Royal College of Anaesthetists

Report on the Constructed Response Question Paper – September 2024

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 2024 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 curriculums 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 2024 CRQ paper consists of 12 questions to be answered in 3 hours. All CRQ questions are mapped to a specific section of the curriculum. Despite the curriculum change in 2021, the CRQ paper retained the same format as the 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, as described below. In the immediate future, the CRQ paper will maintain this format, although 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 has been designed to comprise questions with varying levels of difficulty, however, there is always an equal balance of questions judged to be difficult, moderately difficult, and easy.

The level of paper difficulty and the pass mark are set using modified Angoff referencing, which takes place during the CRQ Group 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.

To facilitate an objective and reproducible marking process, a model answer template is provided for each question, which shows the number of marks available for each part of a question. All questions are subjected to an exhaustive editing and peer review process before use in an examination and this is explained below in the section on quality control.

Quality Control for the September 2024 CRQ

Monday 17th June 2024 CRQ group meeting

The CRQ group convened at the College on 17 June 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 15th October 2024 – Standard Setting Day (SSD)

The Final examiners were divided into twelve groups of 5-7 people, each chaired by a member of the CRQ group. Each group was given one question and its associated model answer template. The groups then marked four anonymised candidate scripts. The lead coordinator for CRQ chose the four scripts 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 permitted by the answer template and that each examiner applied a consistent standard across all four scripts. At the end of SSD, a finalised Angoff-referenced pass mark was confirmed for each question.

The process means that for each candidate the twelve questions are marked by twelve different examiners, which helps eliminate any risk of bias that could arise when a single examiner marks all twelve questions. Members of the CRQ group also took a sample of each examiner's scripts to quality assure the accuracy and consistency of the marking. The Standard Setting and Psychometrics Manager liaised with staff from the examinations department to scrutinise the submitted marks and clarify any ambiguities within the marked scripts before the exam was moderated and individual scores ratified by a panel comprising CRQ leads and relevant College staff.

Results – Thursday 17th October 2024

The overall pass rate for this paper was 74.52%

This compares with recent CRQ papers:

- February 2024 55.17%
- September 2023 79.78%
- February 2023 71.94%
- September 2022 77.42%
- March 2022 73.35%
- March 2021 73.18%
- September 2020 69.73%

Analysis of results

There were two repeat questions and ten new questions in this paper, although three of the new questions were previous topics that have been rewritten. All topics chosen were deemed clinically relevant. There were no poorly performing questions, but some candidates continue to disadvantage themselves in familiar ways.

- Failure to answer the question asked or interpret the stem correctly

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, in question 1 when asked for "patient specific factors" many candidates gave general factors such as "cardiovascular instability" and in other questions when asked for "investigations", some candidates gave signs or findings on examination and similarly when asked for "clinical signs" some candidates gave investigations.

- 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 appropriately. Writing the tenth or eleventh most common diagnoses, though correct, will not guarantee marks. The candidate instructions clearly state that only the first distinct answer per line will be awarded marks. If a candidate writes several answers on one line, the first will be marked and the rest discounted. Generally, though, this was less of an issue than in previous papers.

Results for individual questions

Question 1: Awareness

A new question and subject of a recent NAP report. Causes of awareness at emergence, complications of burst suppression and actions to take in the case of awareness were well answered. Less well answered were the EEG characteristics with propofol anaesthesia and the NAP5 tool to grade awareness.

Question 2: Paediatric Sepsis

A new question and given some high-profile cases of paediatric deaths from sepsis in the media, clinically relevant. Reassuringly, more than two thirds of candidates answered this question correctly. Most candidates gave good answers for antibiotics and size of fluid challenge. Marks were dropped on the choice of inotrope and other biochemical abnormalities seen in paediatric sepsis.

Question 3: Cardiac – aortic dissection

This was a new question. Aetiology and investigations were answered well, and half of the differential diagnoses were answered correctly by most candidates. The initial management plan, CPB cannulations sites, hypothermia classification and complications of aortic dissection were less well known possibly reflecting that some candidates may not have managed a case of aortic dissection.

Question 4: Myaesthenia Gravis

A new question but on a topic that is often asked in the Final FRCA. Clinical features, diagnosis, type of muscle weakness and how to pre-optimise were all well answered. Medications to treat and drugs to avoid were less well answered.

Question 5: Pain/hip fracture

A new question on a common clinical scenario. Pain assessment and labelling of the image were well answered suggesting that many candidates are familiar with this block. Marks were dropped on benefits or peripheral nerve block, advantages of US v landmark technique and factors other than pain relief that prevent remobilization 24 hours post-op.

Question 6: Obstetric/ITP

A new question on obstetric patients with a low platelet count, which most candidates will encounter. The prescription for remifentanil PCA was well answered and although no particular stem was poorly answered, marks were dropped across causes of thrombocytopenia, therapeutic options, indications for platelet transfusion around delivery and risk factors for retained placenta.

Question 7: Anaesthesia for free flap surgery

A new question on an often-asked topic in the Final FRCA. The questions about pre-op cachexia and intraoperative goals were well answered. Properties of the free flap that impact its survival was not well answered. Features of ischaemia from a venous cause was not well answered; candidates gave

features of ischaemia from an arterial cause.

Question 8: Perioperative cardiac arrest

A new question based on a recent NAP report and AoA guidelines with a commonly encountered clinical scenario. Factors that trigger discussions about treatment escalation plans were poorly answered but the question about management of bone cement implantation syndrome was well answered.

Question 9: Dystonic drug reaction

A new question on a well recognised complication of commonly used antiemetics. Most candidates identified the causative agent, but the features and mechanism of an acute dystonia were not well answered and candidates dropped marks on antiemetic strategies.

Question 10: ICU – beta blocker overdose

A new question. Performance on the mechanism of action of drugs used to treat beta blocker overdose was variable and the question about dialysis in beta blocker overdose was poorly answered. Most candidates knew the indications for beta blockers.

Question 11: Neuroanaesthesia, middle ear surgery

This question has been used before. In this sitting, candidates dropped marks on various sections: methods to lower blood pressure, how to optimize the surgical field, and reasons why patients are prone to PONV. The question about anaesthetic technique where nerve monitoring is required was well answered.

Question 12: Anaesthesia with a transplanted heart

This is a repeat question and was generally well answered. The areas where marks were dropped were the action of drugs on a denervated heart, the cardiovascular conditions a transplanted heart develops and the physiological properties of a denervated heart.

Summary

Statistical analysis of this paper shows that the overall standard of the written paper was good, and the pass rate was in keeping with previous sittings. We congratulate the successful candidates on the standard and breadth of their knowledge.

The lowest performing questions were the pain, dystonia and obstetric questions. Prior to sitting the Final FRCA, it is important that candidates gain exposure to all the relevant specialties and to remember that knowledge of clinically relevant physiology and pharmacology is essential for the safe practice of anaesthesia.

Some candidates are still trying to write as many answers as possible for each question but in doing so are potentially disadvantaging themselves. As mentioned previously, only the first answer per line will be marked and all other answers on that line will be discounted (correct or not) and writing too much may cause time pressures.

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

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