

Report on the Constructed Response Question Paper – March 2021

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 2021 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 and currently the majority are all new questions.

Structure of the CRQ paper

The March 2021 CRQ 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. 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 stabilisation 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: There is an equal balance of questions adjudged to be difficult, moderately difficult, and easy

- 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 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 2021 CRQ

Monday 7th December 2020 CRQ group meeting

- The CRQ group convened for paper checking. This was a final review of the paper to check for factual accuracy, clarity of language and ease of understanding. The group made any necessary amendments and assigned a provisional pass mark to each question.

Wednesday 17th March 2021– Standard Setting Day (SSD)

- The Final 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. The groups then marked 4 anonymized answer booklets (without candidate or College reference numbers). College officials chose the 4 sets of booklets based on 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 these scripts were awarded the correct marks as allowed by the answer template, and that each examiner applied a consistent standard across all 4 sets of booklets. At the end of SSD, a finalised Angoff-referenced pass mark was confirmed for each question.

The candidate answer papers for each set of 2 questions, were then divided amongst the team and then marked. This process leads to the 12 questions for each candidate being marked by 6 different examiners. This eliminates any risk of bias that could arise with a single examiner marking all 12 questions. The Examination Department scrutinise the submitted marks and clarify any ambiguities within the marked scripts. CRQ leads then sample the marked papers looking at the marking of new examiners and outlier scores. Any issues during sampling will be fed back and discussed with the marker and where appropriate, to the marking body. Once sampling is completed, the College statistician prepares the results data for the CRQ group to review item performance before individual scores are ratified and results released.

Results – Monday 19th April 2021

The overall pass rate for this paper was 73.2%

This compares with recent CRQ / SAQ papers:

- September 2020 69.7%
- March 2020 83%
- September 2019 80%
- March 2019 74.73%
- September 2018 58.4%

Analysis of Results

The pass rate for this CRQ exam was good.

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 remains a constant reason why candidates drop marks. For example, question 5(b), candidates were asked for the physiological factors that regulate the intraocular pressure. Many candidates gave answers about the factors that control the blood supply to the eye.
- 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 answer will not guarantee marks. The candidate instructions

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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. For example, if asked for 3 differential diagnoses. You need to think what would be the most important 3-4 diagnoses in this case and answer as appropriate. Writing the tenth or eleventh most common diagnoses, though correct, will not guarantee marks.

- 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 as applied to anaesthesia was poor when compared to clinical knowledge. The pharmacology components of question (4), (9) and (10) were generally poorly answered. Likewise, the physiology component of the Obstetric question performed badly.

Results for Individual Questions

Question 1: Sickle cell disease

Pass rate 65.2%

The knowledge components of this question were poorly answered. Very few candidates were aware of the systemic effects of sickle cell disease. The anaesthetic-related questions were better answered, though surprisingly only one third of candidates got full marks for naming the peri-operative factors that may precipitate sickling.

Question 2: Pneumonectomy

Pass rate 47.7%

This is a fairly common topic in the Final FRCA, so a pass rate of only 47.7% was disappointing. The question did correlate well with overall performance, however, no component was particularly well answered, with candidates consistently dropping one or two marks on each stem. In parts (b) and (c), physiological measurements and contra-indications to pneumonectomy, we were looking for more detail than that offered by the candidates.

Question 3: VTE

Pass rate 44.3%

An important clinical topic, but again the pass rate for this question was disappointing. Most candidates answered well in sections (a) and (b), being able to name pathophysiological factors that lead to venous thrombus formation and risk factors for venous thrombus formation. The rest of the question was poorly answered. Question (e) the safe practice of central neuroaxial block, only had 20% of candidates achieving full marks.

Question 4: Cardiac disease in the Obstetric patient

Pass rate 59.8%

This was considered to be one of the harder questions in the paper. It was therefore reassuring to see it answered well. The applied physiology and pharmacology components of the question saw candidates drop the most marks.

Question 5: Eyes

Pass rate 33.2%

This question had previously been used in the SAQs and has been adapted for the CRQ format. The pass rate for this question was poor with many candidates not displaying much knowledge about the clinical aspects of anaesthetizing a patient for an emergency eye operation. Additionally, candidates failed to answer the question asked, for example, question (b) asked about factors controlling intraocular pressure, however, a number of candidates discussed factors controlling blood flow to the eye.

Question 6: ITU - Airway Pressure Release Ventilation (APRV)

Pass rate 43.4%

This question was judged by the examiners to be one of the more difficult questions on the paper. The question asks about a relatively new mode of ventilation, however, given the current situation, it is a mode of ventilation that candidates would have used in their clinical practice. Candidates dropped marks throughout all the stems of this question. There was a low pass rate but the question correlated well with overall performance on the paper.

Question 7: Spinal surgery

Pass rate 80%

This was a well answered question with candidates giving very comprehensive answers. Marks were dropped on the initial sections and less than half the candidates knew the blood supply to the spinal cord. Very few candidates scored full marks on the complications of the prone position.

Question 8: Tonsillectomy

Pass rate 89.5%

This is an area of the syllabus that candidates would be expected to know. The question was deemed by the examiners to be one of the easier questions on the paper and this was reflected in the highest pass rate for this paper.

Question 9: Sedation in a patient with liver disease

Pass rate 68.9%

This question showed familiar failings in basic sciences. The effects of liver disease on cardiovascular/respiratory systems & pharmacokinetics were all poorly answered. Very few candidates demonstrated knowledge of sedation scores.

Question 10: Awake craniotomy

Pass rate 40.9%

Candidates answered this question poorly, and this may reflect a lack of experience in neuro-anaesthesia. Knowledge of pharmacology was again poor. Not many candidates knew about the role of dexmedetomidine in this context. Section (f) asked about drugs used to terminate an intra-operative seizure. Very few candidates knew what drugs to give for a seizure, but those who did frequently didn't know the correct doses. It is important to read the question and answer what is asked; the last section of this question asked for specific intraoperative complications, yet most candidates gave general complications.

Question 11: TURP

Pass rate 80%

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 it's an area of the curriculum that candidates would be expected to know.

Question 12: Trigeminal neuralgia

Pass rate 67.5%

This question had a good pass rate and showed the best correlation with overall performance in the paper. Section (e) asked for the differential diagnosis for trigeminal neuralgia. Some candidates disadvantaged themselves and wrote as much as they could in the space provided. As per the candidate instructions, only the first distinct answer per line is marked.

Summary

The overall standard of the written paper was good, with a pass rate similar to previous sittings. We congratulate the successful candidates on the standard and breadth of their knowledge.

Candidates did less well in mandatory units of training. 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. The exam 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, to maximise their chances of passing at the first attempt.

As mentioned in previous reports, knowledge of advanced sciences underpinning clinical practice was poor when compared to clinical knowledge. This was noticeable throughout the paper. We remind candidates that clinical science is an important part of the intermediate syllabus and can feature in several questions in a single paper. Candidates should not neglect this area of the curriculum in their revision.

It is good to see that the majority of candidates have adapted their style of writing to the CRQ format. However, some candidates continue to try to write as much as possible in the space provided. Doing so, may disadvantage candidates through lost time and the marking process, whereby only the initial responses are scored according to the number of marks awarded for the question.

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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