

Report on the Constructed Response Question / Short Answer Question Paper – September 2019

This report has been compiled by the Chairs of the Constructed Response Question group to provide information for candidates and trainers about how the Constructed Response Questions (CRQs) and Short Answer Questions (SAQs) are written, how the paper is put together, how pass marks are set and how marking is standardised. It is partly generic and partly specific to the September 2019 paper. There is a section at the end with comments about the individual questions which we hope you will find useful.

The CRQ/SAQ paper examines a candidate's knowledge of the basic and intermediate sections of the training curriculum, as specified by the Royal College of Anaesthetists. Since the time available to answer each question is limited, the test also assesses the ability to make judgments and to prioritise information within the answer rather than just factual recall.

The questions for each written paper reflect the breadth of knowledge required for intermediate training and are generally a mix of new and revised questions. Questions currently in the database are updated or modified in light of new knowledge, current national practice or recommendations from relevant governing authorities.

Structure of the written paper

This paper consists of 12 questions to be answered in 3 hours, 6 based on topics from each of the 6 mandatory units of training and 6 from the general duties, optional and advanced science modules. All the questions are mapped to a specific section of the basic or intermediate curriculum. A maximum of one question is based on the optional modules.

- **Mandatory units:** anaesthetic practice relevant to neurosurgery, neuroradiology and neurocritical care, cardiothoracic surgery, intensive care medicine, obstetrics, paediatrics and pain medicine.
- **General duties:** airway management, day surgery, critical incidents, general/urology/gynaecology surgery, ENT/maxillofacial/dental surgery, management of respiratory and cardiac arrest, non-theatre duties, orthopaedic surgery, regional anaesthesia, sedation practice, transfer medicine, trauma and stabilization practice.
- **Optional modules:** anaesthetic practice relevant to ophthalmic surgery, plastics & burns surgery, vascular surgery
- **Advanced sciences:** anatomy, applied clinical pharmacology, applied physiology/biochemistry, physics/clinical measurement and statistical basis of clinical trial management.

The September 2019 written paper saw the introduction of CRQs and was a hybrid paper comprising 6 CRQs and 6 SAQs.

The written paper contains questions with varying levels of difficulty:

- 2 questions judged to be difficult (pass mark 10-11/20)
- 8 questions judged to be moderately difficult (pass mark 12-13/20)
- 2 questions judged to be easy (pass mark 14/20 or more)

The level of difficulty and the pass mark are finalised using modified Angoff referencing, which takes place during the paper checking and standard setting meetings of the Final examiners.

Angoff referencing uses the experience of the examiners to set a pass mark for each question. All questions must be attempted but candidates do not have to pass all the questions in order to pass the paper.

To facilitate an objective and reproducible marking process, a model answer template is provided for each question. Key facts in this template are bullet pointed and assigned marks. The number of marks available for each section of the answer is shown in the question. All questions are subjected to an exhaustive editing and peer review process before use in an examination. This is explained below.

Quality Control for the September 2019 CRQ/SAQ paper

Exam week 17th-21st June 2019 – Paper Checking Day

- The Final examiners convened at the College during exam week and were divided into six teams of 8-10 people, each chaired by a member of the CRQ group. Each team was given two questions and their associated model answer templates to check for factual accuracy, clarity of language and ease of understanding. Any necessary amendments to the questions were made and they were assigned a provisional pass mark. The same team subsequently marked the questions they had checked. This helps to ensure that a consistent standard is maintained throughout the CRQ/SAQ paper process.

Wednesday 18th September 2019 – Standard Setting Day (SSD)

- The examiners again convened in their teams at the College and this time marked 4 anonymised CRQ/SAQ answer booklets (without candidate or College reference numbers) containing the 2 questions reviewed on paper checking day. College officials chose the four sets of booklets on the basis of MCQ scores, to represent the spectrum of ability within the candidate cohort. The MCQ results for the anonymous candidates were not given to the examiners. Subsequent discussion within each team ensured that all scripts received marks as allowed by the answer template, and that each examiner had applied a consistent standard across all four candidates. At the end of SSD a finalised Angoff-referenced pass mark was confirmed for each question.

