

Report on the Constructed Response Question Paper – March 2020

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) 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 March 2020 paper. There is a section at the end with comments about the individual questions which we hope you will find useful.

The CRQ paper examines a candidate's knowledge of the basic and intermediate sections of the training curriculum as specified by the Royal College of Anaesthetists. It is partly factual recall but also tests judgment, and the ability to prioritise information within the answer.

The questions for each written paper reflect the breadth of knowledge required for intermediate training.

Structure of the CRQ paper

The March 2020 CRQ paper comprised 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. 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 anesthesia, 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 CRQ paper is written to contain questions with varying levels of difficulty:

- 2 questions adjudged to be difficult
- 8 questions adjudged to be moderately difficult
- 2 questions adjudged to be easy

The level of difficulty and the pass mark are finalised using modified Angoff referencing, which takes place during the Paper setting 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 to pass the paper.

All the CRQ questions are mapped to a specific section of the basic or intermediate curriculum. To facilitate an objective and reproducible marking process, a model answer template is provided for each question. 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 March 2020 CRQ

Exam week 2-6 December 2019 – Paper Checking Day

- The Final examiners convened at the College for paper checking during the Final SOE exam week. Examiners 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. The teams made any necessary amendments and assigned a provisional pass mark for each question. The same team subsequently marked the questions they had checked. This helps to ensure that a consistent standard is maintained throughout the CRQ paper process.

Wednesday 18 March 2020 – Standard Setting Day (SSD)

- Due to the Coronavirus pandemic the meetings were conducted via Skype. The examiners convened in their teams and marked 6 anonymised answer booklets (without candidate or College reference numbers) containing the 2 questions they had reviewed on paper checking day. The examination department chose the 6 sets of booklets based on the 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. Discussion within each team ensured that all scripts were awarded the correct marks as allowed by the answer template, and that each examiner applied a consistent standard across all six 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 divided amongst the team and marked. This process results in all 6 answer booklets per candidate being marked by a different examiner. This reduces the risk of bias that could arise with a single examiner marking all twelve questions. The examination department check the submitted marks and clarify any ambiguities within the marked scripts before individual scores are ratified.

Results – Friday 22 May 2020

The overall pass rate for this paper was 83%, which compares with some recent SAQ papers:

- September 2019 80%
- March 2019 74.73%
- September 2019 58.4%
- March 2018 72.2%
- September 2017 68.81%

Analysis of Results

The pass rate for this exam was higher than in the previous sitting, which is reassuring given that this was the first full CRQ paper. This should allay the anxiety that some candidates seem to have regarding this new examination modality.

Despite this encouraging pass rate, candidates continue to disadvantage themselves in several familiar ways:

- Failure to answer the question asked.

It is very important to read the question carefully and answer what is asked. This is a constant reason why candidates drop marks. For example, question 9(c) clearly asks for clinical signs yet some candidates included symptoms in their answers. Part (d) of the same question asked for other pre-operative investigations, but several answers included CT chest, which had already been shown in the introduction.

- Failure to prioritise answers.

Candidates should remember that CRQs are looking for specific answers and writing as much as possible in the hope of hitting the correct one will not guarantee marks. The candidate instructions at the front of each booklet clearly state that only the first distinct answer per line will be awarded marks. When answering the questions, the candidate needs to think about what are the most important points that need to be included in the answer.

- Poor knowledge of clinical sciences.

Candidates should be reminded that clinical science forms an important part of the intermediate syllabus and it 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. Questions (2) which incorporated elements of clinical measurements performed poorly as did, the stems in question (4) relating to physiology and pharmacology.

- Illegible handwriting.

The CRQ format requires far less writing time than the previous SAQ format. With less time pressure, candidates can ensure that their writing is legible. Examiners take great care to extract answers from a candidate's script, but only material that can be read will achieve a mark.

Results for Individual Questions

Question 1: Ankylosing spondylitis

Pass rate 24.4%

The examiners were surprised at the lack of knowledge on this topic. The condition is important and frequently seen therefore candidates should have known it in more detail than was demonstrated. The pass rate for this question was the lowest overall. Poorer candidates struggled in stems (d), (e) and (f) and this may reflect a lack of clinical experience.

