Report on the Constructed Response Question Paper – September 2022

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 September 2022 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 stages 1 and 2 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.

Structure of the CRQ paper

The September 2022 CRQ paper consists of 12 questions to be answered in 3 hours. Though the curriculum has recently changed, the CRQ paper retained the same format as previous papers. 6 questions taken from each of the previous mandatory units of training and 6 from the general duties, optional and advanced science modules. In the immediate future the CRQ paper will maintain this format, though there may be less emphasis placed on some of the mandatory areas of training.

- 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 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 finalized using modified Angoff referencing, which takes place during the CRQ group meeting 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 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 September 2022 CRQ

Monday 20th June 2022 CRQ group meeting

• The CRQ group convened during the exam week 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.

Tuesday 27th September 2022– Standard Setting Day (SSD)

• These meetings were conducted online. The Final examiners were divided into six groups of 8-10 people, each chaired by a member of the CRQ group. Each group was given two questions and their associated model answer templates. The groups then marked 4 anonymized answer papers (without candidate or College reference numbers). College officials chose the 4 sets of papers 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 group 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 papers. At the end of SSD, a finalized Angoff- referenced pass mark was confirmed for each question.

The candidate answer papers for each set of 2 questions, were then divided amongst the group 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 staff scrutinise the submitted marks and clarify any ambiguities within the marked scripts before individual scores are ratified.

Results – Monday 24th October 2022

The overall pass rate for this paper was 77.5%

This compares with recent CRQ papers:

- March 2022   73.3%
- March 2021   73.2%
- September 2020   69.7%
- March 2020   83%
- September 2019   80%

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 12(I), candidates were asked for two clinical signs of phenytoin toxicity. However, candidates proceeded to list the side effects of phenytoin

• 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. 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. The candidate

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instructions clearly state that only the first distinct answer per line will be awarded marks. If a candidate writes several answers on one line, only the first answer on that line will be marked and the rest discounted.

- 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 physiology components of the obstetric question and the anatomy component of the brachial plexus question were both poorly answered.

Results for Individual Questions

Question 1: Accidental awareness under general anaesthesia
Pass rate 22.2%

This was the worst performing question on the paper. The question referenced the Joint Guidelines from the Association of Anaesthetists and the Society for Intravenous Anaesthesia, as well as the 5th National audit project. Candidates tended to answer in general terms as opposed to referencing these documents in their answers. The last question was poorly answered as candidates showed a lack of understanding of the Marsh and Schneider models.

Question 2: Pain - Fractured ribs
Pass rate 57.1%

The management of patients with fractured ribs is becoming a common clinical problem. The analgesic components of this question were answered well. Candidates tended to drop marks on the stems relating to anatomy.

Question 3: Liver disease
Pass rate 76.7%

This was a well answered question, with candidates giving very comprehensive answers. Candidates only really struggled with the pharmacological component of the question.

Question 4: Paediatrics - Foreign body
Pass rate 60.1%

Knowledge of this subject appeared to be good and the question was generally well answered. However, some candidates lost marks because they didn't know the specific complications when anaesthetizing this type of case.

Question 5: Robotic surgery
Pass rate 48.4%

This question recorded one of the lower pass rates. Sections (a) and (b) were answered well, but the subsequent sections were poorly answered. It appeared that many candidates had minimal experience of robotic surgery. Answers to part (c) and (f) seemed to indicate that many candidates were unclear as to practicalities of positioning patients during this type of surgery.

Question 6: Anaesthesia and non-obstetric surgery in pregnancy
Pass rate 50.1%

A theme we have seen in previous exams is that obstetrics seems to be poorly understood
The pass rate for this question was surprisingly low. This is a common clinical scenario encountered by many trainees, and a topic that they should be expected to know. Questions (c) and (d) were focused on foetal wellbeing and these sections were particularly poorly answered

Question 7: Fluids
Pass rate 51.3%

This question is very relevant to anaesthetic practice and yet performed surprisingly poorly. The sections (a) and (d) requiring the factual recall of numerical values were the worst answered sections. The more practical aspects of fluid management were generally answered well.

Question 8: Hydrocephalus
Pass rate 89.8%

The pass rate for this question was the highest in the paper and was generally answered well. This proved to be a straightforward question for the majority of candidates.

Question 9: Anaesthetic management of Thyroidectomy
Pass rate 68.2%

This question was considered by examiners to be one of the harder questions on the paper, but reassuringly it was answered well. The first section, on the mechanism of action of action of drugs was poorly answered. The more clinical aspects of this question, such as section (e) was where weaker candidates also dropped marks.

Question 10: Aortic stenosis
Pass rate 67.9%

Aortic stenosis is a common condition and its pathophysiology and management should be known to candidates sitting this exam. This is a common topic in the Final FRCA exam and reassuringly it was well answered. The questions related to TAVI is where the majority of candidates dropped marks.

Question 11: Brachial plexus blocks
Pass rate 79.0%

This is a common question in all parts of the exam. and it's an area of the curriculum that candidates would be expected to know. Though well answered, the sections on anatomy were poorly answered. A lack of knowledge of basic sciences is a recurring theme, in the Final exam

Question 12: ICU - seizures
Pass rate 64.4%

This question had a good pass rate, and showed the best correlation with overall performance in the paper. In part (d) few candidates knew the definition of status epilepticus. In section (i) candidates failed to answer the question that was asked. The question asked for signs of toxicity yet candidates wrote about the side effects of phenytoin.

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. The questions on pain and obstetrics were answered poorly in what are considered to be fairly common topics. This is a trend we have previously seen. 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 maximize 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 syllabus and can feature in

several questions in a single paper. Candidates should not neglect this area of the curriculum in their revision.

Some candidates continue to try to write as much as possible. Doing so, will continue to disadvantage candidates. As mentioned previously only the first answer per line will be marked and all other answers on that line will be discounted.

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.

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