



# COLLEGE OF INTENSIVE CARE MEDICINE OF AUSTRALIA AND NEW ZEALAND

## SECOND PART EXAMINATION

### EXAM REPORT

March / May 2024

This report is prepared to provide candidates, tutors, and Supervisors of Training (SOTs) with information regarding the assessment of candidates' performance in the CICM Second Part General Examination. This report is for use as an educational resource and includes a guide as to expected content of the answers for the written section. Trainees/SIMGs should discuss the report with their supervisors and educators so that they may prepare appropriately for future examinations. Trainees/SIMGs should not rely solely on writing practice answers to previous exam questions for exam preparation and should first establish a strong knowledge base from clinical learning and studying relevant texts, journals, and on-line resources.

The exam comprises a written section and an oral section. The written section consists of two papers, comprised of 15 short answer questions each. The pass mark for the written section is derived by the Angoff method and for this sitting was set at **53.52%**. The oral section consists of eight interactive vivas and two separate clinical hot cases. The vivas were completed in Brisbane over two consecutive days (Thursday 23<sup>rd</sup> and Friday 24<sup>th</sup> May) and the hot cases were completed in Brisbane (Wednesday 22<sup>nd</sup> May).

The tables below provide an overall statistical analysis as well as information regarding performance in the individual sections. A comparison with data from the five previous exams is provided.

**In all sections of the exam the candidate must demonstrate performance consistent with that of a trainee who is ready to enter the transition year of the CICM training program, by demonstrating they have the ability for safe, effective, independent practice as an Intensivist. Candidates who are not at this level are encouraged to defer their attempt at the exam.**

Overall Performance	2024.1	2023.2	2023.1	2022.2	2022.1	2021.2
Presenting for written (Including SIMG)	76	81	66	52	38	64
Carrying a written pass or exempted from a previous attempt	20	11	8	29	24	26
SIMG written exempt	4	2	2	3	4	4
Total number presenting (written + carry + SIMG)	96	92	74	81	62	90
Invited to orals (passed written section)	45	47	24	23	21	46
Total number invited to the oral section	65	58	32	52	45	70

<b>Analysis of Performance in Individual Sections</b>	<b>2024.1</b>	<b>2023.2</b>	<b>2023.1</b>	<b>2022.2</b>	<b>2022.1</b>	<b>2021.2</b>
Successful in the written section	45/76	47/81	24/66	23/52	21/38	46/64
	<b>59%</b>	<b>58%</b>	<b>36%</b>	<b>44%</b>	<b>55%</b>	<b>72%</b>
Successful in the Hot case section	31/65	32/58	18/32	27/51	21/45	37/70
	<b>48%</b>	<b>55%*</b>	<b>56%</b>	<b>53%</b>	<b>47%</b>	<b>53%</b>
Successful in <u>both</u> Hot cases	17/65	17/58	13/32	16/51	14/45	25/70
	<b>26%</b>	<b>29%</b>	<b>41%</b>	<b>31%</b>	<b>31%</b>	<b>36%</b>
Successful in the Viva section	53/65	48/58	27/32	44/51	40/45	56/70
	<b>82%</b>	<b>83%</b>	<b>84%</b>	<b>86%</b>	<b>88%</b>	<b>80%</b>

<b>Sectional Pass Rates</b>	<b>2024.1</b>		<b>2023.2</b>		<b>2023.1</b>		<b>2022.2</b>		<b>2022.1</b>	
<b>Hot cases</b>	<b>Pass rate</b>	<b>Highest individual mark</b>	<b>Pass rate</b>	<b>Highest individual mark</b>	<b>Pass rate</b>	<b>Highest individual mark</b>	<b>Pass rate</b>	<b>Highest individual mark</b>	<b>Pass rate</b>	<b>Highest individual mark</b>
Hot case 1	48%	90%	53%	83%	56%	85%	49%	85%	51%	82%
Hot case 2	51%	80%	53%	85%	56%	90%	59%	90%	47%	85%
<b>VIVAs*</b>					<b>Day 1</b>	<b>Day 2</b>	<b>Week 1</b>		<b>Week 1</b>	<b>Week 2</b>
Viva 1	77%	90%	76%	85%	56% / 65%	63% / 80%	84% / 80%		100% / 82%	74% / 78%
Viva 2	74%	90%	67%	79%	94% / 80%	88% / 86%	65% / 83%		59% / 70%	78% / 84%
Radiology Viva 3	54%	70%	48%	76%	75% / 83%	63% / 62%	69% / 74%		55% / 66%	74% / 70%
Procedure Viva 4	71%	90%	74%	88%	81% / 78%	56% / 74%	59% / 75%		45% / 72%	26% / 57%
Viva 5	62%	85%	76%	90%	44% / 74%	81% / 70%	84% / 81%		68% / 78%	87% / 90%
Viva 6	58%	97%	79%	91%	63% / 64%	63% / 64%	76% / 82%		95% / 95%	87% / 94%
Viva 7	85%	94%	83%	79%	75% / 80%	88% / 75%	92% / 90%		55% / 55%	61% / 71%
Communication Viva 8	72%	83%	53%	85%	44% / 88%	75% / 75%	63% / 90%		59% / 92%	65% / 90%

55%\*The previous report (2023.2 SP Exam Report) contained an error in above table. The correct data is now included.

VIVA

\*Form the 2023.2 (October) oral section, Vivas 1, 2, 3 and 4 were examined on Thursday and Vivas 5, 6, 7 and 8 were examined on Friday.

<b>Oral Section Pass Rates</b>	<b>2024.1</b>	<b>2023.2</b>	<b>2023.1</b>	<b>2022.2</b>	<b>2022.1</b>	<b>2021.2</b>
Candidates who passed the written section and passed the overall exam	37/45	34/47	17/24	20/52	12/38	27/46
	<b>82%</b>	<b>72%</b>	<b>71%</b>	<b>38%</b>	<b>32%</b>	<b>59%</b>
All candidates invited to oral section and passed the overall exam (written + carry + SIMG)	50/65	40/58	23/32	36/51	29/45	41/70
	<b>77%</b>	<b>69%</b>	<b>72%</b>	<b>71%</b>	<b>64%</b>	<b>59%</b>
Overall Pass Rate	50/96	40/92	23/74	36/79	29/62	41/90
	<b>52%</b>	<b>43%</b>	<b>31%</b>	<b>46%</b>	<b>47%</b>	<b>45%</b>

### **EXAMINERS' COMMENTS**

#### **Written Paper**

59% of the Second Part examination candidates who sat the March 2024 written section were invited to the oral section. Candidates who did not qualify for an invitation did so for one or more of the following reasons:

- Insufficient knowledge of the topic in question.
- Insufficient detail and/or depth of the answer.
- Poorly structured answer.
- Inadequate reference to supportive evidence where relevant.
- Failure to answer the question asked.
- Omission of all or part of the question.

Candidates that failed questions most often gave insufficiently detailed answers that were not at the level expected of a transitional fellow. Candidates often gave generic “proforma” answers that did not deal with the specific issues or scenario outlined in the question.

Candidates are advised to read the questions carefully and thoroughly and ensure they answer the specific question asked and address all parts of each question. Examiners commented that candidates had not appeared to consider the mark distribution in some multi-part questions, spending too little time on the more important sections. Candidates are reminded to make sure their writing is legible and to avoid using non-standard abbreviations. Candidates are also reminded that professional conduct is assessed throughout the exam process and that inappropriate comments written on the answer paper are not acceptable.

The examination report is now referenced to the syllabus to aid the candidate in directing their study more effectively. A selection of marking rubrics to complement the SAQ discussion have been published to guide trainees, SOTs, and educational advisors in the requirements of the assessment process and the standard of written content expected of the transitional fellow.

**Candidates are strongly encouraged to consider feedback and advice from SOTs and educational advisors when considering the appropriate time for them to attempt the Second Part Examination.**

## SECOND PART WRITTEN EXAMINATION

- (A) Write your answers in the blue books provided. **Each** question should be answered in a separate booklet. Please **DO NOT** write 2 short answer questions in the same booklet.
- (B) Start each answer on a **new booklet** and indicate the **question number**. It is not necessary to rewrite the question in your answer book.
- (C) You should aim to answer each question in **ten** minutes.
- (D) All questions are worth ten marks each in total.
- (E) Record your **candidate number** and each **question number** on the cover of each book, page, and hand in all books.

### GLOSSARY OF TERMS

<b>Critically evaluate:</b>	Provide and explain the evidence available relating to a topic.
<b>Outline:</b>	Provide a summary of the important points.
<b>List:</b>	Provide a list.
<b>Compare and contrast:</b>	Provide a description of similarities and differences. You may tabulate your answer.
<b>Assessment:</b>	Generic term that implies determining an underlying diagnosis, encompassing; history, clinical examination, and relevant investigations.
<b>Management:</b>	Generic term that implies determining an overall management plan, encompassing; resuscitation, definitive treatment, initial and ongoing monitoring with supportive treatment.
<b>Discuss:</b>	Explain the underlying key principles. Where appropriate, this may include controversies and/or advantages and disadvantages.
<b>Explain:</b>	Make plain or known in detail.

### NOTE

Where laboratory values are provided, abnormal values are marked with an asterisk (\*).

## Question 1

A patient has been admitted to the ICU 4 hours after cardiac surgery. They are intubated, with VVI epicardial pacing via two unipolar ventricular wires inserted intra-operatively. After the patient is turned, there is sudden failure to capture.

For the following three approaches to re-establish ventricular pacing, outline the technique involved and the advantages and disadvantages of each.

- a) Transcutaneous pacing. (4 marks)
- b) Transvenous pacing. (4 marks)
- c) Use of a skin lead to continue epicardial pacing. (2 marks)

### Syllabus topic/section:

2.1.18 Peri-operative issues in Intensive Care / Cardiac surgery: L1

2.1.19 Intensive Care procedures / Cardiac pacing: L1

### Discussion:

In general, candidates showed sound understanding of Transcutaneous pacing (TCP) and Transvenous pacing (TVP). Candidate are reminded to be accurate with the prescribing details, e.g. some mentioned setting in Joules, instead of current/ mA.

Skin lead pacing was less comprehensively covered. Many candidates showed a suboptimal understanding of the topic. Given this technique is unique to cardiac surgical centres, familiarity with this technique may be lacking for some candidates. This may also reflect the lack of exposure in setting up the temporary pacing in real life practice. We advise candidates to practice in a simulation setting. A few candidates omitted the "Technique" part of the question and therefore, missed out on easily achievable marks. This illustrates how important it is to read the question carefully, so significant parts of the instructions are not overlooked. We recommend candidates highlight (circle/underline/highlighter) the key terms *once reading time is over* to assist with this cognitively.

The better answers outlined the advantages and disadvantages with details on how they would affect the patient. The depth of this approach ensured a more successful display of the standard required as the candidate demonstrated WHY the detail was advantageous or disadvantageous.

Angoff score for this SAQ	5.05
Highest candidate score achieved (averaged)	7.875

## Question 2

With regards to conservative vs liberal oxygen targets in mechanically ventilated adults in intensive care:

a) Discuss the advantages and disadvantages of conservative versus liberal oxygen targets.

(6 marks)

b) Outline the evidence available.

(4 marks)

### Syllabus topic/section:

2.1.5 Respiratory Intensive Care / Oxygen delivery systems and mechanical ventilatory support: L1

### Discussion:

Candidate answers demonstrated a sound knowledge of the evidence in general. The more successful answers focussed on a broad range of specific oxygen toxicities and demonstrated a knowledge of different patient subgroups at risk of oxygen toxicity. Examples of these subgroups include OOHCA, TBI, Sepsis, Bleomycin exposure and sickle cell disease.

With regards to evidence, candidates were not required to recite details or the names of multiple trials to pass, however discussion of at least one trial OR knowledge of summated results of trials were expected. Answers highlighting differing results from various relevant trials and for specific sub-groups were rewarded.

