

Report on the Short Answer Question Paper – September 2018

This report has been compiled by the Chairs of the Short Answer Question (SAQ) group to provide information for candidates and trainers about how 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 2017 paper. There is a section at the end with comments about the individual questions which we hope you will find useful.

The 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. Because the time available to answer each question is limited, it also tests judgment, and the ability to prioritise information within the answer rather than just factual recall.

The questions for each SAQ 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 before inclusion in an SAQ paper.

Structure of the SAQ paper

The SAQ 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 six 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 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 SAQ paper is written to contain questions with varying levels of difficulty:

- 2 questions adjudged to be difficult (pass mark 10-11/20)
- 8 questions adjudged to be moderately difficult (pass mark 12-13/20)
- 2 questions adjudged 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. All SAQ 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. 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.

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Quality Control for the September 2018 SAQ paper

Exam week 18-22 June Paper Checking Day

- For paper checking the Final examiners convened, during exam week, at the College and were divided into six teams of 8-10 people, each chaired by a member of the SAQ 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. They made any necessary amendments and 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 SAQ paper process.

Wednesday 19th September 2017 – Standard Setting Day (SSD)

- The examiners again convened in their teams at the College and this time marked 4 anonymized SAQ answer booklets (without candidate or College reference numbers) containing the 2 questions they had looked at 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 these scripts were awarded every mark allowed by the answer template, and that each examiner applied a consistent standard across all four candidates. At the end of SSD a finalized, 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. This eliminates any risk of bias that could arise with 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 9 October 2018

The overall pass rate for this paper was 58.4%

This compares with recent SAQ papers:

- March 2018 72.2%
- September 2017 68.81%
- March 2017 50.68%
- September 2016 70.54%
- March 2016 62.65%
- September 2015 49.50%

Analysis of Results

The pass rate for this exam was higher than in the last sitting, but similar to the two previous sittings.

Candidates continue to disadvantage themselves in a number of familiar 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. For example, in question 2 part a, the question asked for anaesthetic factors that might predispose to dental damage (laryngoscopy, airway adjuncts, inexperienced anaesthetist, etc). Many candidates lost marks because they wrote about factors related to the patient rather than to the anaesthetic.

- Poor knowledge of clinical sciences

As previously, knowledge of clinical sciences applied to anaesthesia was poor when compared to clinical knowledge. For example, in question 6 part a, quite a few candidates were unable to demonstrate knowledge of the sequence of neurological events following spinal cord injury.

- Poor weighting of answers

Candidates should make sure they note how many marks are allocated to each part of the question. Writing extensively on the low scoring sections of the question, to the detriment of other sections, will 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 practise writing for 3 hours as part of your exam preparation as this is not something that most people are used to.

Results for Individual Questions

Question 1: Penetrating eye Injury

Pass rate 41.9%

This question was not well answered and possibly demonstrated a lack of experience in traumatic eye injuries. The examiners felt that the candidates failed to appreciate that this was an isolated injury in an otherwise fit patient. Some candidates also failed to appreciate the degree of neuromuscular block required.

Question 2: Post operative pulmonary complications

Pass rate 63.2%

This is a question on a topic of great relevance to everyday practice and was reassuringly answered relatively well. The pass rate was good and the candidates generally exhibited good knowledge. However there were still common errors in particular the last section gave lists of complications rather than strategies to avoid them. This may be an example of not reading the question properly.

Question 3: Guillan-Barre

Pass rate 56.9%

Despite a respectable pass rate, candidates also lacked some knowledge on this subject. The feeling of the examiners was that there was little focus on the answer and feel that time may have been wasted. Very few people knew the correct definition of Guillan-Barre syndrome, nor the correct use of muscle relaxants in these patients.

Question 4: Thyroidectomy

Pass rate 46.6%

Candidates answered this question in very general terms and answers lacked specific details. Answers demonstrated lack of experience in this field. There was also a degree of failing to read the question which asked why they would do tests, candidates just gave a list.

Question 5: lung resection

Pass rate 58.4%

This is a common question in all parts of the exam and requires a good understanding of physiology. Reassuringly this was well answered by the majority of candidates and had a reasonable pass rate. Candidates particularly answered the section on one lung ventilation well.

Question 6: Meta-analysis

Pass rate 46.6%

This question had been used before and had been updated. This question divided candidates more than any other and showed very good correlation with overall performance. However some candidates confused systematic review with meta- analysis.

Positive predictive value (PPV) is calculated using the formula:

$$\text{true positives} / (\text{true positives} + \text{false positives})$$

However, in order to calculate PPV from sensitivity (test positive / all positives) and specificity (test negative / all negatives), one requires the prevalence of the condition (in this case difficult airway) in the sample population as well.

The senior examiners applied a post-exam amendment to the scores to account for the absence of this information in the question stem. This did not change the overall outcome of any candidates' results.

Question 7: MRI

Pass rate 38.1%

This question was poorly answered, although again showed good correlation with overall performance. Most candidates did not concentrate on anaesthesia for MRI but instead discussed remote location only. The lack of understanding of the risks inherent in looking after a patient during an MRI scan is worrying as this is a frequent task for anaesthetists and intensive care doctors at this level.

Question 8: Fentanyl Patches and chronic pain

Pass rate 73.9%

The pass rate was the highest on the paper and candidates demonstrated good knowledge of this common area of pain medicine. There was a lack of knowledge with problems with buprenorphine treatment.

Question 9: Ventilator Associated Pneumonia

Pass rate 38.6%

Examiners were surprised at the lack of knowledge on this topic particularly as it has been used in a recent paper. The condition is topical, important and frequently seen so candidates really should know it in more detail than was demonstrated here. Candidates lacked knowledge of definition, and listed just lung protection strategies rather than protection against VAP. This question showed the closest correlation with overall performance.

Question 10: Ovarian Malignancy Laparotomy

Pass rate 34.1%

The pass rate for this question was surprisingly low, since it has also been asked recently. Answers were very generic and lacked specificity for this condition and patients, and may be a reflection of lack of experience. The practical aspects of anaesthesia for this patient were also lacking.

Question 11: Obstetric high BMI

Pass rate 71.4%

This was a new question and was answered well by most candidates. Some lost marks on the communication section by giving very vague answers.

Question 12: Meningococcal Sepsis

Pass rate 64.2%

This was well answered with candidates exhibiting good knowledge. The examiners were aware that management of this condition can vary and took this into account in the marking.

Summary

The pass rate of this SAQ exam was lower than expected, although not the lowest seen in the last few years. We congratulate the successful candidates on the standard and breadth of their knowledge.

Previously we have noted that candidates tend to do less well in mandatory units of training and applied clinical science. On this occasion anaesthesia for common conditions in the general syllabus seems to have caused most difficulty. In particular ovarian malignancy, thyroidectomy and VAP.

We would encourage candidates to have adequate experience before attempting the exam so as to maximise their chances of passing at the first attempt.

Finally, the conduct of the SAQ 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 Gary Lear, Dr Kevin O'Hare & Dr Fiona Donald
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