DIPLOMA OF FELLOW OF THE ROYAL COLLEGE OF ANAESTHETISTS
FINAL EXAMINATION

Tuesday 11th September 2018
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)
An otherwise healthy, ASA 1, 32 year-old man who was involved in a road traffic accident has suffered a penetrating eye injury.
a) What factors determine the intraocular pressure in a healthy eye? (3 marks)
b) What key points would you need to know when assessing this patient preoperatively? (5 marks)
c) The patient requires urgent surgery. Discuss your specific intraoperative management. (4 marks)
d) What contraindications are there to performing a regional block in elective ophthalmic surgery? (5 marks)
e) What different types of regional block are suitable for ophthalmic surgery? (3 marks)

Question 2 (Blue Book)
a) List the postoperative pulmonary complications that may occur following non-cardiothoracic surgery. (3 marks)
b) What are the patient related (4 marks) and surgery related (2 marks) risk factors for postoperative pulmonary complications following non-cardiothoracic surgery?
c) How might anaesthesia contribute to postoperative pulmonary complications? (4 marks)
d) What perioperative strategies may you adopt to reduce postoperative pulmonary complications? (7 marks)

Question 3 (Pink Book)
A 68-year-old man is referred to the neuro-intensive care unit with suspected Guillain-Barré syndrome.
a) What is Guillain-Barré syndrome and what are its causes? (3 marks)
b) List the clinical features (6 marks) and investigations/findings (2 marks) that can be used to aid the diagnosis.
c) What are the problems associated with anaesthetising a patient with Guillain-Barré syndrome? (7 marks)
d) What specific treatments are available? (2 marks)

Question 4 (Pink Book)
A patient presents for a total thyroidectomy.
a) Which investigations are specifically indicated in the preoperative assessment and why are they done? (5 marks)
b) What factors in a euthyroid patient must the anaesthetist consider during the induction, maintenance and extubation phases of a total thyroidectomy? (11 marks).
c) What are the important postoperative complications following this surgery? (4 marks)

Question 5 (Green Book)
a) How can the risks associated with lung resection be quantified preoperatively? (6 marks)
b) What factors can lead to the development of high airway pressures during one lung ventilation (OLV)? (6 marks)
c) How would you manage the development of hypoxaemia during OLV? (8 marks)

Question 6 (Green Book)
A recent meta-analysis of Mallampati scoring of the airway found that it had a sensitivity of 60% and a specificity of 70%.
a) Briefly define the terms systematic review (1 mark) and meta-analysis. (1 mark)
b) Explain what is meant by sensitivity (2 marks) and specificity (2 marks) of Mallampati scoring of the airway in this meta-analysis.
c) According to this meta-analysis what is the positive predictive value of Mallampati scoring of the airway and how is it calculated? (2 marks)
d) Rank the levels of scientific proof used to grade medical evidence. (4 marks)
e) List 8 factors that help to ensure a high-quality conclusion from a meta-analysis. (8 marks)

Question 7 (Yellow Book)
You are asked to transfer an intubated intensive care patient for a magnetic resonance imaging (MRI) scan.
a) What is meant by the term "magnetic resonance conditional" in relation to equipment used in the MRI scanner room? (1 mark)
b) What precautions should be taken to prevent burns caused by monitoring equipment used in an MRI scanner? (6 marks)
c) Describe other precautions you should take while this patient is having an MRI scan. (8 marks)
d) What are the relative/absolute contraindications to an MRI scan for any patient? (5 marks)

Question 8 (Yellow Book)
A 45-year-old patient is due to have an elective open hemicolectomy for diverticular disease. He has chronic abdominal pain for which he has been using fentanyl patches (100 mcg/hour) for the last 10 months.
a) How would you manage his postoperative pain? (10 marks)
b) What are the additional perioperative implications if the patient is on high dose sublingual buprenorphine instead of fentanyl patches? (3 marks)
c) What doses of oral tramadol, oral codeine and oral oxycodone are equivalent to 10mg of oral morphine? (3 marks)
d) What other precautions should be taken if the patient has a spinal cord stimulator fitted? (4 marks)

Question 9 (Orange Book)
a) What is meant by the term ventilator associated pneumonia? (3 marks)
b) List the factors that increase the risk of the development of ventilator associated pneumonia? (10 marks)
c) What measures may reduce the risk of development of ventilator associated pneumonia? (7 marks)

Question 10 (Orange Book)
A 52-year-old woman is to undergo a laparotomy (open procedure) for ovarian malignancy, having completed 3 cycles of primary chemotherapy. She has a BMI of 23 and has massive ascites.
What specific features of this case will affect your approach to the patient with regard to:
a) Preoperative assessment and optimisation? (10 marks)
b) Intraoperative management? (10 marks)

Question 11 (Grey Book)
A primiparous patient with a BMI of 55 kg/m^2 presents in the high risk anaesthetic antenatal assessment clinic at 34 weeks gestation. She is hoping to have a normal delivery.
a) Which specific points do you need to elicit from the anaesthetic history and examination? (5 marks)
b) What are the specific obstetric risks associated with a raised BMI in pregnancy? (5 marks)
c) What do you need to communicate to the patient?(10 marks)

Question 12 (Grey Book)
You are called to the Emergency Department to see a 2-year-old child who presents with a 4-hour history of high temperature and drowsiness. On examination there is prolonged capillary refill time and a non-blanching rash.
A presumptive diagnosis of meningococcal septicaemia is made.
a) What are the normal weight and capillary refill time for a child of this age? (2 marks). Describe how you would perform an assessment of capillary refill time. (2 marks)
b) List appropriate resuscitation goals for this child (2 marks) and outline the management in the first 15 minutes after presentation. (7 marks)
c) After 15 minutes, the child remains shocked and is unresponsive to fluid. What are the most likely pathophysiological derangements in this child's circulation? (2 marks)
d) What are the important further treatment options? (5 marks)