The candidate answer booklets for each set of two questions were then divided amongst the team and taken away for marking. This process results in each of a candidate's 6 answer booklets (2 questions) being marked by a different examiner and helps to eliminate any risk of bias that could arise from a single examiner marking all twelve questions. The Examination Department staff scrutinise the submitted marks and clarify any ambiguities within the marked scripts before individual scores are ratified.

Results – Friday 5th April 2019

The overall pass rate for this paper was 80%

This compares with recent papers:

- March 2019 74.73%
- September 2019 58.4%
- March 2018 72.2%
- September 2018 68.81%
- March 2017 50.68%

Analysis of Results

The pass rate for this exam was higher than in the previous sitting.

Candidates continue to disadvantage themselves in a number of ways:

- Failure to answer the question asked

It is very important, even when pressed for time, to read the question carefully and answer what is asked. This was a constant theme throughout the September paper. For example, although one question asked for the reasons why certain drugs may be stopped, many candidates instead described the action of each drug.

- Weak knowledge of clinical sciences

Candidates should be reminded that clinical science forms an important part of the intermediate syllabus and is an area of the exam that is often underestimated. As in previous exams, knowledge of clinical sciences applied to anaesthesia was poor when compared to clinical knowledge. In the September paper, knowledge of pharmacology was particularly deficient. In two questions in particular, very few candidates were able to demonstrate knowledge about the pharmacological action of either intra-thecal opioids or oral hypoglycemic drugs.

- A lack acknowledgement of the weighting of marks

Candidates should make sure they note how many marks are allocated to each part of the question. The CRQs are looking for short, specific answers and writing as much as possible will not guarantee marks. Similarly, writing extensively on the low scoring sections of the question to the detriment of other sections, may reduce your overall score.

- Illegible handwriting

Examiners take great care to extract answers from a candidate's script but only material that can be read will achieve a mark. Candidates are encouraged to set out their answers in a bullet point or table format where possible. This aids both legibility and time management. It is also a good idea to practice writing for 3 hours as part of your exam preparation as this is not something most people are used to.

Results for Individual Questions

Question 1: CRQ Aortic stenosis

Pass rate 66.7%

Aortic stenosis is a common condition and its pathophysiology and management should be known to candidates sitting this exam. Candidates continue to underestimate the importance of basic sciences and how they underpin anaesthesia. This was reflected in part (c) of this question. Candidates were unable to discuss in any detail the changes that occur in the left ventricle in patients with aortic stenosis.

Question 2: SAQ Intrathecal opioids

Pass rate 57.3%

This question had been used previously and this was reflected by an improvement in the pass rate. Candidates scored well in sections (a) and (c) but the mechanism of action of intrathecal opioids was answered poorly. Pain management requires a knowledge of advanced pharmacology and this is an area of the curriculum that is consistently neglected by candidates.

Question 3: CRQ Malignant hyperpyrexia

Pass rate 80.3%

The question was answered well, with one of the highest pass rates. Malignant hyperpyrexia, although uncommon is a potentially life-threatening condition. It is therefore reassuring to see that candidates had a detailed appreciation of how to monitor and manage this condition.

Question 4: SAQ Carotid endarterectomy

Pass rate 87.7%

In this question, weak candidates performed poorly in part (c) by answering in general terms and failing to give specific reasons why there may be cardiovascular instability during this operation.

Question 5: CRQ Tracheostomy

Pass rate 47.7%

The pass rate for this question was the lowest overall for this paper. It highlighted the fact that candidates have not adapted the way they answer questions in the new CRQ format. The CRQs are designed to elicit specific information and usually a short 1 – 3 word answer is required. The first three sections were answered as if they were SAQs, with candidates producing mini essays and failing to give specific details.

