COLLEGE OF INTENSIVE CARE MEDICINE
OF AUSTRALIA AND NEW ZEALAND

REPORT OF THE
INTENSIVE CARE PRIMARY EXAMINATION

SEPTEMBER / NOVEMBER 2010

This report is prepared to provide candidates, tutors and their supervisors of training with information about the way in which the Examiners assessed the performance of candidates in the Examination. Answers provided are not model answers but guides to what was expected. Candidates should discuss the report with their tutors so that they may prepare appropriately for the future examinations.

The exam included two 2.5 hour written papers, each comprising of twelve short answer questions and twenty short fact questions. Candidates were required to perform at a satisfactory level in the written before being eligible to sit the oral part of the exam. The oral was comprised of eight, ten-minute Viva stations.

OVERALL STATISTICS

Total number of candidates presenting for the written examination:	15
Number of candidates scoring >50% in the written:	3
Number of candidates scoring 45-50% in the written:	6
Number of candidates carrying a written score:	1
Total number invited to the Oral section based on written marks:	10
Total number of candidates successful at the CICM Primary:	7

Successful candidates:

Timothy	Beckingham
James	Doyle
Nancy	Jiang
Gururaj	Nagaraj
Shivesh	Prakash
Mohamed	Robaa
Brij	Verma

WRITTEN SECTION

SAQ PAPER 1

1. Discuss the physiological causes of early post operative hypoxaemia.

   For a good mark it was expected that candidates define hypoxaemia and, in a structured manner, discuss the physiological causes of early postoperative hypoxaemia. Candidates should always try and begin their answer with a definition of the term that is to be discussed. Many candidates invoked clinical disease related causes and not physiological. This did not score marks. Similarly, factors leading to tissue hypoxia, such as anaemia or low 2,3-dpg were not given marks. Candidates may have done so because they confused "hypoxaemia" with "hypoxia".
   Better answers addressed different physiological causes of hypoxaemia, including areas of low V/Q; hypoventilation; increased oxygen consumption; loss of hypoxic pulmonary vasoconstriction and closing capacity exceeding functional residual capacity.

   Syllabus: B1a2b, B1e,f,g
   References: Nunn's respiratory physiology – various sections

   5 (33%) of candidates passed this question.

2. Outline the principles of compatibility testing of blood for transfusion.

   There was a reasonable knowledge of the basics of ABO antigens and antibodies by most candidates. However, many answers seemed to lack perspective of the steps performed in the laboratory to improve immunological safety of transfusion. For a good answer it was expected that candidates also discuss the basis to serological testing and antibody screening.

   Syllabus: J2a, J2a2i
   References: Guyton Textbook of Physiology Chp 32 and 35, Australian Red cross Transfusion Medicine manual

   8 (53%) of candidates passed this question.

3. Compare and contrast Ceftriaxone and Meropenem with respect to the following:

   - Mechanism of action and spectrum (40% of marks)

   - Pharmacokinetics (30% of marks)

   - Effect of critical illness on pharmacokinetics and subsequent dosing. (30% of marks)

   Most candidates used a table to compare these two drugs, which was an ideal means to structure their answers to this question and a useful way to present the information required. The use of a structured format for learning pharmacokinetic data about all drugs allows more useful information in a question such as this. Candidates should also give consideration to the effects of critical illness (such as cardiac output, plasma binding and volume of distribution) affect the pharmacokinetics of drugs used in intensive care. This particular section of the question was poorly answered.

   Syllabus: M2a,2d
   References: Goodman and Gillman, The Pharmacological basis of therapeutics Chp 46

   5 (33%) of candidates passed this question.

4. Describe the cardiovascular changes that occur in pregnancy

A structured approach to answering this question was important. The principal topics to discuss included the increased cardiac output, increased blood volume, changes in red blood cell mass and protein concentrations, decrease in blood pressure and gravitational effects of the gravid uterus on major blood vessels. Answers benefited by specific details of percentage change and reference to timing of occurrence.

