Report on the Short Answer Question Paper – September 2017

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 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 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.

Quality Control for the September 2017 SAQ paper

Friday 23rd June 2017 – Paper Checking Day (PCD)

- For PCD the Final examiners convened 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 20th 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 – Thursday 12th October 2017

The overall pass rate for this paper was 68.81%

This compares with recent SAQ papers:

- 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: Renal replacement therapy**
Pass rate 84.9%
This question had the highest pass rate in the paper. The topic is relevant to everyday practice in intensive care so it was reassuring to see that knowledge of it was generally excellent. However, a number of candidates still gave incomplete accounts of the differences between dialysis and filtration.

**Question 2: Dental damage**
Pass rate 68.3%
This question was thought to be easy and the pass rate was correspondingly high. Part d concerned the need to be open with patients when things go wrong (duty of candour) and was not as well answered as the parts relating to purely clinical matters. It is important to be aware of how to manage such situations as misunderstandings can lead to great distress for all parties. As mentioned above, some candidates failed to read the question properly and lost marks in part a because they listed patient rather than anaesthetic factors that could predispose to dental damage.

**Question 3: Ultrasound**
Pass rate 58.9%
This question was used in a recent paper and was reused with only slight modification this time. The pass rate was significantly better on this occasion and it is good to see improved understanding of a technique that is a key component of modern anaesthesia. However, most marks were scored in
part c, the clinical application of ultrasound, with candidates still demonstrating a lack of knowledge of the basic scientific principles involved in generation of an image.

**Question 4: Intra-aortic balloon pump**
*Pass rate 58.7%*
This question correlated well with overall performance and was generally well answered in the clinical sections (parts c and d). However, part b which required an explanation of the physiological effects of counter-pulsation, was answered poorly.

**Question 5: Splenectomy**
*Pass rate 34.4%*
The examiners considered this to be a difficult question and this would seem to be confirmed by the pass rate. Most marks were available in section c which asked for pre-operative considerations specifically related to the patient’s condition. This would include such things as steroid dependence, anaemia, or antibodies due to previous blood product transfusions. Many candidates answered in too generic a fashion including only non-specific considerations for anaesthesia for major surgery.

**Question 6: Spinal cord injury**
*Pass rate 49.3%*
This question had also been used before and was also answered better on this occasion. It was considered to be of moderate difficulty. Most marks were lost in part a with some candidates being unable to give a coherent explanation of the sequence of neurological events following a spinal cord injury.

**Question 7: Pain management for fractured ribs**
*Pass rate 74.8%*
This was an easy question that covered a very common clinical scenario. It is reassuring to see such widespread appreciation of how to monitor and manage a common but potentially serious condition.

**Question 8: Cardiopulmonary exercise testing**
*Pass rate 24.3%*
This question was not well answered which is surprising given the widespread use of cardiopulmonary exercise testing. The inclusion of perioperative medicine in the curriculum will hopefully lead to more exposure to this and other preoperative testing methods and to a greater understanding of risk assessment in general.

**Question 9: Intrauterine fetal death**
*Pass rate NA*
This question was removed from the exam after marking but no candidates were disadvantaged by its removal. The reason for not including it in the final scores was that there was confusion amongst candidates about whether the intrauterine fetal death had occurred in the current, or a previous pregnancy. On reflection, the examiners agreed that the wording of the question did allow either interpretation. As has been outlined above, all the SAQs undergo rigorous scrutiny and are checked and rechecked for clarity and accuracy. Unfortunately, the alternative interpretation was not spotted in this case. The question will be worded before being reused. Having said all of the above, the pass rate for this question was poor, with most marks being lost in section b where candidates were asked to discuss considerations for analgesia. Even those who had correctly interpreted the question tended to simply list methods of analgesia rather than outlining the advantages and disadvantages of each.

**Question 10: Obstructive sleep apnoea**
*Pass rate 43.3%*
The pass rate for this question was surprisingly low. Most candidates knew the elements of the STOP-BANG assessment but few knew how to use the score to quantify risk. Most marks were available in part c and those who remembered the importance of such things as the use of
perioperative CPAP, short acting anaesthetic agents, neuromuscular monitoring and of ensuring full reversal of muscle relaxation scored well here, and tended to do well overall.

**Question 11:** Pulmonary hypertension  
*Pass rate 52.7%*

This was one of the questions that the examiners thought would prove difficult so it is good to see a respectable pass rate. Part b of the question asked for causes of pulmonary hypertension and some candidates displayed a poor understanding of cardiac physiology in answering this, seemingly confusing the right and left sides of the heart. In part c where candidates were asked about anesthetic goals when anaesthetizing a patient with pulmonary hypertension, some gave very generic answers related to cardiac disease in general, rather than outlining specific goals for this condition.

**Question 12:** Grommets and upper respiratory tract infection  
*Pass rate 74%*

This question had also been used before and was thought to be moderately difficult. It had the highest correlation with overall performance. Candidates generally did better on this occasion then when it was last used so it seems that knowledge of this important and frequently seen scenario has improved.

**Summary**

The pass rate of this SAQ exam was at the expected level, and it is encouraging that four of the questions on mandatory units of training had amongst the highest pass rates in the paper. We congratulate candidates on their generally excellent performances.

Candidates do appear to be better prepared than previously and are perhaps following the advice to do taster sessions in areas they have not yet worked in. In addition, with the deadline for completing the Final FRCA having been moved back by six months, it is possible that candidates do not feel the same pressure to take the written paper very early in specialist training.

As mentioned in several previous reports, knowledge of advanced sciences underpinning clinical practice seemed less good than clinical knowledge. This was particularly noticeable in questions 3, 4 & 6. We remind candidates that clinical science is an important part of the intermediate syllabus which can come into several questions in a single paper, reflecting the way in which applied science forms part of our daily clinical practice. Do not neglect your revision in this area.

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.

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**Chairs, Short Answer Question Group**  
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