Angoff score for this SAQ	5.05
Highest candidate score achieved	8

### Question 3

A 56-year-old patient is admitted with haemodynamic instability secondary to massive haematemesis to your metropolitan intensive care unit. The hospital has the relevant medical and surgical specialties; however Interventional Radiology services are not available. You are the duty intensivist.

a) Outline your assessment for this patient.

(6 marks)

b) Outline your management for this patient.

(4 marks)

#### Syllabus topic/section:

2.1.6 Gastrointestinal Intensive Care / Acute gastrointestinal bleeding: L1

#### Discussion:

This is a common presentation of critical illness and core knowledge. Overall, most candidates did well in outlining assessment of potential causes, severity of pathology, basic investigations and expected examination findings. Most candidates assessed for liver disease or other haemostatic pathologies, including basic resuscitation and outlining transfusion targets.

Candidates would demonstrate they had achieved the standard required of a transitional fellow if they wrote not just what they would do but *why* (rationale). For example, a simple list of investigations does not distinguish an acceptable standard final year fellowship candidate, but a prioritised plan of investigations with rationale will display a higher level of thought. Marks will be allocated accordingly. Candidates are reminded to pay attention to the glossary of terms. “*Outline*” requires more detail than “*List*”.

Answers outlining management of the patient including specific therapies of potential causes of upper GI bleeding and management of complications of high-volume resuscitation. The superior answer prioritised endoscopy as the first line intervention for upper GI bleeding, detailing its use for therapeutic as well as diagnostic means. Higher marks were also awarded to answers that prioritised plans and provided a rationale for the prioritisation.

Angoff score for this SAQ	6
Highest candidate score achieved	8.5

#### Question 4

With respect to non-convulsive status epilepticus (NCSE):

- a) Outline the challenges in the diagnosis of NCSE. (2.5 marks)
- b) List **five** risk factors for NCSE. (2.5 marks)
- c) Outline the principles of management for patients with suspected NCSE. (5 marks)

#### Syllabus topic/section:

2.1.8 Neurological Intensive Care / Seizure disorders including status epilepticus: L1

#### Discussion:

NCSE is a distinct clinical entity from status epilepticus. Candidates who acknowledged those nuances and addressed this in their answer were able to demonstrate the standard required. Candidates can ensure they cover breadth by considering the types of information used clinically when securing a diagnosis as history, examination and investigations all contribute to diagnostic reasoning. Answers with structure, (for example, in part a) using headings which could include practical, logistical and clinical challenges among others) were rewarded.

Better answers to part C addressed control of seizures, prevention of secondary injury, finding and treating precipitants and involved a strategy for de-escalation. Outline is a glossary term that is defined as 'provide a summary of the important points' which is more than a simple list. For parts A and B, the question asked for an outline and accordingly higher marks were awarded for structured, details answers. As an illustration, general comments about the importance of maintenance of MAP/normoxia/normoglycaemia did not gain marks unless they were contextualised as neuroprotective cares for the patient with NCSE.

It is expected that just listing anti-epileptics is not enough to demonstrate the standard of competence required at the level of a transitional fellow who will be entrusted with independent practice of the critically ill. More detail in terms of dosing considerations, an approach to drug interactions and ways to mitigate unintended consequences is needed.

Angoff score for this SAQ	5.05
Highest candidate score achieved	8.25

## Question 5

A 50-year-old patient is admitted to ICU with respiratory failure secondary to an enlarging left sided pleural fluid collection.

Pleural fluid analysis is performed.

Parameter	Patient value
Colour	Blood stained
Protein	250 g/L
Lactate dehydrogenase (LDH)	850 U/L
WBCs	1.3 x 10 <sup>6</sup> /L
RBCs	1525 x 10 <sup>6</sup> /L
Gram's stain	No organisms seen

### Serum Biochemistry

Parameter	Patient value	Normal Adult range
Serum protein	64 g/L	60 – 80
Serum LDH	265 U/L	150 – 280

- List the likely causes of the pleural collection based on the above pleural fluid analysis and explain the rationale for your answers. (3 marks)
- List and explain additional investigations you would request on the pleural fluid to help differentiate the aetiology. (2 marks)
- Discuss the therapeutic options for a complex pleural collection requiring drainage. (5 marks)

### Syllabus topic/section:

2.1.5 Respiratory Intensive Care / Pleural disease and pleural drain management: L1

2.1.19 Intensive Care procedures / Respiratory, pleural drainage: L1

### Discussion:

Part A was done well by candidates with most displaying a knowledge of causes and familiarity with Light's criteria.

Part B was noted for some candidates misreading the question as it asked for additional investigations to request *on the pleural fluid*. Candidates wasted time providing an extensive list of imaging and blood tests which was not required, rather than Pleural fluid pH and glucose, cytology and culture.

Therapeutic options for drainage of complex collections included a discussion of tube thoracostomy, Interpleural fibrinolytic therapy and video assisted thoroscopic surgery.

The marking rubric for part c) is included to aid candidates' future study.

**Marking Rubric for Part c):**

<b>Domain</b>	<b>Below Standard</b>	<b>At standard</b>	<b>Above standard</b>
<b>c.</b> <b>(3 therapeutic options listed below)</b> Tube thoracostomy  <b>(2 marks)</b>	Not mentioned  <b>0 marks</b>	Reasonable answer. Does not include likelihood of failure in this patient.  <b>0.5-1.0 marks</b>	Nuanced understanding including current practice of not using large bore ICCs and the likelihood of failure as a sole therapy in complex effusions.  <b>1.5-2.0 marks</b>
<b>c.</b> Intrapleural fibrinolytic/mucolytic  <b>(1.5 marks)</b>	Not mentioned  <b>0 marks</b>	Reasonable answer Mentions thrombolytic only  <b>0.5- 1.0 marks</b>	Nuanced understanding. Includes fibrinolytic/mucolytic combination and benefits.  <b>1.5 marks</b>
<b>c.</b> VATS  <b>(1.5 marks)</b>	Not mentioned  <b>0 marks</b>	Reasonable answer with some understanding of the indications for surgery  <b>0.5- 1.0 marks</b>	Nuanced understanding. Includes indications for surgical referral  <b>1.5 marks</b>

Angoff score for this SAQ	5.75
Highest candidate score achieved	8.75

## Question 6

A 50-year-old patient presents in septic shock with a 3-day history of fevers and cough one week after a trip to northern Australia. The blood cultures are positive for *Burkholderia pseudomallei*.

- a) List the major risk factors for this disease. (2 marks)
- b) List the radiological investigations important for this patient and give your rationale. (2 marks)
- c) Outline your management of this patient. (6 marks)

### Syllabus topic/section:

2.1.3 Sepsis and Infections / Rarer infections with specific ICU considerations melioidosis: L1

### Discussion:

Several candidates failed to answer at all or wrote very little. Marks were allocated to the specifics of *Burkholderia* infections; however, candidates are reminded that this entrance to transition year fellowship examination is based on objective demonstration of competence in clinical practice and general intensive care principles.

The general intensive care aspects of the patient presentation meant that candidates were expected to demonstrate knowledge of management of sepsis. Some candidates were able to score near pass marks by demonstrating they were aware of aspects of treatment of sepsis and septic shock as outlined in the stem. We recommend attempting every question as demonstrating competence in general intensive care principles are universal and more marks will potentially be gained as opposed to leaving a question unanswered.

Resuscitation of the septic shocked state, exploring potential source control/surveillance issues, antibiotic choice with rationale, and specific, relevant details of vasoactive drugs and fluid management was expected in part c) to demonstrate the standard required.

Angoff score for this SAQ	4.5
Highest candidate score achieved	8

## Question 7

- a) List the preconditions for performing neurological determination of death by clinical brain death testing. (6 marks)
- b) List the criteria for the circulatory determination of death in the context of organ donation. (4 marks)

### Syllabus topic/section:

2.1.15 Organ and tissue Donation in Intensive Care: / Neurological determination of death: L1

2.2.15 Organ and tissue Donation in Intensive Care / Circulatory determination of death: L1

### Discussion:

Part A was in general well answered and several candidates demonstrated a very high standard by taking a structured approach following the well-known and existing guidelines. A caution to candidates to be very specific in your answer e.g. detailing the value of electrolytes and temperature including a rationale with potential challenges rather than simply stating “normal electrolytes and normothermia”. Organ and tissue donation is a key core discipline area in Intensive Care and thorough explicit detail is required to demonstrate safe clinical practice.

Unfortunately, part B was poorly answered with the inability to describe the criteria for DCD highlighting a lack of familiarity with clinical experience and senior decision making. We recommend improving your answer by following the structure of the ANZICS guidelines. This topic is very clearly documented, and the answer template is a close ally of the source document.

Angoff score for this SAQ	6.15
Highest candidate score achieved	8

## Question 8

A 54-year-old patient with a functioning renal transplant was diagnosed with COVID-19 (PCR positive) 3 weeks ago and received Remdesivir as an outpatient.

The patient has deteriorated in recent days with an increasing oxygen requirement, worsening bilateral infiltrates and increasing shortness of breath. Repeat COVID PCR is positive.

- a) Discuss your interpretation of the positive COVID PCR result. (2 marks)
- b) Outline your initial antimicrobial strategy, include your rationale in your answer. (6 marks)
- c) Outline the management of the immunosuppression medications for the renal transplant. (2 marks)

### Syllabus topic/section:

2.1.3 Sepsis and Infections / Antimicrobial use in ICU: L1

2.1.5 Respiratory Intensive Care / Pneumonia: L1

### Discussion:

Part A: Virtually all of the candidates appreciated the value of the cycle time in distinguishing acute infection from delayed viral clearance. Most candidates did not clearly reject reinfection with COVID as a possibility. Reinfection within three weeks is very unlikely whereas prolonged viral shedding especially in the immunosuppressed is much more common and therefore difficult to determine whether active COVID infection is causing/ contributing to the current condition.

PART B: becoming familiar with the glossary of terms would have allowed more candidates to achieve a pass in this section. "Outline" requires more detail than a "List" question. An indication of early broad cover (ceftriaxone and azithromycin are not broad enough in the setting of immunosuppression) mentioning local microbiology resistance, dosage adjustments for a renal transplant and mentioning the use of oseltamivir would improve many candidates' answers.

Rationale in the answers was often missing or incomplete for example, stating "Voriconazole: fungal cover" is insufficient and attracted minimal marks. The better answer would justify the choice in terms of why it is superior to other agents, e.g. voriconazole: covers pulmonary aspergillosis better than echinocandins and less toxic to the transplant than amphotericin.

Part C: Candidates who prescribed steroids in underdosage, overdosage (unsafe practice) or did not provide dosages at all, lost marks as did those who ignored immunosuppressants such as tacrolimus and mycophenolate. A detailed knowledge of immunosuppressants was not required but demonstrating a familiarity with their presence in the ICU and how to approach management was required.

The complete answer contains these elements:

- Clarify usual regimen including doses.
- Liaise with renal transplant team to balance risk of immunosuppression in sepsis vs transplant risk.
- Continue steroids at higher doses – equivalent to dexamethasone 6 mg for 10 days.
- Tacrolimus often continued; mycophenolate often held.
- Monitor serum levels tacrolimus and cyclosporin in conjunction with transplant team.

Angoff score for this SAQ	5.1
Highest candidate score achieved	8

## Question 9

- a) Outline the effects of morbid obesity on respiratory physiology. (3 marks)
- b) With reference to the above effects, outline strategies for the invasive ventilation of a morbidly obese patient with severe ARDS. (7 marks)

### Syllabus topic/section:

2.1.16 Populations requiring special considerations in Intensive Care / Obese: L1

2.1.5 Respiratory Intensive Care / Mechanical ventilatory support: L1

### Discussion:

This question focused on respiratory physiology and invasive ventilation in the context of obesity. Candidates who were able to outline the effects of shunting and V:Q mismatch, negative effects of obesity on respiratory mechanics, aetiology of pulmonary hypertension and metabolic demands and oxygen consumption demonstrated that they had a sound grasp of respiratory physiology in its application to clinical practice.