Syllabus: O1,2a
References: Hemmings Foundation of Anaesthesia: Basic and Clinical Science Pg 823 – 825, Miller Anaesthesia pgs2308-2309

4 (27%) of candidates passed this question.

5. List the antiplatelet agents and outline their mechanisms of action, adverse effects, mode of elimination and duration of action.

Most candidates did reasonably well by including aspirin, ADP receptor blockade and glycoprotein 2b/3a blockade in their answers. The best approach to answer this type of question was to use a table with each anti-platelet agent within a column and headings for the rows such as mechanisms of action, adverse effects, mode of elimination and duration of action.

Common omissions included the irreversibility of the blockade of the platelet function by many of these agents, renal toxicity and bronchospasm as side effects of aspirin, bone marrow toxicity of ADP receptor blockers, and dipyridamole as an anti-platelet agent. Some candidates classified clopidogrel as a glycoprotein 2b/3a blocker incorrectly and thought clopidogrel has a relative short duration of action on platelet function because of its half-life. Clopidogrel as a prodrug requiring activation by cytochrome P450 and hence significant potential drug interactions were not mentioned by any candidates.

Syllabus: J2a,2d
References: Goodman and Gillman, The Pharmacological basis of therapeutics Chp 55

10 (67%) of candidates passed this question.

6. Outline the physiological consequences of a tension pneumothorax. (60% of marks) Describe the anatomy relevant to the insertion of an intercostal catheter. (40% of marks)

The physiological consequences of tension pneumothorax were in general poorly described. Purely mentioning clinical features (eg distended neck veins) without an associated physiological explanation was not sufficient. Good answers described why tension pneumothorax causes hypoxaemia and hypotension. The cardiovascular mechanism for hypotension and the effect on pulmonary compliance, pulmonary vascular resistance, lung volumes, work of breathing, shunt fraction and carbon dioxide elimination should all have been described.

Many candidates used valuable time making comments about tension pneumothorax being a medical emergency requiring prompt assessment and treatment. These comments attracted no marks, as they were not sought in the question asked. Often the clinical need for insertion of a needle/cannula for decompression was mentioned, but again this attracted no marks.

Description of the anatomy relevant to the insertion of an intercostal catheter was very variable. Most candidates were able to detail the anatomical layers that the catheter had to traverse in order to gain access to the pleural space, and most explained why the catheter should enter the pleural space just above the rib. However, few accurately described where access to the pleural space should be sought and even fewer could explain why. The British Thoracic Society's 'safe triangle' in the axilla and the anatomical boundaries of this were correctly described by very few candidates. No candidate described an anterior approach through the mid clavicular line, although anatomical details of this approach would have been acceptable.

Syllabus: B1c 1 & B1b 2d
References: Nunn's respiratory physiology 4th Ed P423, Ganong Review of Medical Physiology 22nd Ed P688
9 (60%) of candidates passed this question.

7. List the adverse properties of Propofol and Ketamine.

This question was not well answered by many candidates. Candidates included advantages of these sedative / analgesic agents in their answers when they were not asked for in the question. The best approach to answer this question is to use a table listing their potential adverse properties in categories such as pharmaceutical and chemical properties, pharmacodynamic properties in different body systems, and pharmacokinetics.

The common weaknesses observed included the side effects of ketamine, including its side effects on intracranial pressure, myocardial contractility and oxygen consumption, and hallucinations or delirium. Some adverse properties of propofol including bacterial contamination and pain on injection were also not well covered by many candidates.

Syllabus: G2a,2a
References: Goodman and Gilman The pharmacological basis of therapeutics 11th edition p350-352

6 (30%) of candidates passed this question.