Question 2: Cardiac output measurement

Pass rate 39.1%

The pass rate for this question was the second lowest overall. This type of question would have been unfamiliar to candidates but illustrates what can be tested with CRQs. Components of this question such as diagrams may not have been anticipated by candidates. This was reflected in the poor answers. The stems featuring diagrams, such as section (e), were the worst answered parts of this question.

Question 3: Withdrawn

Question 4: Anaesthesia for the elderly

Pass rate 61.5%

Candidates continue to underestimate the importance of basic sciences and how they underpin anaesthesia. Parts (a), (b) and (c) related to physiology and pharmacology and were answered poorly. Answers to part (c) were far too general, with candidates failing to give specific reasons why there may be cardiovascular instability during this operation.

Question 5: Burns

Pass rate 61.1%

This question was answered well. It was reassuring that candidates were able to assess the airway in a patient with burns and were aware of the concerns of anaesthetising such patients. Candidates knew the Parkland formula, but it was disappointing that many candidates could not apply their knowledge and calculate the correct fluid requirements.

Question 6: Obstetrics- General Anaesthesia for caesarean section

Pass rate 59.5%

In this paper, this question had one of the lowest pass rates, but showed good correlation with overall performance. It was clear that candidates were not familiar with the 5th National Audit Project (NAP5) of the Royal College of Anaesthetists and Association of Anaesthetists. The reasons of accidental awareness under GA section was poorly answered. At times answers were too generalized and lacked specific detail. Even though trainees would have had minimal exposure to patients undergoing general anaesthesia for caesarean section, part (e) was well answered.

Question 7: Parkinson disease

Pass rate 70.9%

This question was judged to be one of the more difficult questions on the paper so it was reassuring that the pass rate for this question was high. The pharmacological components of this question were where the candidates tended to drop marks. Weaker candidates were unable to describe the features of withdrawal of medication in these patients.

Question 8: Drug eluting stents

Pass rate 74.7%

This question correlated very well with overall performance. It was well answered question, with candidates giving comprehensive answers. The management of patients with drug eluting stents has become a common clinical problem and this was reflected in a good pass rate.

Question 9: Thyroid disease and surgery

Pass rate 90.6%

This question had the highest overall pass rate for this paper. The knowledge components of this question were answered well. However, the more clinical aspects of this question, such as section (f) was where weaker candidates dropped marks. Some candidates clearly failed to read the question correctly. Most correctly diagnosed hyperthyroidism and listed appropriate signs of hyperthyroidism - some included symptoms, but the question clearly asked for signs.

Question 10: Neuro- Subarachnoid haemorrhage

Pass rate 74%

This is a common question in all parts of the exam. Reassuringly, this was well answered by most candidates. The initial scenario is one encountered by many trainees, and this part of the question is an area they would be expected to know. The second half of the question, stems (e) - (g), were answered very well.

Question 11: Cardiac – Anti-coagulation in the context of cardiopulmonary bypass

Pass rate 64.4%

Examiners were surprised at the lack of knowledge displayed in this question and particularly because this topic had come up in a recent paper. Part (b) was answered incorrectly by many. Most candidates mentioned inactivation of thrombin or activation of antithrombin III. Very few mentioned both inactivation of thrombin and factor Xa. In section (c), most candidates mentioned 3 or 4 tests correctly but very few managed to correctly give the advantage and disadvantage of each test.

Question 12: Pain – Acute on chronic pain

Pass rate 70.7%

Though this question performed relatively well, it was the feeling of the examiners that candidates lacked knowledge in the management and implications of analgesic patches. Section (b), was particularly poorly answered, with candidates clearly failing to read the question correctly. Candidates focused on comparing a buprenorphine patch and fentanyl patch rather than mentioning the peri-operative implications.

Summary

The pass rate of this written paper was the highest for several sittings and 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. Therefore, to maximize chances of passing at the first attempt, we would encourage candidates to consider this before attempting the exam.

This is the first time candidates have sat a full CRQ paper and it is good to see that most candidates have adapted their style of writing to the new format. However, some candidates continue to write as much as possible in the space provided and doing so may disadvantage candidates.

As illustrated in this exam, CRQs may include data and other artefacts therefore candidates may need to consider how they approach their revision for the Final written paper.

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

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