Likewise detailing invasive ventilation strategies including specifics of protective ventilation, PEEP strategies, alterations to I:E ratios, recruitment manoeuvres, PIPs, plateau pressure adjustments, and alterations to proning techniques (amongst other possible headings) demonstrated familiarity with the acceptable standard of knowledge required of a transitional fellow for this topic.

Candidates would be advised to read the question and follow the instructions. Candidates who described airways, anatomical issues, intubation, tracheostomy, front of neck access, end of life planning and ECMO gained no marks as it did not address the question. Nominating ventilatory modes (e.g. APRV) without a rationale or justification of principles was not sufficient to pass.

The rubric is included to aid the candidate's future study.

**Marking Rubric:**

<b>Domain</b>	<b>Below standard</b>	<b>At Standard</b>	<b>Above standard</b>
<p>a. The effects of morbid obesity on respiratory physiology</p> <p><b>(3 marks)</b></p>	<p>Poor structure or narrow focus</p> <p><b>0 -1.0 marks</b></p>	<p>Logical. Covers at least the following topics with some relevant explanation: -Shunt and V/Q mismatch -Work of breathing -Disordered ventilation and pulmonary hypertension</p> <p><b>1.5-2.0 marks</b></p>	<p>Plus, addition of:  Covers the vast majority of areas in depth.  Specific focus on obesity</p> <p><b>2.5-3.0 marks</b></p>
<p>b. Strategies for invasive ventilation of a morbidly obese patient with ARDS</p> <p><b>(7 marks)</b></p>	<p>Poor structure or narrow focus</p> <p><b>0 - 3.0 marks</b></p>	<p>Logical. Covers at least the following topics with some relevant explanation: -Respiratory mechanics – PEEP setting and high-pressure settings - Proning - Permissive hypercapnia and other protective lung strategies including TV related to predicted BW</p> <p><b>3.5-4.5 marks</b></p>	<p>Plus, addition of Covers the vast majority of areas in some depth. Explores controversies and advantages or disadvantages of relevance to obesity</p> <p><b>5.0-7.0 marks</b></p>

Angoff score for this SAQ	5.1
Highest candidate score achieved	7.6

## Question 10

Compare and contrast acute and chronic lithium toxicity under the following headings:

- a) History, examination findings and biochemical abnormalities. (6 marks)
- b) Interpretation of lithium levels. (2 marks)
- c) Elimination and decontamination techniques. (2 marks)

### Syllabus topic/section:

2.1.14 Environmental Injuries and Toxicology in ICU / Poisoning and drug intoxication: L1

### Discussion:

Toxicology is a common presentation to the ICU and therefore a detailed knowledge is expected but was not demonstrated by many candidates in this question. We recommend candidates improve their knowledge of toxicology in future examination attempts. This question discriminated well between candidates. Successful answers were characterised by the following

- a) Sound knowledge base especially the core concepts of GI disturbance of acute lithium ingestion as opposed to the neurological disturbance of chronic lithium ingestion. More clinical exposure or greater in-depth reading is required for some candidates.
- b) Attention to the Glossary of terms. Some candidates made no distinction between acute and chronic lithium ingestion in their answers. This made it impossible to award full marks in a compare and contrast question.

Angoff score for this SAQ	4.1
Highest candidate score achieved	8

## Question 11

A 50-year-old patient is electively admitted to HDU following a bowel resection. They have longstanding tetraplegia with a neurological level of injury at C5.

- a) Outline the clinical signs of autonomic dysreflexia (also referred to as autonomic hyperreflexia). (3 marks)
- b) Outline strategies to prevent autonomic dysreflexia in this patient. (4 marks)
- c) Outline your management of autonomic dysreflexia in this patient. (3 marks)

### Syllabus topic/section:

2.1.13 Trauma Intensive Care / Spinal trauma: L1

2.1.8 Neurological Intensive Care / Spinal cord disorders: L1

### Discussion:

Candidates who had a good knowledge of longstanding tetraplegia and the corresponding pathophysiology did well. Candidates who had limited knowledge of the disorder but were able to apply general knowledge of management of spinal patients (e.g. bowel care and patency of IDC- very important in this patient population) were able to gain some marks.

The marking rubric is included to aid the candidate's future study

### Marking Rubric

Domain	Below standard	At standard	Above standard
a. Manifestations of autonomic dysreflexia  (3 marks)	Lacking detail; incorrect or missing parts of answer  0-1.0 marks	Good level of detail and understands clinical syndrome.  1.5-2.0 marks	Detailed, nuanced answer, understands variety of manifestations  2.5-3.0 marks
b. Prevention  (4 marks)	Inadequate detail/ superficial answer/incorrect answer  0-1.5 marks	Detailed response  Safe approach to prevention including consideration of positioning, analgesia, bladder and bowel care  2.0-2.5 marks	Contains applied clinical perspective.  Able to outline in detail prevention in context of patient described  3.0-4.0 marks
c. Treatment  (3 marks)	Inadequate detail/ superficial answer or incorrect  0-1.0 marks	Reasonable level of detail present  Safe approach to management including monitoring for complications  1.5-2.0 marks	Contains applied clinical perspective and well thought through, detailed approach to management  2.5-3.0 marks

Angoff score for this SAQ	4.65
Highest candidate score achieved	8.5

## Question 12

You are working in a regional intensive care unit where a severe cyclone is predicted to occur in the next 24 hours and isolate the region. The hospital disaster plan is to shelter in place. Outline your planning specific to the ICU in the lead up to the event.

### Syllabus topic/section:

2.3.1 Leader and Manager / Intensive care administration: L1

### Discussion:

The CICM international fellowship covers many diverse regions and geography. An awareness of the different environments and challenges in which we practice intensive care is required.

To display the standard of competence required of a transitional fellow, candidates are reminded to provide an organised answer, use headings and subheadings, group common themes together and provide sufficient detail. The better answers understood that ICU is not a standalone service and is part of the hospital therefore local and state hospital policies apply. Many candidates forgot to consider the implications of communications breakdown, and the effects of this on the ICU, the hospital and families. The superior answers detailed staffing, energy supplies, equipment, drugs and oxygen requirements.

Angoff score for this SAQ	4.5
Highest candidate score achieved	6.5

### Question 13

- a) Explain the medical management of a patient with a confirmed Type B aortic dissection. (6 marks)
- b) List the indications for consideration of surgical management of this condition. (4 marks)

#### Syllabus topic/section:

2.1.4. Cardiovascular Intensive Care / Aortic aneurysm and dissection: L1

#### Discussion:

This question focused on the medical management of Type B Aortic dissection. Candidates were therefore expected to provide a detailed and clear rationale of therapies rather than broad generic resuscitation answers. Haemodynamic plans often lacked a clear stepwise approach and rationale for their therapies. A good answer required recognition of important management principles beyond purely pharmacological hemodynamic management such as disposition, involvement of other teams (Interventional Radiology/surgery), type of vascular access and a structured approach to monitoring for complications of dissection involving multiple relevant organs/organ systems.

For part B, most candidates recognised 2-3 clinical reasons for escalation to surgical management. The better candidate was able to mention both clinical and radiological indications.

Angoff score for this SAQ	5.35
Highest candidate score achieved	7.75

## Question 14

Discuss the features that would help differentiate a clinically relevant bacteraemia from a contaminated blood culture.

### Syllabus topic/section:

2.1.3 Sepsis and infections / Sepsis and septic shock: L1

### Discussion:

This question on a core topic was well answered overall. Less successful answers veered towards exploring the presence of sepsis rather than the *differentiation* of true culture positive result from a contaminant. Answers in a tabular form could have provided clarity. Mention of particulars of CFUs, stating which organisms are more likely to be contaminants, comments on reproducibility of results and timing of cultures are features displaying the acceptable standard of knowledge required.

Angoff score for this SAQ	5.6
Highest candidate score achieved	8.25

## Question 15

### Question 15.1 ECG 1

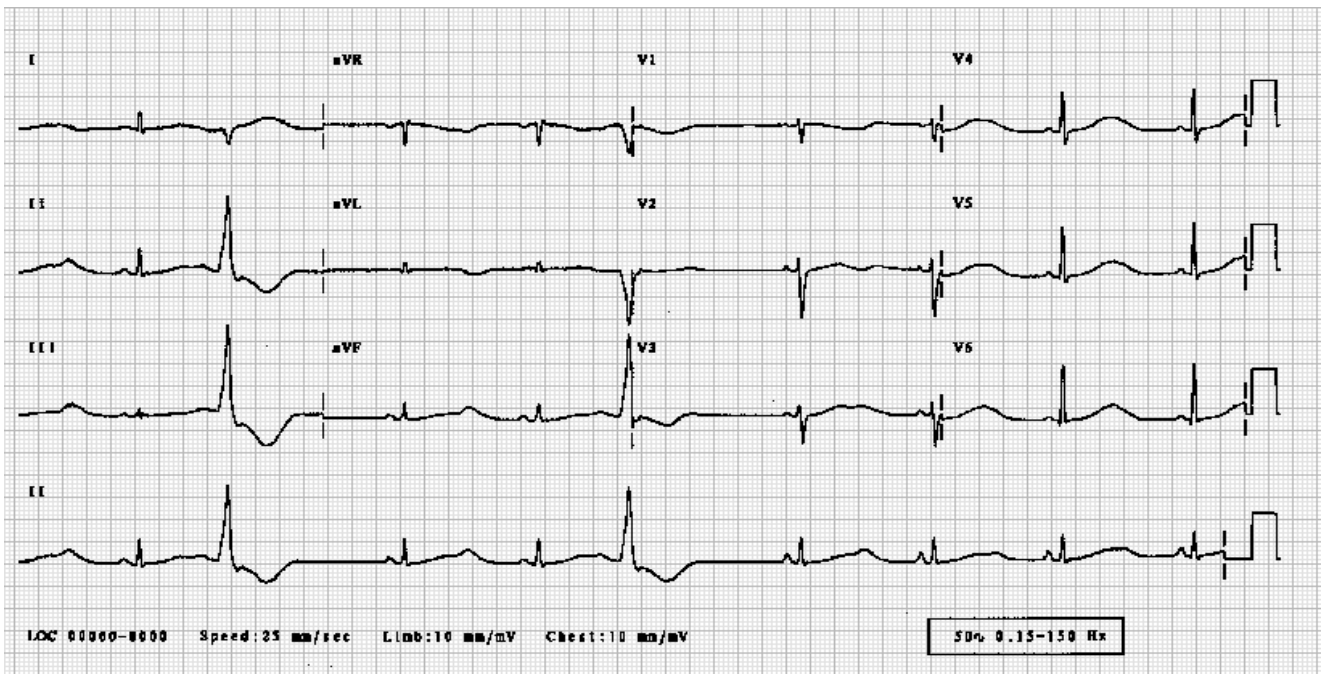


70-year-old patient with exercise intolerance

15.1 Interpret the ECG.

(1 mark)

### Question 15.2 ECG 2



15.2

a) Interpret the ECG.