8. Outline the physiological consequences of an inability to produce insulin.

Most candidates were able to detail how insulin allowed influx of glucose into insulin dependent cells, in combination with potassium. Good candidates were able to explain how the inability to produce insulin allowed hypovolaemia and electrolyte loss, with the ensuing tachycardia and hypotension. Few candidates mentioned insulin's action on hormone sensitive lipase (HSL), and that deficiency of insulin leads to increased activity of this enzyme. The fact that when insulin is not produced, the liver cells carry out β-oxidation of the fatty acid (released peripherally by the action of HSL) releasing acetyl CoA which is coalesced into acetoacetic acid was mentioned by only a few. However, the fact that ketone bodies in the form of acetoacetic acid, β-hydroxybutyric acid and acetone accumulate and cause a metabolic (anion gap) acidaemia, appeared to be well known. Few, went on to describe that a compensatory respiratory alkalosis will be generated and detail how and why this occurred.

Syllabus: N2a&b, E2,F1, C1g 2b
References: Guyton and Hall Textbook of Medical Physiology 10th Ed, pg 888

7 (47%) of candidates passed this question.

9. Describe how the body defends against infection.

For a good answer candidates were expected to describe physical barriers, innate and acquired immunity. Physical barriers such as skin, mucous membranes, normal flora, secretions, etc were poorly covered. Aspects of immunity such as cellular and humoral were better covered but often lacked a sufficient depth of knowledge.

Syllabus: M2a
References: Guyton and Hall Textbook of Medical Physiology, Chp 33 and 34

8 (53%) of candidates passed this question.

10. Classify colloid intravenous fluids and outline the pharmacology of the hydroxyethyl starches.

This question, of high and common clinical relevance, was poorly answered. Candidates were expected to mention colloid intravenous fluid were either semi-synthetic or plasma derivatives. A clear outline of the pharmacology, that is formulation (eg molecular weight, amylopectin/glucose polymer), pharmacokinetics and adverse effects, etc was expected of a good answer.

Syllabus: E2a
References: Hemmings, Foundation of Anaesthesia: Basic and Clinical Science pg 719, OH, Intensive Care Medicine 5th Edition pg 927-929

4 (27%) of candidates passed this question.

11. Compare and contrast hydrocortisone, methylprednisolone and dexamethasone.

Hydrocortisone represents the main endogenous glucorticoid. Methylprednisolone and dexamethasone are synthetic glucocorticoids that all have metabolic, anti – inflammatory and immunosuppressive effects. These are commonly encountered drugs in intensive care practice, yet overall this question was poorly answered. For a good answer candidates were expected to mention the differences in their pharmacokinetics, relative glucocorticoid and mineralcorticoid effects and adverse effects. These drugs share some common features (eg all have a steroid nucleus, hepatic metabolism and renal excretion and adverse effects), features that were poorly covered by the candidates, but also expected to be mentioned for a good answer.

Syllabus: N2,2c
References: Stoelting, Pharmacology and Physiology in Anaesthetic Practice, pge 416, Peck Hill and Williams Pharmacology for Anaesthesia and Intensive Care, pg 355-8

6 (40%) of candidates passed this question.

12. Describe the renal handling of bicarbonate and the changes in urine pH along the nephron. (80% of marks) How is this affected by hypoventilation? (20% of marks)

This question sought knowledge of an important and basic area of physiology that applies to many circumstances encountered in daily intensive care practice. For a good answer candidates were expected to mention that bicarbonate is freely filtered, it's fate along the nephron and that it is not normally found in the urine. Mechanisms by how it is reabsorbed and generated along the different segments of the nephron were expected to be described in some detail. The last part of this question relating to hypoventilation was poorly answered. For a good answer candidates were expected to mention that Hypoventilation results in an increase in arterial PCO_2 that readily diffuses into tubular cells resulting in increased intracellular H_2CO_3 and subsequently bicarbonate, that is reabsorbed, and H^+ that is secreted.

Syllabus: D1 Renal Physiology, 2e, 2k
References: Ganong, Review of Medical Physiology, Ch 39 and 40

4 (27%) of candidates passed this question.

