She requires an elective caesarean section at 39 weeks due to a low-lying placenta and a fibroid uterus.

- What specific issues should be discussed with this patient based on the history outlined above? (10 marks)
- Give the advantages and disadvantages of using intra-operative cell salvage during caesarean section? (10 marks)

Question 7 (Yellow Book)

An 80 year-old patient is to undergo 2nd stage revision of a total hip arthroplasty for treated deep joint infection.

- Which specific pre-operative considerations are relevant to this patient? (5 marks)
- Describe the important features of the intra-operative anaesthetic management of this case. (7 marks)
- List the patient risk factors for bone cement implantation syndrome (4 marks) and the steps that can be taken to prevent or minimise its effect? (4 marks)

Question 8 (Yellow Book)

A 67 year-old patient is to undergo coronary artery surgery on cardiopulmonary bypass (CPB).

- What dose of heparin is used to achieve full anticoagulation for CPB and how is it given? (2 marks)
- Which laboratory and "point-of-care" tests determine the effectiveness of heparin anticoagulation in CPB patients? Give the advantages and/or disadvantages of each test. (10 marks)
- What are the causes of inadequate anticoagulation in a patient whom it is believed has already received heparin? (5 marks)
- Describe the possible adverse reactions to protamine. (3 marks)

Question 9 (Orange Book)

You are called to see a 25 year-old man who suffered a traumatic below knee amputation 24 hours ago. He is using Patient Controlled Analgesia (PCA) with intravenous morphine and was comfortable until two hours ago when he started to experience severe pain.

- Why might his pain control have become inadequate? (5 marks)
- How would you re-establish optimal pain control? (6 marks)
- Which factors would suggest that this patient has phantom limb pain (PLP)? (3 marks)
- What further pharmacological options are available for managing PLP? (6 marks)

Question 10 (Orange Book)

A patient with end-stage chronic liver disease is listed for elective surgery under general anaesthesia.

- List the common causes of chronic liver disease. (3 marks)
- Explain which systemic effects of chronic liver disease are of importance to the anaesthetist and why. (9 marks)
- Outline the Child-Pugh scoring system and explain how this may be used to stratify mortality risk for this patient. (8 marks)

Question 11 (Grey Book)

A 54 year-old patient is admitted to the Emergency Department following a traumatic brain injury. A CT scan reveals only cerebral oedema.

- What is secondary brain injury and when is it likely to occur? (2 marks)
- Outline the main physiological and cellular changes associated with secondary brain injury. (7 marks)
- How can secondary brain injury be minimised in this patient? (11 marks)

Question 12 (Grey Book)

A 55 year-old patient is due to have electro-convulsive therapy (ECT) for severe depression.

- What are the specific pre-operative considerations for ECT? (5 marks)
- What are the physiological effects of ECT (7 marks) and which physical injuries may occur during treatment? (3 marks)
- The patient is taking lithium and fluoxetine. What are the anaesthetic implications of these agents during ECT? (5 marks)