

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

**Tuesday 12 March 2019
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)

- List three of the commonest causes of end stage renal failure (ESRF) in the United Kingdom. (3 marks)
- What complications of ESRF are of importance to the anaesthetist? (6 marks)
- What acute physiological disturbances may be seen in a patient who has just had haemodialysis? (3 marks)
- What are the key practical considerations when providing general anaesthesia for a patient with ESRF on haemodialysis? (8 marks)

Question 2 (Blue Book)

You are asked to assess a 15kg 4-year-old child who is scheduled for a strabismus (squint) correction as a day case procedure.

- List the anaesthetic considerations of this case, with regards to: age of the patient (4 marks), day case surgery (3 marks) and type of surgery. (4 marks)
- During the operation, the patient suddenly develops a profound bradycardia. What is your immediate management of this situation? (2 marks)
- What strategies would you employ to reduce postoperative nausea and vomiting (4 marks) and postoperative pain? (3 marks)

Question 3 (Pink Book)

- What airway risk factors may indicate a difficult extubation? (4 marks)
- What factors (patient and other) can you optimise prior to extubation? (5 marks)
- What strategies could you employ to manage a high risk extubation? (5 marks)
- Outline the steps you would take to exchange an endotracheal tube to a supraglottic airway device (SAD) to aid extubation. (6 marks)

Question 4 (Pink Book)

A 28-year-old woman presents for an acute appendicectomy under general anaesthesia - she is 22 weeks pregnant.

- List the risks to the foetus during anaesthesia in this situation. (5 marks)
- How can the risks to the foetus be minimised? (10 marks)
- What additional preoperative and intraoperative steps would you take to ensure foetal safety if she is 27 weeks pregnant instead? (5 marks)

PTO

Question 5 (Green Book)

- What is the daily energy requirement of a normal healthy 70kg man? (1 mark) What are the recommended daily proportions of carbohydrate, fat and protein? (3 marks)
- What is refeeding syndrome? (2 marks)
- What are the three major electrolyte abnormalities seen in refeeding syndrome (3 marks) and what is the commonest nutritional deficiency? (1 mark)
- Which patients are at particular risk of refeeding syndrome (6 marks), and how should their nutritional requirements be managed? (4 marks)

Question 6 (Green Book)

A 77-year-old man is scheduled for laser surgery to a laryngeal tumour.

- What does the term LASER stand for (1 mark), and what different types of laser can be used for surgery? (3 marks)
- How can the risk of an airway fire be minimised? (5 marks)
- What measures would you take to protect the staff when a laser is in use? (6 marks)
- What anaesthetic techniques can be used to allow a tubeless field for laryngeal surgery? (5 marks)

Question 7 (Yellow Book)

- List the effects of cigarette smoking on the cardiovascular system and on oxygen delivery (6 marks), outlining the pathophysiological mechanisms for each. (6 marks)
- Give the respiratory system effects of cigarette smoking, other than those you have outlined above, that are relevant to general anaesthesia. (5 marks)
- What advice would you give a smoker the day before a scheduled procedure under general anaesthesia (1 mark) and why? (2 marks)

Question 8 (Yellow Book)

- How could a patient with dilated cardiomyopathy (DCM) present? (3 marks)
- What are the pharmacological (3 marks) and non-pharmacological management options for a patient with DCM? (2 marks)
- List the predictors of poor outcome in patients with DCM undergoing surgery? (2 marks)
- What are the haemodynamic goals when anaesthetising patients with DCM? (4 marks)
- What measures would you take to achieve these haemodynamic goals during anaesthesia? (6 marks)

Question 9 (Orange Book)

You are called to see a patient who has had a below knee amputation 24 hours ago. Despite using a patient controlled analgesia (PCA) pump with intravenous morphine he is still in pain.

- Why might his pain control have become inadequate? (6 marks)
- How would you re-establish optimal pain control? (6 marks)
- What features could indicate that this patient is suffering from post-amputation pain syndrome (phantom limb pain)? (3 marks)
- What further pharmacological options are available for managing post-amputation pain syndrome? (5 marks)

Question 10 (Orange Book)

- List the four commonest triggers for perioperative anaphylaxis according to The Royal College of Anaesthetists' 6th National Audit Project (NAP6). (4 marks)
- What is the estimated incidence of perioperative anaphylaxis? (1 mark)
- Outline the pathophysiological process of anaphylaxis. (5 marks)
- Describe your management of intraoperative anaphylaxis in an adult patient. (8 marks)
- What should be done after successful treatment of anaphylaxis? (2 marks)

Question 11 (Grey Book)

- What is prehabilitation in perioperative medicine? (1 mark)
- What are the outcome benefits of a prehabilitation programme? (3 marks)
- Which specific issues are addressed as part of medical optimisation in a prehabilitation programme? (6 marks)
- How will a prehabilitation exercise programme improve a patient's cardiorespiratory physiology? (4 marks)
- What are the benefits of carbohydrate preloading and nutritional optimisation? (4 marks)
- What psychologically supportive interventions may be used in prehabilitation? (2 marks)

Question 12 (Grey Book)

- What imaging modalities are recommended by The National Institute for Health and Care Excellence (NICE) in acute stroke? (1 mark)
- What specific treatments can be considered for acute thrombotic ischaemic strokes? (4 marks)
- In these patients what is the potential consequence of severe hypertension? (1 mark) What level of hypertension (systolic and diastolic) is regarded as severe after ischaemic stroke? (2 marks)
- A patient has had a large hemispheric infarction following a stroke. Outline your management of this patient following admission to critical care. (12 marks)