SAQ PAPER 2

13. Define the following terms (40% of marks)

- Saturated Vapour Pressure of Water

- Absolute Humidity

- Relative Humidity

- Latent heat of vaporisation

Briefly outline how the humidity of air is altered during inspiration and expiration by the respiratory tract. (60% of marks)

This question was poorly answered by candidates. Basic aspects, which were critical for a good answer, such as definitions were often inaccurate. Terms such as 'amount' or 'content' were commonly used without provision of units, when mass or pressure was required. The importance of temperature was often not mentioned. Most candidates identified the importance of the upper airway in humidification but did not describe details of this process and failed to discuss the events occurring during expiration.

Syllabus: R2c, S2e, B1k,2d
References: Davis, Basic Physics and Measurement in Anaesthesia, pgs 145-6, Nunn's respiratory physiology pgs 12, 19, 166-7

3 (20%) of candidates passed this question.

14. List the muscles involved in respiration and briefly describe their function.

Most candidates correctly identified the diaphragm, intercostals, abdominals and accessory muscles as important. However, the majority of candidates omitted to mention the muscles of the larynx, pharynx and airway and thus failed to achieve a good score. Good answers included a detailed description of their function including differentiating between external and internal intercostals.

Syllabus: B1b,1, 2a
References: Nunn's respiratory physiology P76 – 80 and West, Respiratory Physiology: the Essentials, pgs 93 - 95

5 (33%) of candidates passed this question.

15. Describe the physiological consequences of decreasing Functional Residual Capacity (FRC) by one litre in an adult.

This is core knowledge and it was expected candidates would describe physiological consequences accurately. Good answers included a definition of FRC and correct value. A number of candidates omitted this. It was also expected that candidates mention that as FRC falls, alveolar closure occurs, lung compliance decreases and airway resistance increases work of breathing increases, pulmonary vascular resistance, and thus right ventricular afterload increases. Many candidates described alveolar closure as causing increased dead space ventilation rather than altered V/Q.

Syllabus: B1e
References: Nunn's respiratory physiology, pages 51-56

5 (33%) of candidates passed this question.

16. Discuss the regulation of body potassium by the kidney.

A number of candidates discussed the distribution of potassium in the body and its role in membrane potentials. This was not asked for. Common omissions were a lack of comment on glomerular filtration, a lack of detail regards mechanisms of potassium transport in various parts of the glomeruli and failing to discuss control mechanisms other than aldosterone.

Syllabus: E1,2b, D1,2f
References: Guyton and Hall Textbook of Medical Physiology, Chp 29

4 (27%) of candidates passed this question.

17. Outline the various cardiac reflexes and the mechanisms by which they maintain physiological homeostasis.

This question required candidates to provide an answer that integrates their knowledge of various aspects of cardiovascular physiology. Cardiac reflexes are fast-acting reflex loops between the heart and central nervous system that contribute to regulation of cardiac function and maintenance of physiologic homeostasis. This was often overlooked by many candidates. For a good answer it was expected that at least the chemo and baroreceptor, Bainbridge (elicited by stretch receptors located in the right atrial wall and the cavoatrial junction), Cushing (result of cerebral medullary vasomotor centre ischemia), oculocardic (provoked by pressure applied to the globe of the eye or traction on the surrounding structures), Bezold-Jarisch (responds to noxious ventricular stimuli sensed by chemoreceptors and mechanoreceptors within the LV wall) reflexes be mentioned and described.

Syllabus: C1e, C1c,2g, C1g
References: Millers Anaesthesia Chp 16

4 (27%) of candidates passed this question.

18. Outline the consequences of mild hypothermia in a patient following major surgery.

This is another very important, and not an infrequently seen, aspect of almost daily intensive care practice which was poorly understood by candidates. For a good answer candidates were expected to outline pharmacological (eg alteration in drug behaviour), physiological (eg shivering, vasoconstriction, impaired coagulation, etc) consequences. Additional points such as poor wound healing, discomfort also attracted a small number of marks. Candidates would have benefited by illustrating their answers with examples, eg prolonged recovery from anaesthesia and duration of neuromuscular blokade.