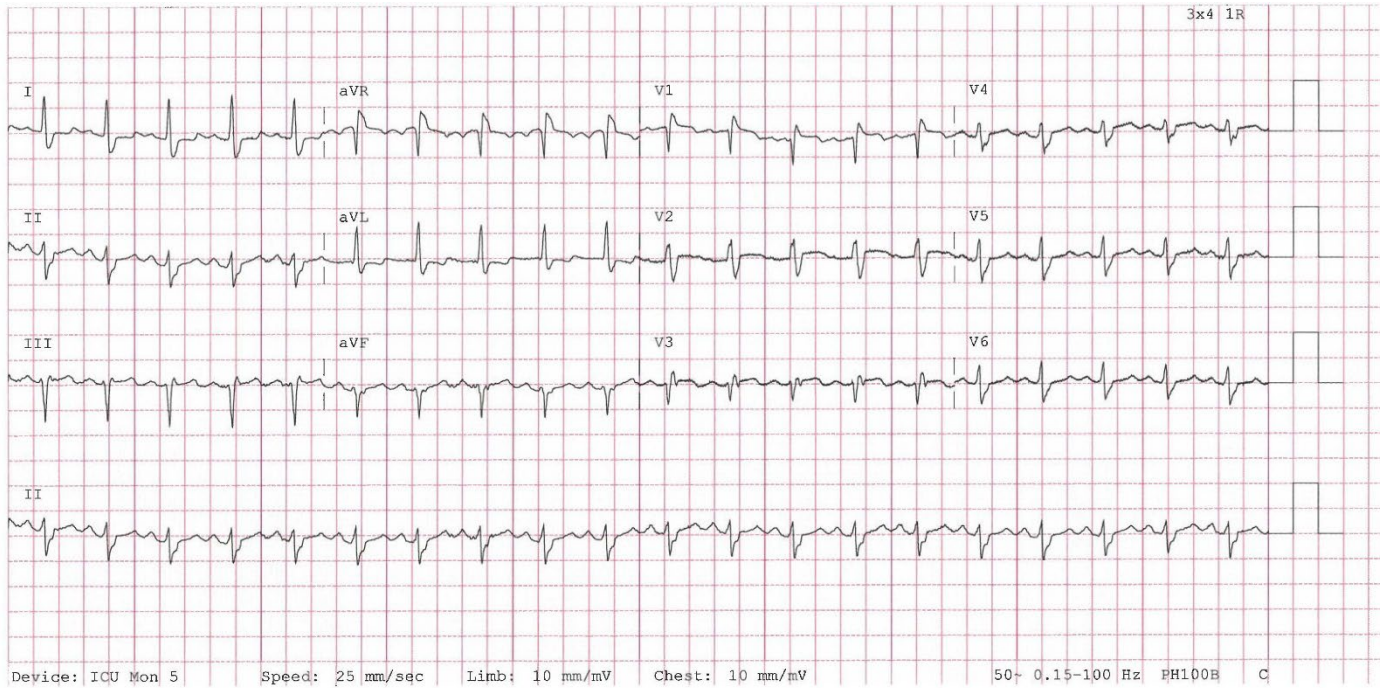
(0.5 marks)

b) List **five** diagnoses which would cause the findings on this ECG.

(2.5 marks)

**Question 15 Continued on Next Page**

Question 15.3 ECG 3

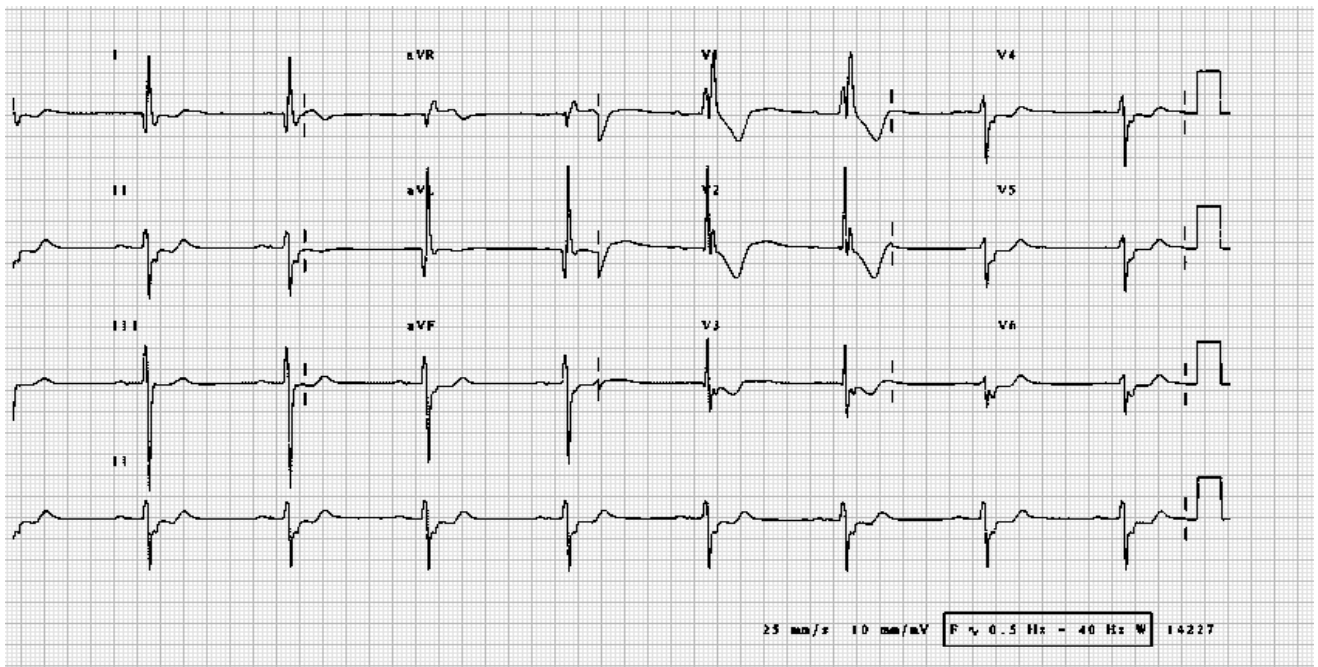


A 48-year-old patient presents with breathlessness.

15.3 List the abnormalities and give the most likely diagnosis.

(3 marks)

15.4 ECG 4



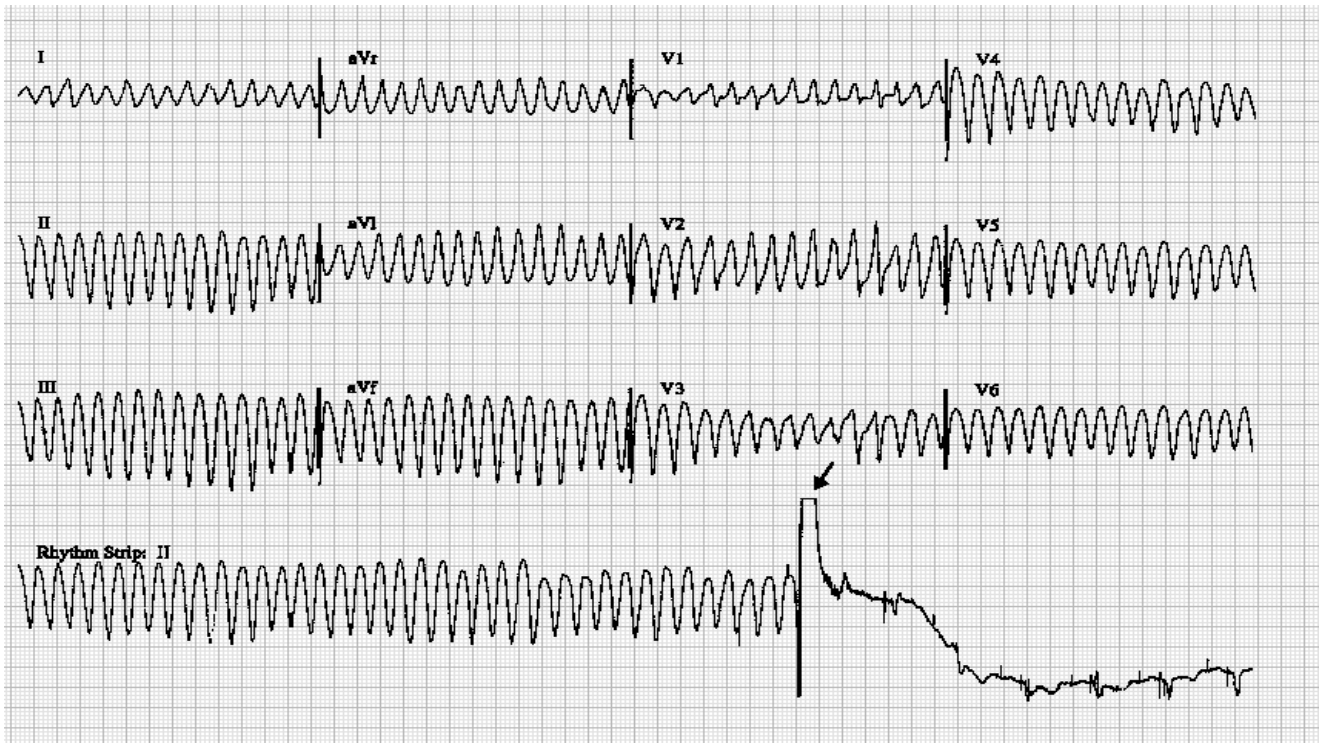
An 80-year-old patient presents with syncope.

15.4 Interpret this ECG.

(1.5 marks)

Question 15 Continued on Next Page

Question 15.5 ECG 5



15.5 Explain the ECG and rhythm strip.

(1.5 marks)

**Syllabus topic/section:**

2.1.4 Cardiovascular Intensive Care /Interpretation of the electrocardiogram: L1

**Discussion:**

Overall answered well. Candidates are encouraged to practice interpreting ECGs of common or potentially life-threatening conditions where ECGs are key to diagnosis.

Angoff score for this SAQ	6.45
Highest candidate score achieved	9.25

## Question 16

Regarding myxoedema coma:

- a) Outline the clinical presentation. (3 marks)
- b) List the relevant laboratory investigations with the expected findings. (2 marks)
- c) Outline the key principles of management. (5 marks)

### Syllabus topic/section:

2.1.9 Endocrine Intensive care / Acute Thyroid crises: L1

2.1.9 Endocrine Intensive care / Other thyroid disorders: L2

### Discussion:

This was a simple didactic question. In general, the management section was dealt with well. Many candidates could have been more successful in demonstrating the standard required if detailed and structured answers for the questions on clinical presentation and investigations were given.

For example, a structured answer for part A detailing neurological, respiratory, GIT and cardiovascular signs and symptoms, was required. For Part B, the laboratory investigations required detailing the findings on thyroid function tests with the corresponding laboratory profile (normocytic anaemia, elevated CK, hyponatraemia's, hypoglycaemia, hypercapnia and respiratory acidosis).

The better answers in part C included management of precipitating factors and rationale for use of T3 versus T4.

The rubric is included to aid the candidate's future study.

## Marking Rubric

Domain	Below standard	At standard	Above standard
a) Clinical presentation  <b>(3 marks)</b>	Absent or incorrect information  <b>0-1.0 marks</b>	List of symptoms or signs without systemic approach or structure  Must include symptoms of at least 3 of the following Systems: cardiovascular, neurological, respiratory or temperature changes.  <b>1.5-2.0 marks</b>	Plus, addition of Systematic approach to clinical manifestations  Must include cardiovascular, neurological, respiratory and temperature for full marks.  <b>2.5-3.0 mark</b>
b) Laboratory results  <b>(2 marks)</b>	Absent or incorrect information  <b>0-0.5 marks</b>	TSH and T3/T4 Results  <b>1.0 mark</b>	TSH and T3/T4 Results + Other laboratory profile  <b>1.5-2.0 marks</b>
c) Key Principles of Management  <b>(5 marks)</b>	Basic Principles of treatment. Lack of details and poor structure <b>Must Include:</b> -Supportive treatment + -Medication therapy without reasoning or incomplete  <b>0-2.0 marks</b>	Basic principles of treatment <b>Must Include:</b> -Supportive treatment + -Medication therapy and reasoning + -Treatment of precipitant  <b>2.5-3.5 marks</b>	In depth principles of treatment <b>Must Include:</b> -Supportive treatment + -Medication therapy and reasoning + -Treatment of precipitant  <b>4.0-5.0 marks</b>

Angoff score for this SAQ	5.55
Highest candidate score achieved	7.5

### Question 17

- a) Outline the pathophysiological effects of sepsis on host immunity, coagulation and endothelial function. (3 marks)
- b) Discuss the challenges of diagnosing and managing sepsis in the elderly. (7 marks)

#### Syllabus topic/section:

2.1.3 Sepsis and Infections: / Sepsis and septic shock: L1

2.1.16 Populations requiring special considerations in Intensive Care / Frail and Aged: L1

#### Discussion:

The question was targeted towards the effects of sepsis, explicitly regarding host immunity, coagulation and endothelial function. Despite this, some candidates did not comment on the specifics of these headings. Candidates who were able to explain the pathophysiology and give a clinical example did well.