In the other sections of this question, it was clear from the answers given that candidates had not adequately read the questions. For example, candidates failed to appreciate that section (d) related to the assessment of patency of the tracheostomy, section (e) related to the immediate management of a blocked tracheostomy and the last section related to management of worsening hypoxia. The answers to sections (d), (e) and (f) were muddled, with candidates repeating their answers in multiple sections.

Tracheostomy care has been highlighted in numerous patient safety bulletins and therefore candidates should know this in more detail than was demonstrated in the September paper.

Question 6: SAQ Complications of diabetes and oral hypoglycaemic drugs

Pass rate 71.5%

This question had been used previously and this was reflected in the improved pass rate. Knowledge of the complications of diabetes and the features of autonomic involvement was well answered and probably reflects that we see many diabetic patients in our clinical practice. Marks were lost in section (c) as very few candidates were aware of the AAGBI guidelines on blood glucose monitoring. The last part of the question was poorly answered. Candidates did not read the question, listing drugs as opposed to giving the classes of oral hypoglycaemic drugs.

Question 7: CRQ Paediatric laryngospasm

Pass rate 92.3%

This is an important topic and was well answered. The pass rate was the highest on the paper. It is reassuring that candidates have sound knowledge of the management of laryngospasm.

Question 8: SAQ Cardioplegia

Pass rate 71.2%

The examiners were of the opinion that this question proved straightforward to candidates who had rotated through a cardiac module, with weaker candidates lacking sufficient knowledge or clinical experience of cardiac anaesthesia.

Question 9: CRQ Myasthenia Gravis

Pass rate 54.9%

The knowledge component of this question was answered well. However, the more clinical aspects of this question, such as section (f), were answered poorly.

Question 10: SAQ Amniotic fluid embolism

Pass rate 51.7%

Many candidates did not read this question carefully. Another common problem was an inability to differentiate between obstetric and non-obstetric causes of amniotic fluid embolism.

Question 11: CRQ Peri-operative anaemia and blood loss

Pass rate 55.7%

This question is very relevant to anaesthetic practice and yet performed surprisingly poorly. In general the answers given were not specific to the scenario. Candidates failed to comment on the significance of one litre of blood loss as compared to a patient's total blood volume. Instead, candidates gave vague statements on the effects of blood loss, which did not answer the question.

Question 12: SAQ Wrong-sided block

Pass rate 56.5%

This question had one of the highest correlations with overall performance i.e. candidates who did well in this question performed well in the written paper overall. This question had been used previously and weaker candidates showed similar failings. Candidates did not have adequate knowledge of the factors contributing to the performance of a wrong side block, such as distraction or the site mark being covered up. Drug-related, 'never' events are specific to certain medications and many candidates answered in far too general terms.

Summary

The pass rate of this written paper was the highest for a number of sittings. We congratulate the successful candidates on the standard and breadth of their knowledge.

Candidates did less well in mandatory units of training and applied clinical science. This is a trend we have seen previously. We would remind candidates that a certain level of clinical experience is needed to pass the Final FRCA. It is aimed at an anaesthetist with roughly 18 months' experience at specialist registrar level. We would encourage candidates to consider

this before attempting the exam, so as to maximise their chances of passing at the first attempt.

This is the last time candidates will see SAQs in this paper, with the next exam in March 2020 comprising 12 CRQs only. Candidates will need to adapt their style of response to the new CRQ format, which is looking for specific answers only. The approach of writing as much as possible in the space provided will not suffice and will not guarantee marks. Starting with the March 2020 exam, only the first distinct answer per line will be awarded a mark. The candidate instructions at the beginning of each booklet will be changed to reflect this.

Finally, the conduct of the written paper would be impossible without the hard work of the Final FRCA examiners and of the Examinations Department staff and we are extremely grateful for their continued and enduring support.

Dr Arun Krishnamurthy & Dr Gary Lear
Chairs, Constructed Response Question Group
October 2019