Syllabus: L2e
References: Hemmings, Foundation of Anaesthesia: Basic and Clinical Science pg 815

1 (7%) of candidates passed this question.

19. Define levels of evidence with respect to Evidence Based Medicine (EBM). (30% of marks)
Discuss the strengths and weaknesses of meta-analysis. (70% of marks)

For a good answer candidates were expected to list the following levels of evidence, eg Level I (evidence obtained from a systematic review of all (at least 2) relevant randomized controlled trials), Level II (evidence obtained from at least one properly designed randomized controlled trial, Level III (evidence obtained from other well-designed experimental or analytical studies (not RCCT's), Level IV (evidence obtained from descriptive studies, reports of expert committees or from opinions of respected authorities based on clinical experience).

Candidates were expected to define a meta-analysis (process of combining the results of different (randomised) trials to derive a pooled estimate of effect) and a systematic review (process of obtaining and evaluating all relevant trials, their statistical analyses and interpretation of results). In relation to strengths, a good answer required mentioning increased power of pooled data, analysis and conclusions based on inclusion of high quality trials (weighting of trial quality), overcomes the uncertainty associated with single-centre trials, robust methodology; combines similar patient groups, interventions and end-points to inform the analysis and established methods to find all relevant trials. In relation to weaknesses, a good answer required mentioning publication bias, heterogeneity of included trials, pooled result may be biased toward the largest included trials, historical (outdated) data, and that positive results generally require confirmation by a large RCT

Syllabus: EBM 2a
References: Myles & Gin Statistical methods for Anaesthesia and Intensive Care, pg114-118

6 (40%) of candidates passed this question.

20. Outline the pharmacokinetic consequences of old age. Illustrate your answer with examples.

As the general population ages, and many elderly are admitted to intensive care units and/or encountered during intensive care ward consultations, this topic is highly relevant. Unfortunately candidate performance generally lacked sufficient depth and breadth in this area. Good answers were expected to mention changes in body compartments (eg total body water, lean body mass decrease, etc), consequences of changes in organ function (eg deteriorating glomerular filtration rate, reduced liver blood flow, etc), alterations in protein levels and binding, increased likelihood of drug interactions and the influence of disease states.

Syllabus: Generic Pharmacology III2d
References: Millers' Anaesthesia Chp 19

8 (53%) of candidates passed this question.

21. Describe the control of gastric emptying.

This was another important, relevant and essential aspect of basic physiology, for which candidates tended to lack sufficient breath and depth of the required knowledge. For a good answer candidates were expected to mention liquids empty much faster (and in an exponential fashion) than solids (which have a linear pattern), rate of emptying depends on the pressure gradient generated by the antrum against pyloric resistance. Antral pump activity is of most importance and that it is influenced by signals from both the stomach (eg distension) and the duodenum (volume, osmolarity, pH) and humoral factors (gastrin, cholecystikinin, secretin) and nervous stimulation (general parasympathetic nervous stimulation enhances gastric motility and sympathetic stimulation opposes it).

Syllabus: Q2d
References: Guyton and Hall Textbook of Medical Physiology, Chp 63, Power and Kam, Principles of Physiology for the Anaesthetists, pg 193

8 (53%) of candidates passed this question.

22. Compare and contrast the pharmacology of digoxin and amiodarone.

This question required a structured approach to a comparative description of the pharmacology of two commonly used and encountered drugs in intensive care practice. Candidates who did not gain a sufficient mark, did so because of a poor knowledge of this topic, as well as a critical failure to structure their answer.

Syllabus: C2c,2b
References: Stoelting, Pharmacology and Physiology in Anaesthetic Practice pg 280 and 339, Peck Hill and Williams, Pharmacology for Anaesthesia and Intensive Care, pgs 224, 232

6 (40%) of candidates passed this question.

23. Describe the ionic events associated with a ventricular cardiac action potential (80% of marks). Outline how the action potential relates with the mechanical events of the cardiac cycle (20 % marks).