E.g. Endothelial function is disrupted by circulating cytokines and other mediators (NO) leading to increased vascular permeability and coagulation disorders, clinically evidenced by oedema, poor tissue perfusion, microvascular thrombosis, bleeding and vasoplegia.

Candidates are reminded to read the question carefully: many missed the word “elderly” in part B and gave a generic answer not specific to this population. Heading used could include, but not limited by, short discussions on atypical presentations, role of co-morbidities, immunosuppression, cognitive impairment, polypharmacy effect, social issues and physiological changes affecting treatment responses. There are other headings which would also demonstrate competency in this section of the syllabus.

The marking rubric is included to aid the candidate's future study.

#### Marking Rubric:

Domain	Below standard	Standard	Above standard
a) Pathophysiology of sepsis  (3 marks)	Superficial discussion of <= 3 areas of pathophysiology  <b>0-1.0 mark</b>	discuss all three areas of pathophysiology in limited detail.  <b>1.5 marks</b>	Plus, addition of Key points of all 3 areas of pathophysiology including activation of cytokines  <b>2.0-3.0 marks</b>
b) Challenges of diagnosis and management in the elderly  (7 marks)	Superficial description or narrow focus <b>missing</b> either atypical presentation, or comorbidities, or polypharmacy or age related physiological changes  <b>0-3.0 marks</b>	Reference to frailty, physiology and end-of-life decisions with examples  <b>3.5-4.5 marks</b>	Plus, addition of:  Detailed description  Most key areas discussed in detail with most of aforementioned topics covered  <b>5.0-7.0 marks</b>

Angoff score for this SAQ	4.45
Highest candidate score achieved	6.5

## Question 18

Regarding new-onset atrial fibrillation in a patient with sepsis in the ICU:

- a) List **six** risk factors for new-onset atrial fibrillation in the critically ill patient who has NOT had cardiac surgery. (2 marks)
- b) Discuss strategies for the reversion of rhythm and rate in new-onset atrial fibrillation in the critically ill. (8 marks)

### Syllabus topic/section:

2.1.3 Sepsis and Infections: L1

2.1.4 Cardiovascular Intensive Care / Cardiac arrhythmias: L1

### Discussion:

Candidates are reminded to read the question carefully: the question asked for a discussion of strategies for rate AND rhythm. Many candidates read the question as rate OR rhythm.

Candidates are reminded to become familiar with the glossary of terms. "Discuss" requires a detailed articulation of the subject. Good answers had details, discussed advantages and disadvantages of each strategy, and included precise answers of non-pharmacological strategies that were not just limited to DC cardioversion. For instance, a discussion of strategies to modulate sympathetic tone such as withdrawal of beta sympathomimetic agents, e.g., cease or reducing adrenaline/ dobutamine, weaning salbutamol as able, use of analgesia and sedation, normalising CO<sub>2</sub>, aiming for euvolaemia and minimising rapid fluid shifts displayed the standard required and was rewarded.

Angoff score for this SAQ	6.2
Highest candidate score achieved	7.5

### Question 19

- a) List reasons that a randomised controlled trial may be stopped early. (4 marks)
- b) Discuss the potential sequelae of stopping a trial early. (6 marks)

#### Syllabus topic/section:

2.5.1 Research and evidence-based practice in intensive care / Research methods for randomised trials and aspects of statistics.

#### Discussion:

Most candidate had a reasonable grasp of the topic, however answers suffered from a lack of content. The better answers gave succinct explanations of unplanned vs planned reasons including bias, underpowering, predefined criteria for conclusion of a study, interim review and analysis.

Many answers to Section b) were not of an acceptable standard due to failure to demonstrate knowledge and content. This is an area fundamental to the understanding of trials. Explanations would have included, but not limited to, harm vs. benefit, future curtailment of research and clinical opportunities as well as limitations of various types of data collected.

Angoff score for this SAQ	4.15
Highest candidate score achieved	6

## Question 20

Discuss the role of mechanical cardiopulmonary resuscitation (CPR) devices (LUCAS<sup>o</sup> or CORPULS<sup>o</sup>). Answer under the following subheadings.

- a) The rationale for their use. (1 mark)
- b) Their advantages and disadvantages compared with conventional CPR. (5 marks)
- c) Evidence for these devices in both out of hospital cardiac arrest (OHCA) and in-hospital cardiac arrest (IHCA). (2 marks)
- d) Your clinical practice with rationale. (2 marks)

### Syllabus topic/section:

2.1.4 Cardiovascular Intensive Care / Cardiopulmonary resuscitation: L1

### Discussion:

The majority of candidates were able to sensibly discuss this SAQ with a broad approach gaining the most marks. Answers which did not display the standard required failed to provide a valid rationale and detailed overview of advantages and disadvantages. Candidates are discouraged from “making up/ guessing” evidence to compensate for knowledge gaps. “Advantages” and “rationale” are two different questions and should be answered as such.

The answer to “clinical practice with rationale” needs more than a simple statement to gain the full marks. Candidates are advised to state WHEN they would use this, for WHICH patients, commenting on relative or absolute contraindications and indications. Detailing individual variations of practice and justifying the rationale for practice change will also demonstrate a mature clinical practice to the standard required.

Angoff score for this SAQ	5.45
Highest candidate score achieved	8.25

## Question 21

21.1 A 51-year-old patient presents with a decreased conscious state, Glasgow Coma Scale (GCS) 12, confusion and myoclonus. The patient is on treatment for a seizure disorder. The CT brain scan shows no acute intracranial abnormality.

The investigations are as follows:

Parameter	Patient Value	Adult Normal Range
Sodium	138 mmol/L	135 – 145
Potassium	4.1 mmol/L	3.5 – 5.2
Bicarbonate	18 mmol/L*	22 – 32
Urea	14.2 mmol/L*	3.0 – 8.0
Creatinine	210 mmol/L*	45 – 90
Bilirubin	54 mmol/L*	< 20
Alanine transferase	2710 U/L*	< 35
Aspartate transferase	1365 U/L*	< 35
Alkaline phosphatase	103 U/L	30 – 110
g-Glutamyl transferase	67 U/L*	< 40
Albumin	37 g/L	35 – 50
Protein	61 g/L	60 – 80
Ammonia	156 mmol/L*	< 50

- a) List **four** possible causes of the hyper-ammonaemia in this patient.

(4 marks)

*Question 21 Continued on Next Page.*

21.2 The following blood results were obtained from a previously fit and well patient undergoing a prolonged respiratory wean following an episode of severe community acquired pneumonia one month earlier.

Parameter	Patient Value	Adult Normal Range
Haemoglobin	78 g/L*	115 – 155
Haematocrit	0.20*	0.35 – 0.45
Mean Cell Volume	85 fL	80 – 99
Mean Cell Haemoglobin	28 pg	27 – 33
White Cell Count	15.3 x 10 <sup>9</sup> /L*	4.0 – 11.0
Neutrophils	12.0 x 10 <sup>9</sup> /L*	1.9 – 7.5
Platelets	758 x 10 <sup>9</sup> /L*	150 – 400
Reticulocyte count	40 x 10 <sup>6</sup> /L	30 – 130
Iron	8 mmol/L*	10 – 30
Ferritin	798 mg/L*	20 – 450
Transferrin saturation	0.10*	0.15 – 0.50
Vitamin B <sub>12</sub>	700 pmol/L	200 – 900
Folate	15 nmol/L	> 7
C-reactive protein	210 mg/L*	< 8
Albumin	25 g/L*	35 – 50

a) Interpret the abnormal results and justify your reasoning.

(4 marks)

21.3 With respect to the coagulation status of a third trimester pregnant patient compared to that in the non-pregnant state, indicate the change you would anticipate for each test listed below:

- A) Platelet count.
- B) Factor V, VII, IX, X levels.
- C) Fibrinogen level.
- D) Protein S level.

(2 marks)

**Syllabus topic/section:**

- 2.1.6 Gastrointestinal Intensive Care / Acute hepatic failure: L1
- 2.1.5 Renal Intensive Care / Acid base and electrolyte disorders: L1
- 2.1.11 Haematological and Obstetric Intensive Care / Anaemia: L1
- 2.1.12 Obstetric Intensive Care: / Physiological change related to pregnancy: L1

**Discussion:**

This was a repeat data interpretation question. Surprisingly the pass rate was low for this question. Lower scores were associated with not being specific about causes of hyperammonemia, but rather listed causes of hepatic dysfunction. A lack of synthesis of findings was also a feature of the answers failing to reach the standard required.

Angoff score for this SAQ	6.7
Highest candidate score achieved	9.25

## Question 22

For each of the following syndromes list the clinical findings and **one** likely mechanism of injury:

- a) Anterior spinal cord syndrome. (2.5 marks)
- b) Hemicord/ “Brown-Séguard” syndrome. (2.5 marks)
- c) Lateral medullary syndrome. (3 marks)
- d) Central cord syndrome. (2 marks)

### Syllabus topic/section:

2.1.13 Trauma Intensive care / Spinal Cord injury: L1

### Discussion:

This is a repeat question which overall was moderately well answered by most candidates. Clarity and specificity are required when describing neurological findings. Correctly identifying contralateral vs ipsilateral findings and detailing mechanisms of injury is important in this question. Lower marks were related to omission of bowel/bladder clinical findings. Candidates are advised to revise lateral medullary and central cord syndrome in their preparation.

Angoff score for this SAQ	5.8
Highest candidate score achieved	9.2

### Question 23

You are asked to review a 32-year-old patient who has acutely deteriorated, 3 hours post normal vaginal delivery after a prolonged labour.

She is 40<sup>+4</sup> weeks gestation with an uncomplicated pregnancy and no known past medical history.

On examination her peripheral oxygen saturations are 78% on a 15L/min non-rebreather mask oxygen, respiratory rate of 32 breaths/min and blood pressure 80/46 mmHg.

- a) List the **six** most likely differential diagnoses for her deterioration. (3 marks)
- b) For each listed differential diagnosis, outline the clinical findings and the relevant investigations that would support the diagnosis. You may tabulate your answer. (7 marks)

#### Syllabus topic/section:

2.1.12 Obstetric Intensive Care / Special considerations when managing the obstetric patient: L1

2.1.12 Obstetric Intensive Care / Amniotic fluid embolism: L1

2.1.5 Respiratory Intensive Care / Pulmonary embolism: L1

#### Discussion:

This was a core intensive care topic where some candidates achieved the standard required to a very high degree. Answers were rewarded for demonstrating depth of understanding of assessment for a differential diagnosis. Many candidates could have improved marks by articulating helpful Echo and CXR findings which are highly discriminatory investigations.

Precise terminology gained marks, for example, describing echo findings such as LVEF parameters for peripartum cardiomyopathy, as well as typical patterns on ECGs for amniotic fluid/ pulmonary embolism. Some answers were clearly rushed; candidates are reminded to proportion their time wisely.

Angoff score for this SAQ	5.55
Highest candidate score achieved	8

## Question 24

A 54-year-old patient is admitted to ICU following cardiac surgery. Six hours into the admission the patient has normal cardiac indices, but the lactate continues to rise (now 5.4 mmol/L).

- a) List **four** common causes of hyperlactatemia in this clinical scenario. (2 marks)
- b) Outline features on assessment which would help distinguish between these causes. (8 marks)

### Syllabus topic/section:

2.1.4 Cardiovascular Intensive Care/ Shock: L1

2.1.18 Perioperative Issues in Intensive Care: / Cardiac surgery L1

### Discussion:

Candidates who followed the glossary instructions, listing common causes, outlining in part b) how **those** four causes (in part a) could be distinguished and having a structured answer using the glossary of terms for assessment in part B did well. The SAQ asked for common causes. Thiamine deficiency or metformin use is unusual 4 hours post cardiac surgery and was marked accordingly. Given the cardiac indices are normal, tamponade and cardiogenic shock are less appropriate.

The better answers considered microvascular dysfunction, post bypass syndrome, hypoxaemia, severe anaemia, causes of regional tissue ischemia, or inadequate lactate clearance such as hepatic injury ( eg with acute right heart failure), or metabolic aetiology of lactate generation such as catecholamine use which increases glycolysis.