To achieve a good pass in this question, candidates needed to outline the ionic events associated with Phase 0 to phase 4 of the ventricular action potential followed by a description of excitation – contraction coupling. The second part of the question was best answered using a ventricular pressure-volume loop and overlaying the phases of the ventricular action potential.

Description of the ionic events associated with the action potential phases was generally well done, but this was as far as many answers went in answering this question. Few candidates included a description of excitation-contraction coupling in there answer and few candidates considered an answer to the second part of the question. The use of illustrations helped answer this question.

Syllabus: C1b
References: Guyton and Hall Textbook of Medical Physiology, Chp 9

4 (27%) of candidates passed this question.

24. Classify antihypertensive agents by their mechanism of action, with a brief outline of each mechanism, and an example of a drug in each class.

There are many valid lists that can be used as a template to answer this question. One such list might broadly classify antihypertensive agents into sympatholytic agents, vasodilators, calcium channel antagonists, renin-angiotensin inhibitors and diuretics. Within each of these categories are a variable number of sub classes, for example diuretics might include thiazides, loop diuretics and potassium sparing diuretics.
A good answer would include such a listing with a brief description of the mechanism of action with respect to the antihypertensive effect and the name of a typical drug that acts in the manner described. Most candidates were able to generate such a list and populate it as required by the question, thus being rewarded with good marks. Poorer answers lacked any logical classification system and were merely a random list of antihypertensive drugs and their actions. Candidates are reminded that organisation within an answer helps in answering the question and achieving marks.

Syllabus: C2b,2e
References: Berne & Levy, Physiology, Ch 2-3

10 (67%) of candidates passed this question.

PAPER 1 and 2 CLOZE QUESTIONS

12 (80%) of candidates passed these questions

PAPER 1 and 2 RANK QUESTIONS

3 (20%) of candidates passed these questions

PAPER 1 and 2 MATCH QUESTIONS

12 (80%) of candidates passed these questions

ORAL SECTION

10 candidates were invited to attend the oral section based on their written marks.

Candidates were presented with the following information (shown in *Italics*) during the two minute reading time.

VIVA 1

This station will explore knowledge of beta adrenoreceptor antagonists
A 50 year-old man is admitted to intensive care after a suspected myocardial infarction while undergoing gastrectomy for carcinoma of the stomach. Cardiologists have recommended metoprolol 50 mg orally bd. Describe the pharmacokinetics of metoprolol. What parenteral dose would you use for this patient?

Candidates were provided with a clinical scenario of a patient unable to take oral formulation of metoprolol and asked to describe the pharmacology associated with an alternative, intravenous preparation, and contrast it with the oral preparation. Candidates were also asked to discuss metoprolol associated adverse effects and their knowledge of agonist – antagonists relationships.

Candidates struggled most with applying, and explaining the relevance of, basic pharmacological principles to account for fundamental clinical applications. Dose response curves were also not covered well.

8 (80%) of candidates passed this VIVA

VIVA 2

This viva will test your knowledge of cardiac physiology and blood pressure measurement.
Outline the factors that affect cardiac output.

This viva tested the candidates' knowledge of cardiovascular physiology, specifically determinants of cardiac output, ventricular stroke work, volume loops, etc. It also tested knowledge of invasive arterial pressure measurement, including that relating to ideal design features of measuring systems and sources and types of errors of measurement.

Candidates seemed to only have a superficial understanding of cardiac output and it's determinants, they lacked depth in their explanations and were less familiar with right sided heart pressures and function. Measurement principles were much better covered.

7 (70%) of candidates passed this VIVA

VIVA 3

This station will explore your knowledge of the physiology associated with the interpretation of Blood Gases and oxygen analysis.
How would you interpret this Arterial Oxygen Tension?

P_aO_2 = 24.6 mmHg (3.2 kPa)

This viva tested the candidates' knowledge of hypoxaemia, associated respiratory physiology and oxygen measurement. Specifically measurement of oxygen tension, the alveolar gas equation and physiological responses to hypoxia.

Measurement of oxygen tension, in particular the principles behind the Clark electrode, was well done. The area candidates struggled the most was explaining and integrating arterial blood gases and the physiological principles surrounding them.

6 (60%) of candidates passed this VIVA

VIVA 4

This station will explore the pharmacology of opioid drugs.
An elderly man has been admitted after an emergency laparotomy. He is on an infusion of morphine at 5 mg/hr. His serum creatinine has doubled overnight and he is oliguric.
What are the pharmacological effects of morphine in this patient and how are they brought about?

Similarly in this viva, candidates struggled with an applied knowledge of basic pharmacological principles relating to commonly used drugs. Mechanisms of action of opioids was also an area of weakness.

8 (80%) of candidates passed this VIVA

VIVA 5

This viva will explore your knowledge of Cerebral Blood Flow and the pharmacology of benzodiazepines.
What is the normal Cerebral Blood Flow and what are its determinants?

Candidates had a good knowledge of cerebral blood flow, although struggled to graphically represent the relationship of CBF with, for example changes in PaCO2. Questions relating to effects of benzodiazepines were also well answered.

7 (70%) of candidates passed this VIVA

VIVA 6

This viva will test your knowledge on blood coagulation, and the pharmacology of heparin.

Candidates had a good knowledge of the coagulation cascade. Heparin pharmacology proved to be an area of weakness, particularly concepts relating to loading dose, and it's dose-response characteristics.

6 (60%) of candidates passed this VIVA

VIVA 7

This viva will test your knowledge about the anatomy of the internal jugular vein. This viva will also test your knowledge of statistics.

Describe the anatomical landmarks for cannulation of the internal jugular vein

Candidates had only a very superficial knowledge of the anatomy of the internal jugular vein, particularly surface anatomy and it's course within the neck. Knowledge in very basic statistics (eg medians, means, measures of distribution, box plots) was very disappointing.

4 (40%) of candidates passed this VIVA

VIVA 8

This question will examine your knowledge of the functional anatomy and physiology of the Renal Circulation.

Draw, and label, the structure of the Nephron, including the circulation.

Most candidates had some level of knowledge of the renal circulation, but lacked depth in understanding how anatomy relates to function, blood oxygen tension within the kidney, autoregulation and graphically representing GFR and it's determinates.

6 (60%) of candidates passed this VIVA

Summary of the Examination

The CICM Primary Examination explores the knowledge of the basic sciences that forms the basis to Intensive Care practice. A detailed syllabus has been developed and forms the foundation for the knowledge required for this Examination. All questions are sourced directly from that syllabus.

Candidates are reminded to read each question very carefully, and tailor their answer to the question asked. For example candidates, would not be given marks for mentioning clinical signs, diseases and treatments when a question asks for physiological causes, mechanisms or effects.

The CICM Primary examination is an integrated examination of the basic sciences. Thus candidates will encounter questions that would require them to think broadly and provide an answer that integrates various physiological and pharmacological mechanisms, at times in the context of commonly encountered clinical circumstances within the ICU. Wherever possible, candidates should provide definitions, to illustrate their answers with examples, and when asked, to apply the basic sciences in the context of critical illness.

Anatomy and statistics are also important components of this exam, and remain an area of weakness amongst all candidates. Structured and well organised answers optimise the candidate's opportunity to gain marks. Candidates must be able to accurately illustrate through graphs and figures for very fundamental aspects of pharmacology and physiology if they are to be successful at this exam.

Candidates are encouraged to discuss their level of preparedness, and to trial written and oral questions, with their Supervisor of Training and other CICM Fellows, prior to undertaking the CICM Primary Examination.

On behalf of the Examination Panel, I would like to congratulate the successful candidates at this CICM Primary Examination.

A/Prof Arthas Flabouris
Chair
Primary Examination Committee

Circulation:

Board of College
Supervisors of Intensive Care Training
Regional Education Offices
Panel of Examiners
Course Supervisors
Registered Trainees