Answers to part b) presenting the assessment of a raised lactate *without* relating back to their stated differential did not address the question as asked. These candidates could have improved their answer by reading the question and following the directions. Some candidates listed general historical and clinical features and investigations with no reference to how they could be used to *distinguish* between these causes.

For example, "long bypass time" without including any relevance to the listed causes, would have been improved by including the rationale "long bypass time with resultant microvascular dysfunction, cytokine activation and vasodilation increasing the risk of post bypass syndrome/SIRS."

Angoff score for this SAQ	4.45
Highest candidate score achieved	7.625

## Question 25

A 55-year-old patient with insulin dependent diabetes and diabetic nephropathy (baseline Cr ~410  $\mu\text{mol/L}$ ), is admitted to ICU unwell with vomiting for the last 5 days.

The patient's biochemistry is below.

Parameter	Patient	Normal Adult Range
pH	7.05*	7.35-7.45
pCO <sub>2</sub>	15/ 2.0* mmHg/kPa	36-45
pO <sub>2</sub>	118/ 15.7* mmHg/kPa	85-110
HCO <sub>3</sub>	4 mmol/L *	21-28
Na	145 mmol/L	135-145
K	5.9 mmol/L*	3.5-5.2
Cl	108 mmol/L	95-110
Urea	46 mmol/L*	3-8
Creatinine	806 $\mu\text{mol/L}$ *	60-110
Blood glucose	55 mol/L*	3-5.4
Measured osmolality	406mmol/L*	275-295
Lactate	7.6 mmol/L*	<2

- Explain the abnormalities and show your calculations. (2 marks)
- Calculate the corrected sodium and osmolar gap and show your calculations. (2 marks)
- List the likely aetiologies of these abnormalities. (2 marks)
- Explain the effect of albumin with respect to the anion gap. (1 mark)
- Outline the management of the blood glucose and osmolality over the first 2 days. (3 marks)

### Syllabus topic/section:

2.1.9 Endocrine Intensive Care / Diabetes Mellitus: L1

### Discussion:

In general candidates were familiar with the calculations, were able to recognise HHS/ DKA and describe management.

It is helpful to show formulae that are being used (so if the calculations are incorrect, marks can be allocated for the principles), provide specifics in answers to management questions, and provide lists relevant to the scenario and explaining why.

For instance, specifics of fluid resuscitation, the role and dosage of insulin use, resuscitation and metabolic targets to achieve were outlined in the more successful answers.

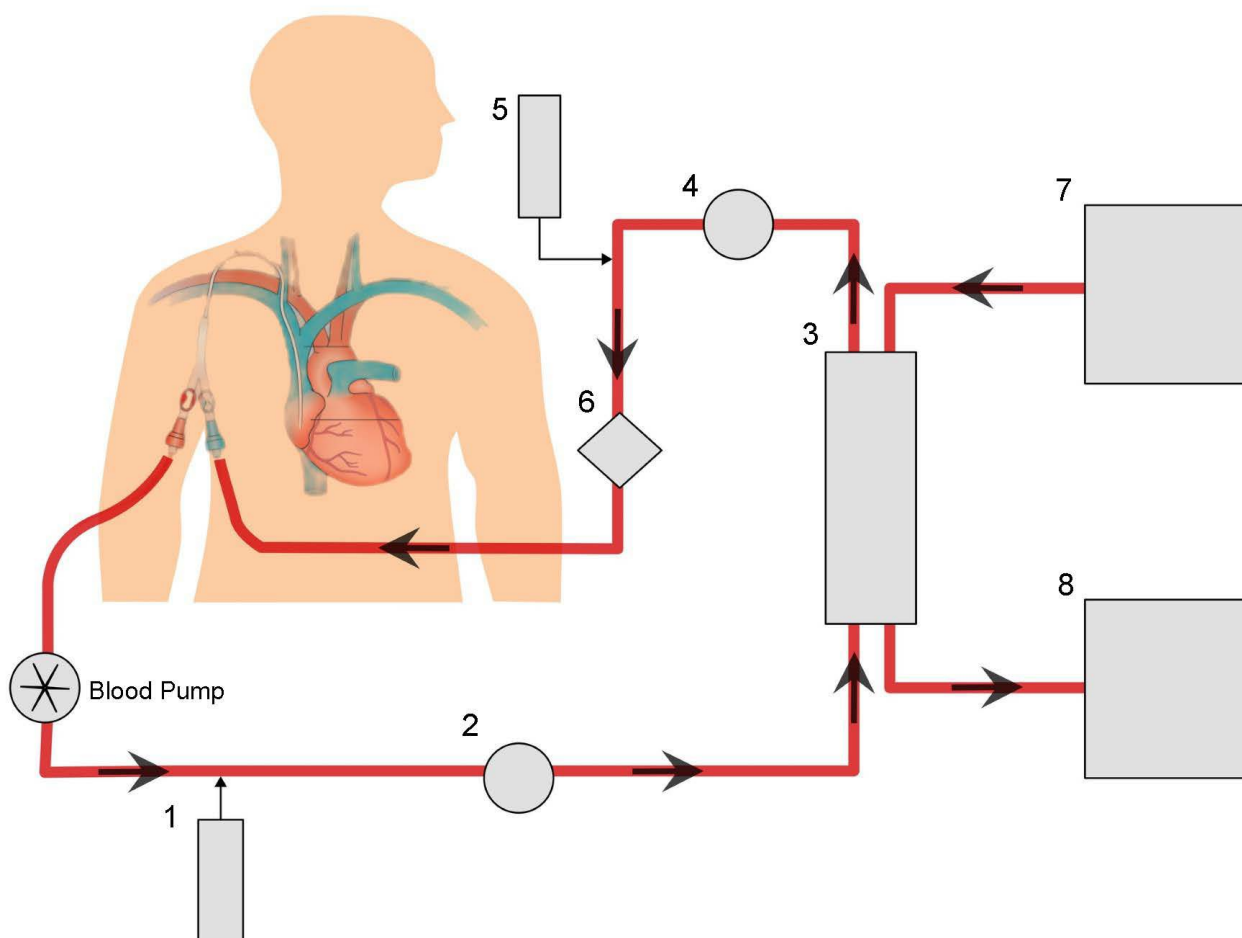
Angoff score for this SAQ	6.4
Highest candidate score achieved	8.75

**Question 26**

26.1 With respect to renal replacement therapy (RRT) in the ICU:

a) Below is a diagram of a citrate dialysis circuit. Label the components marked 1-8

(2 marks)



b) Discuss **two** non-pharmacological methods to optimize circuit life

(2 marks)

26.2 With respect to citrate toxicity in an awake patient:

a) List the clinical features and biochemical findings.

(3 marks)

b) Outline your specific management.

(3 marks)

**Syllabus topic/section:**

2.1.7 Renal Intensive Care / Renal Replacement Therapy: L1

**Discussion:**

Generally, candidates answered this question adequately, although there was an expectation of a higher standard of answer given this very common therapy and clinical scenario. Candidates are reminded that according to the glossary, "Discuss" should include information about key principles, potential controversies and any relevant advantages and disadvantages in the answer.

Angoff score for this SAQ	5.55
Highest candidate score achieved	7.94

## Question 27

A 40-year-old patient is admitted to ICU with hypoxia, and septic shock.

Blood cultures are positive for Group A Streptococcus (GAS).

- a) Outline the invasive GAS pathologies that should be considered in this patient. (5 marks)
- b) Discuss the infection-specific treatment, assuming resuscitation measures are covered. (5 marks)

### Syllabus topic/section:

2.1.3 Sepsis and Infections / Rarer infections with specific ICU considerations: Streptococcal Toxic Shock: L1

### Discussion:

Generally, this question was answered well. Candidates who did not demonstrate the standard required provided answers that were very brief, without addressing core concepts such as source control and mentioning antibiotics in only minimal detail.

A discussion of the precise antibiotic regimen with dosages, immunoglobulin therapy with rationale and addressing steroid controversy is required to show competence in managing potentially life-threatening manifestations such as necrotising fasciitis, toxic shock syndrome, severe puerperal sepsis and necrotising pneumonias as well as the less common suppurative pharyngitis, septic arthritis and meningitis.

The marking rubric is included to aid the candidate's future study.

### Marking Rubric:

Domain	Below standard	Standard	At standard
Clinical          <b>(5 marks)</b>	TSS and necrotising fasciitis outlined in reasonable detail but very limited description of wider/other diseases       <b>0-2.0 marks</b>	Outlines the features of TSS and necrotising fasciitis in good detail.  Mentions at least 3 other syndromes or organ specific sites in less detail.  Some differentiation between invasive and non-invasive infection or no mention of superficial infections  <b>2.5 - 3.0 marks</b>	Good outline of most manifestations with details of TSS and necrotising fasciitis. Good structure and excellent description of severity differentiating and defining signs or symptoms       <b>3.5 -5.0 marks</b>
Treatment       <b>(5 marks)</b>	No mention of source control or immunoglobulin Or superficial or unjustified antibiotic choice    <b>0-2.0 marks</b>	Must mention: Source control, IVIG (even if they would not use it), Antibiotics for strep and toxin production Describes risks   <b>2.5 -3.0 marks</b>	Detailed answer with great detail, doses and more nuanced approach depending on disease, severity and infection site      <b>3.5 -5.0 marks</b>

Angoff score for this SAQ	5.05
Highest candidate score achieved	8.75

## Question 28

Discuss your approach to prognostication of neurological outcome in adult ICU patients after successful cardiovascular resuscitation following out of hospital cardiac arrest. Your answer should include the following headings:

- a) Guidelines. (2 marks)
- b) General approach and clinical factors. (3 marks)
- c) Investigations, and their role in prognostication. (5 marks)

### **Syllabus topic/section:**

2.1.8 Neurological Intensive Care / Hypoxic Ischaemic Encephalopathy: L1

### **Discussion:**

Candidates demonstrated the standard required if they addressed their answer as per the 3 parts of the question, showed a clearly thought-out process of neuroprognostication and acknowledged a multi-modal approach with repeated examination and appropriate timing.

Candidates who were not familiar with any guidelines or able to reference them and/or were unclear regarding clinical features, relevant investigations and timing of neuroprognostication indicators did not demonstrate the standard required and marks were allocated accordingly.

***Question 28 Continued on Next Page.***

## Marking Rubric:

	<b>Below standard</b>	<b>At standard</b>	<b>Above standard</b>
Guidelines  <b>(2 marks)</b>	Specific mention of $\geq 1$ relevant guideline (NCCS, ILCOR or ESICM), but not linked to rest of the answer  <b>0-0.5 marks</b>	Specific reference to $\geq 1$ relevant guideline, including how it informs the answer  <b>1.0 mark</b>	As per standard AND some critical discussion  <b>1.5-2.0 marks</b>
General approach and clinical factors  <b>(3 marks)</b>	Poorly structured with minimal discussion about general approach;  <i>omits timing</i> of assessment; <i>or</i> does not acknowledge <i>prognostic uncertainty</i>  <b>0-1.0 marks</b>	Appropriate structure. Includes timing, AND integration of multiple parameters OR Favourable + Poor indicators  <b>1.5-2.0 marks</b>	Includes Timing AND Integration of multiple parameters AND favourable + poor indicators AND Prognostic uncertainty / Values-based care  <b>2.5-3.0 marks</b>
Investigations and role in prognostication  <b>(5 marks)</b>	Incomplete list of basic investigations (CT, MRI, electrophysiology [EEG and/or N20], and laboratory investigations) or minimal description of basic interpretation of chosen investigations  <b>0-2.0 marks</b>	Complete list as per <b>below standard</b> and description of key prognostic features of each investigation  <b>2.5-3.5 marks</b>	As per standard with detailed description including timing, reliability and controversies  <b>4.0-5.0 marks</b>

Angoff score for this SAQ	5.55
Highest candidate score achieved	7.75

## Question 29

- a) Outline your assessment of constipation in the critically ill patient. (4 marks)
- b) Discuss the pharmacological and non-pharmacological management options for constipation in a critically ill patient. (6 marks)

### Syllabus topic/section:

2.1.6 Gastrointestinal Intensive Care /Gastro-intestinal motility syndromes: L2

2.1.21 Applied Pharmacology in Intensive Care / Gastrointestinal, Aperients and Laxatives

### Discussion:

Candidates demonstrated the standard required when they used the glossary definition of “assessment” - (i.e. history, examination and investigations) to formulate their answer. A list of clinical signs and investigations, without contextualising them with the relevant clinical findings, did less well. For example, “PR” should be qualified by considering the findings of the examination and how it will change or compliment management.

The glossary of terms is also a guide to the depth of information required. Part B is a “discuss” question and therefore candidates who wrote a list of management options without a discussion of the risks, benefits, contraindications and patient cohort applications achieved less marks. Candidates who were able to state the rationale for treatments, which strategies they would employ first and why, demonstrated the required standard in this area.

Angoff score for this SAQ	5.35
Highest candidate score achieved	8.5

### Question 30

30.1 A 44-year-old patient is admitted post thyroidectomy for Graves' disease. Seven years ago, the patient had gastric bypass surgery for obesity. Shortly after admission, the serum biochemical findings are:

Parameter	Patient Value	Adult Normal Range
Sodium	136 mmol/L	135 – 145
Potassium	5.0 mmol/L	3.5 – 5.0
Chloride	103 mmol/L	95 – 105
Bicarbonate	23.0 mmol/L	22.0 – 26.0
Glucose	5.8 mmol/L	3.5 – 6.0
Urea	5.5 mmol/L	3.0 – 8.0
Creatinine	80 µmol/L	45 – 90
Magnesium	0.60 mmol/L*	0.75 – 0.95
Albumin	35 g/L	35 – 50
Protein	74 g/L	60 – 80
Total bilirubin	12 µmol/L	< 26
Aspartate aminotransferase (AST)	34 U/L	< 35
Alanine aminotransferase (ALT)	40 U/L*	< 35
Alkaline phosphatase (ALP)	188 U/L*	30 – 110
γ-Glutamyl transferase (GGT)	45 U/L*	< 40
Calcium corrected	1.80 mmol/L*	2.12 – 2.62
Phosphate	0.7 mmol/L*	0.8 – 1.5

- a) List **two** potential explanations for the abnormalities seen. (1 mark)
- b) List the clinical features which may be associated with these abnormalities? (2 marks)
- c) Outline your specific management of the biochemical abnormalities. (3 marks)

**SAQ 30 Continued on Next Page**

30.2 A 27-year-old patient presents with the following laboratory results after a prolonged sub-acute illness.

Parameter	Patient Value	Adult Normal Range
Sodium	132 mmol/L*	135 – 150
Potassium	2.2 mmol/L*	3.5 – 5.5
Chloride	94 mmol/L*	100 – 110
Bicarbonate	28 mmol/L*	22 – 27
Urea	8.3 mmol/L*	3.0 – 8.0
Creatinine	236 µmol/L*	70 – 120
Total Calcium	5.04 mmol/L*	2.15 – 2.60
Ionised Calcium	2.6 mmol/L*	1.1 – 1.3
Magnesium	0.7 mmol/L	0.7 – 1.1
Phosphate	1.09 mmol/L	0.70 – 1.40
Albumin	37 g/L	35 – 47
Total Bilirubin	8 µmol/L	4 – 20
g-Glutamyl transferase	105 U/L*	0 – 50
Alkaline phosphatase	263 U/L*	40 – 110
Alanine transferase	76 U/L*	< 40
Aspartate transferase	48 U/L*	< 40

- a) List the ECG changes associated with the most striking biochemical abnormalities. (1 mark)
- b) List **three** differential diagnoses. (1.5 marks)
- c) List **three** specific management strategies. (1.5 marks)

**Syllabus topic/section:**

2.1.7 Renal Intensive Care / Acid-Base and Electrolyte Disorders. L1

**Discussion:**

This is a core knowledge question which was generally answered well. This is an SAQ with simple lists of hypo and hypercalcaemia issues to complete. Candidates are reminded to **only** list the number of things asked for. If more than a stipulated number of responses is given (for example part b) asks for three differentials) the examiner will **only** mark the top three. It is not the responsibility of the examiner to pick the most appropriate of the answers given. This is a requirement of the candidate.

Several candidates omitted part/all of the question. Consider time management strategies to optimise the opportunity to address every question with enough time. We recommend practicing timed answers and practicing answering more than one SAQ consecutively during your preparation.

This is a deliberately timed examination designed to test recall and prioritisation as these are transferrable skills to senior, independent Intensive Care clinical practice. Every question is important for overall success. Candidates who have allocated enough time to address **every** question of the written paper have a statistically significant higher chance of successful participation and are more likely to be able to demonstrate the standard required on the journey to becoming a transitional fellow of the CICM.

Angoff score for this SAQ	5.95
Highest candidate score achieved	8.25

***The report continues on the next page.***

## SECOND PART ORAL EXAMINATION

### CLINICAL “HOT CASES” SECTION

#### EXAMINERS’ COMMENTS

The hot cases run for twenty minutes with an additional two minutes at the start of each case for the candidate to be given both a verbal and a written introduction to the case in question. This is to give candidates more opportunity to take in the relevant information and to plan a focussed approach to examination of the patient.

The following comments are a guide to the expected standard for performance in the hot cases:

- Candidates should demonstrate professional behaviour, treating the patient with consideration and respect.
- Candidates should address and answer the question asked of them in the introduction to the hot case.
- Candidates should interpret and synthesise information as opposed to just describing the clinical findings.
- Candidates need to seek information relevant to the clinical case in question.
- Candidates should be able to provide a sensible differential diagnosis and appropriate management plan. A definitive diagnosis is not always expected and, in some cases, may yet to be determined.
- Candidates should not rely on a template answer or key phrases but answer questions in the context of the clinical case in question.
- Candidates must be able to describe, with justification, their own practice for specific management issues.

Candidates who performed well in the hot cases, as in previous exams, were able to demonstrate the following:

- A professional approach showing respect and consideration for the patient.
- Competent, efficient, and structured examination technique and able to appropriately adapt the examination to suit the clinical case in question.
- Seeking of information relevant to the case.
- Appropriate interpretation and synthesis of their findings.
- Presentation of their conclusions in a concise and systematic fashion, addressing the issue in question.
- Listing of a differential diagnosis that is relevant to the clinical case in question.
- Appropriate interpretation of relevant investigations.
- Discussion of management issues in a mature fashion, displaying confident and competent decision-making.
- An appreciation of the complexities and key issues of the case.
- Overall performance at the expected level (transitional fellow).

Candidates who did not perform at the acceptable standard did so for reasons including the following:

- Missing or misinterpreting key clinical signs or confabulating signs on examination.
- Failure to perform a focussed examination relevant to the case in question.
- Incomplete or poor technique for examination of a system
- Causing pain, distress or potential harm to a patient due to rough technique or an inconsiderate examination.
- Poor synthesis of findings with limited differential diagnosis, sometimes compounded by missed key clinical signs on examination.
- Poor interpretation of imaging and data.

- Failure to demonstrate understanding of the key issues relevant to the case in question and a lack of insight into the problems.
- Inability to construct an appropriate management plan for the case in question.
- Hesitancy and/or uncertainty in stating a management plan.
- The need for significant prompting during the discussion with knowledge gaps.
- Limited time for discussion as a consequence of taking too long to present the clinical findings or to interpret basic data.
- Inability to convey the impression that they could safely take charge of the unit.

It is apparent that some candidates are very nervous, and this may adversely affect their exam performance. Candidates badly affected by nerves may benefit from sessions with a performance psychologist, drama coach, public speaking coach or similar.

Candidates are advised that they should not sit the Second Part Examination until they can confidently examine patients, present the relevant clinical findings, synthesise all the information and discuss management issues at the appropriate level, **which is a trainee who is ready to enter the transition year of the CICM training program, by demonstrating they have the ability for safe, effective, independent practice as an Intensivist.** Candidates who have not yet attained this level of experience are strongly encouraged to defer their attempt at the exam. Candidates should practise hot cases from the commencement of their exam preparation. To this end, candidates are encouraged to do the following in their daily clinical practice as preparation for the hot cases:

- Seek the opportunity to take charge of the unit and be responsible for management decisions.
- Practise examination of individual systems.
- Treat every case to be assessed at work as a hot case, i.e., pose a relevant question (e.g., ‘*Why is this patient not progressing?*’ ‘*What is the cause of the new fever?*’ ‘*Is this patient ready for extubation?*’), perform a focussed exam and then present your findings to a colleague.

## SUMMARY OF CLINICAL “HOT CASES”

The clinical ‘hot cases’ require candidates to assess patients currently in the ICU, regarding answering specific questions around clinical assessment, including diagnosis, relevant investigations, and aspects of management. Five examples of clinical ‘hot case’ questions from this examination sitting are given below.

- *A 79-year-old man is Day 1 post elective coronary artery bypass grafting (CABG) LIMA-LAD off pump. He has a grade four airway – D-Blade used by anaesthetist. He has a background history of a recent upper gastro-intestinal bleed (dieulafoy lesion), severe peripheral vascular disease and paroxysmal atrial fibrillation, on apixiban. He is intubated and mechanically ventilated. Please assess and formulate a plan for extubation.*
- *A 42-year-old man is Day3 ICU with a severe aspiration pneumonia following cardiac arrest post hanging. He has a background history of depression and heavy alcohol use. He is currently on vv-ECMO and the ECMO service is ready to wean him from ECMO. Discuss the problems you might anticipate after ECMO decannulation.*
- *A 53-year-old man is D4 ICU. He has a background history of an AMI 4 days ago (Troponin 11 000), shock requiring vasoactive support and a failed extubation yesterday secondary to hypoxia. His background history is significant for poorly controlled type 2 diabetes, current smoking and HFrEF- ischaemic cardiomyopathy (EF 35%). He is intubated and ventilated. Please examine him with a focus on the likely cause of the failed extubation and how you would progress him towards ICU discharge.*
- *A 30-year-old woman is Day 29 ICU. With a presenting problem of fever, confusion and loss of consciousness. She has a background history of endometrial hyperplasia. She self-decannulated her tracheostomy last night. Please assess for delirium and comment on patients' safety following self-decannulation.*

- *A 43-year-old man is Day 2 ICU. He has a presenting complaint of headache with a subarachnoid hemorrhage. The background history is significant for migraines, heavy smoking >20/day and smokes cannabis “too many bongos to count”. He is intubated and ventilated. What are the complications of subarachnoid haemorrhage in this patient and how would you manage them?*

The clinical hot cases were examined at CICM accredited Intensive Care Units in Brisbane, QLD on Wednesday 22<sup>nd</sup> May 2024.

## VIVAS

The overall pass rate for the vivas was 82%, compared with 59% for the written paper and 72% for the hot cases. Failure to pass a viva was often due to knowledge gaps, poorly structured answers, and an inability to give the rationale for their responses. As in the discussion for the hot cases, candidates should not rely solely on generic statements, key-phrases, and template answers, and, instead, tailor their responses to the specifics of the question and be able to justify and expand their response. Candidates are encouraged to practise viva technique and to discuss patient management, including the rationale for their decisions, with senior colleagues. As with the hot cases, candidates who are very nervous or have a poor technique may benefit from training with a performance coach.

## VIVA STEMS

### DAY 1 – THURSDAY 23<sup>rd</sup> MAY 2024

#### Viva 1

A 37-year-old man presents to the Emergency Department of your hospital with a history of drowsiness, headache and seizures. He was well the day before presentation.

On examination he has a GCS of 11 (E2 V3 M6); respiratory rate: 22 breaths/min; SpO<sub>2</sub>: 94% on room air; heart rate: 96/min; BP 170/ 80; Temperature: 38.0°C.

What are the differential diagnoses for his presentation?

#### **Syllabus topic/section:**

2.1.8 Neurological Intensive Care / Subarachnoid haemorrhage: L1

**VIVA summary:** Subarachnoid Haemorrhage, Complications including vasospasm, management of ventriculitis and prognostication.

#### **Candidates did well if they:**

Had a structured approach to the questions with broad headings and were able to efficiently and specifically convey information without random statements.

For example, outlining differential diagnoses using headings (intracranial vs extracranial, or systems based AND giving an indication of likelihood. Had depth knowledge of the topics.

E.g. Assessment includes having a full list of investigations with how they would aid diagnosis

#### **Candidates achieved less marks if they:**

Did not answer the question asked or veered off target.

Missed a broad differential diagnosis or generic treatment options without specific management targets (e.g. BP goals and strategies to reach these numbers)

Did not prioritise the management options and required a lot of prompting giving the impression of lack of understanding.

Gave generic non-specific statements that had to be clarified and therefore wasted time in the final sections of the viva

Maximum Score	9
Percentage Passed	77%

## Viva 2

A 45-year-old patient is day 7 of their ICU admission following a high-speed motor vehicle accident.

The injuries include:

- Incomplete spinal cord injury which required spinal fixation with C6-C7 motor level
- Multiple bilateral rib fractures, flail segment, pulmonary contusions, and haemo-pneumothorax with bilateral intercostal drains
- Jejunal perforation which required emergency laparotomy

The ICU stay has been complicated by multi-organ failure, ventilator associated pneumonia due to *Pseudomonas aeruginosa* and acute kidney injury requiring CRRT.

The patient's sedation has been ceased for the last 24 hrs.

A weaning trial is ongoing.

What are the key challenges for weaning from mechanical ventilation in this patient?

### Syllabus topic/section:

2.1.5 Respiratory Intensive Care / Mechanical ventilatory support: L1

2.1.13 Trauma Intensive Care / Chest trauma, Spinal trauma: L1

**VIVA summary:** Post spinal Injury weaning from mechanical ventilation issues including rib fixation, extubation strategies and tracheostomy considerations.

### Candidates did well if they:

Were succinct and provided objective and clear parameters for weaning and included Spinal cord injury in their management. Were able to identify key issues of weaning with the traumatic injuries, for example, the effect on intercostal muscle strength, cough, clearance of secretions.

Were able to appreciate the multidisciplinary approach pre, peri and post extubation. Were able to discuss simple tests for diaphragmatic paralysis, eg breathing patterns CXR changes.

Were able to discuss in detail the role of NIV, HiFlow in weaning, including advantages and disadvantages.

### Candidates achieved less marks if they:

Could not structure their answer to a clinical context of post spinal injury WITH chest injury as outlined in the stem. Were unable to appreciate the "incomplete" spinal cord injuries and the effects on respiratory function with a low cervical injury

Focused on the chest injuries to the exclusion of spinal trauma OR focused on injuries only and did not consider ICU weaning parameters such as secretions, fluid balance, mentation, delirium.

Were unable to give an opinion as to which of the weaning strategies they would actually use and sat on the fence.

Maximum Score	9
Percentage Passed	74%

### Viva 3 - Radiology Station

#### Syllabus topic/section:

2.1.20 Radiology in Intensive Care.

#### VIVA summary:

The radiology station consisted of CXR x4, CT Chest/Abdo x1, CT brain x1

#### Candidates did well if they:

Followed a systematic approach and gave accurate anatomical descriptions. Gave plausible differentials, focused on the clinically relevant structures e.g. the splenic artery in a pancreatitis CT. Where able to identify normal anatomical structures. Where able to use the stem to give the correct context and interpretation of the images. Used specific terminology for pathology and anatomical locations e.g. not "white out".

#### Candidates achieved less marks if they:

Spent too long discussing differentials which were not asked for. Were distracted by obvious pathology and abandoned structure. Failed to correctly identify extra thoracic structures, mistaking them for intrathoracic structures. Misinterpreted trivial findings and exaggerating some normal phenomenon e.g. calling normal attenuation of the density on the posterior fossa as infarction.

#### Tips:

**Answer the question asked. Practice interpreting radiology daily during ward rounds using correct terminology. Concentrate on the overall picture before diving into minutiae.**

Maximum Score	6.95
Percentage Passed	54%

## Viva 4 – Procedure Station

This is the procedure viva.

You are caring for a 35-year-old patient with severe aspiration pneumonitis. A single intercostal drain is in situ for a small pneumothorax. CXR shows diffuse and progressive bilateral infiltrates and the patient's current ventilator settings are FiO<sub>2</sub> 0.8 and PEEP 15.0cmH<sub>2</sub>O. Arterial PaO<sub>2</sub> is 55mmHg.

A decision has been made to turn the patient into the prone position.

The examiners will ask you some questions about prone positioning in this patient. Subsequently, you will be asked to demonstrate a safe technique for proning this patient.

### VIVA Summary:

A discussion of proning, including physiological rationale, indications, risks and risk mitigation. The viva included a practical demonstration to assess familiarity and competence with the procedure.

### Syllabus topic/section:

2.1.5 Respiratory Intensive Care / Prone Positioning: L1

### Candidates did well if they:

Were able to demonstrate technique and give the impression they were very familiar and experienced with the process performed. Looked safe and comfortable with the role of team leader for the group. Gave clear directions for safety of lines, tubes, ICC, ventilation and patient safety, head and spinal manoeuvres including pressure point protection.

### Candidates achieved less marks if they:

Could not answer basic knowledge questions about advantages and disadvantages eg not mentioning peripheral nerve injury potential.

Were unable to make a clear plan for the "direction of the turn. Were unable to articulate the plan to assistants. Had a clear knowledge gap especially about contraindications.

Maximum Score	9
Percentage Passed	71%

## **DAY 2 – FRIDAY 24<sup>th</sup> MAY 2024**

### **Viva 5**

A 75-year-old patient with severe aortic stenosis is being evaluated for a possible transcatheter aortic valve implantation (TAVI) procedure.

They developed new atrial fibrillation (AF) with rapid ventricular rate, which persisted despite electrolyte replacement. They became hypotensive with a lactate of 4.5 mmol/L on ABG, leading to ICU admission.

Why might patients with severe aortic stenosis poorly tolerate AF?

#### **Syllabus topic/section:**

2.1.4 Cardiovascular Intensive Care / Valvular heart disease and Cardiac arrhythmias: L1

**VIVA summary:** Aortic stenosis, decision making on AVR, post procedural complications of TAVI (Transcatheter -Aortic Valve -Implantation)

#### **Candidates did well if they:**

Could resuscitate in a structured fashion as well as relate the issues to the TAVI and its procedural complications. Were able to prioritise resuscitation and specific management goals. Demonstrated an in-depth knowledge of potential major TAVI complications including vascular and stroke. The excellent candidate could converse on the EUROscore. Echo findings were generally answered well.

#### **Candidates achieved less marks if they:**

Did not understand the physiology as it relates to Aortic stenosis (e.g. LHV, reduction in stroke volume) and in the presence of atrial fibrillation. Focused on high-end specialist knowledge i.e. echo findings without mentioning basics (source control of haemorrhage) This led to time management issues. Had a disorganised approach to the deteriorating patient. Most candidates had a poor understanding of the longer-term complications such as IE, mechanical failure. Wasted time repeating every question each time one was asked.

Maximum Score	8.5
Percentage Passed	62%

## Viva 6

A 52-year-old patient with recently diagnosed lymphoma is one week post induction chemotherapy. They present with fever, hypotension, hypoxia, and confusion with obvious jaundice.

Parameter	Patient value	Adult normal range
Haemoglobin	74 g/dL*	135-180
White cell count	0.9 X 10 <sup>9</sup> /L*	4.0-11.0
Platelet count	20 X 10 <sup>9</sup> /L*	150-400
INR (International normalized ratio)	2.5*	0.9-1.3
APTT (Activate partial thromboplastin time)	48.5 sec*	27.0-38.5
Fibrinogen	1 g/dL*	2.0-4.0
D-dimer	24 mg/L*	< 0.5
Bilirubin Level Total	74 mmol/L*	2-24
Gamma Glutamyl Transferase level	186 U/L*	0-60
Alkaline Phosphatase level	148 U/L*	30-110
Alanine Aminotransferase level	2590 U/L*	0-55
Aspartate Aminotransferase	1478 U/L*	0-45

Q1. What are the challenges of making a diagnosis of sepsis in this particular patient?

### Syllabus topic/section:

2.1.3 Sepsis and Infection / Sepsis and septic shock, Multiorgan dysfunction syndrome: L1

**Viva summary:** Sepsis in a post chemotherapy patient, assessment of sepsis, management of refractory shock, HLH diagnosis and management.

### Candidates did well if they:

Gave the impression they were familiar with the management of refractory shock and a detailed prioritised description of management options. Recognised the wide differential in an immune suppressed patient. Candidates are advised to read the stem and adopt a specific approach to the patient outlined for them. The candidates who did this scored highly.

### Candidates achieved less marks if they:

Did not consider a wide differential and did not consider non-infectious causes of presentation. A vague generic approach ignoring the stem prompts. Were unable to appreciate diagnostic uncertainty and adjust management in the face of diagnostic uncertainty. Unable to demonstrate knowledge of specific treatments when asked to apply clinical judgement. Lacked an approach to "failure to respond" Poor knowledge of HLH and management.

Maximum Score	9.65
Percentage Passed	58%

## Viva 7

A 75-year-old patient has undergone elective transoesophageal echocardiography and DC cardioversion for AF.

In recovery, they develop dysphagia, dyspnoea, and central chest pain.

Background:

Ischaemic heart disease

Paroxysmal AF on Apixaban

Type 2 Diabetes Mellitus

Gastro-oesophageal reflux disease

A. List the 3 most likely causes for deterioration.

B. What specific investigations would you perform to elucidate the cause for deterioration? Provide your justification.

### Syllabus topic/section:

2.1.3 Sepsis and Infection / Sepsis and septic shock: L1

2.1.4 Cardiovascular Intensive Care / Cardiac arrhythmias: L1

**VIVA Summary:** Oesophageal perforation management including antimicrobial and infectious issues.

### Candidates did well if they:

Understood and were able to demonstrate the role of imaging and complications of oesophageal perforation. Where able to use the stem to address the specific patient issues outlined.

### Candidates achieved less marks if they:

Lacked specific detail of anticoagulation reversal or ignored the presence of apixaban, could not demonstrate antifungal rationale and treatment.

Maximum Score	9.35
Percentage Passed	85%

## Viva 8 – Communication Station

Max is a CICM trainee who has worked in the unit for the last 18 months and is planning on sitting the Primary Exam in August 2024. He and his partner have had a healthy baby 6 weeks ago.

Max is viewed as a competent and safe doctor for his level of training.

Recently the nursing staff have reported concerns regarding Max's performance. They reported on a night shift he did not tell them of a patient that needed to be admitted.

The consultant group has also noted that Max has been less engaged, specifically being distracted on the ward rounds and leaving to take personal phone calls.

There has also been a complaint from the medical ward regarding a recent MET call, where Max was dismissive and generally unsupportive.

You are the Junior ICU Consultant.

You have a good working relationship with Max.

You have asked to meet him to explore these issues.

### **Syllabus topic/section:**

2.3.1 Intensive Care Administration / Personnel management and staffing

**VIVA Summary:** Communication – poorly performing junior registrar with a new baby about to sit the primary exam.

### **Candidates did well if they:**

Were able to address performance issues in detail as well as demonstrate an active empathic response with open ended questioning. Explored the welfare of the JR and provided safe environment for the conversation as well as clear goals for the conversation. The higher scoring candidates used the stem to explore the background issues (family stressors, exam proximity), offer support and deal with the complaints of underperformance and patient safety and offer solutions. The higher scoring candidate encouraged internal self-reflection of the JR rather than instructing change

### **Candidates achieved less marks if they:**

Did not address safety concerns about the JR performance and only provided rapport or checked the welfare. The communication viva is not just HOW you communicate. It is also WHAT is communicated, and many candidates provided sympathy but did not explore issues of performance problems, causes of these, tangible solutions or indicate follow-up strategies or future meetings. Exploring these issues separated the candidate who did less well from the higher scoring candidates

Maximum Score	8.25
Percentage Passed	72%