

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (ANAESTHESIOLOGY) FINAL EXAMINATION

MARCH 2015

Date : 13th March 2015

Time : 1.00 p.m. – 4.00 p.m.

LONG ESSAY QUESTIONS

Answer any **three** questions.

Answer each question **in a separate book.**

1. In a patient undergoing a live donor renal transplantation
 - 1.1. How do you assess organ compatibility between a live donor and a recipient? (10%)
 - 1.2. What are the important considerations in the history and examination of the recipient? (30%)
 - 1.3. List the investigations you would request for anaesthetic management of the recipient indicating the changes expected. (20%)
 - 1.4. Describe the role of the anaesthetist in the perioperative period to ensure a well-functioning transplanted kidney. (40%)

2.
 - 2.1. What are the anatomical abnormalities found in Congenital Diaphragmatic Hernia (CDH)? (10%)
 - 2.2. List the steps of post delivery resuscitation of a prenatally diagnosed fetus with CDH. (20%)
 - 2.3. Briefly describe the important aspects of pre surgical care of this neonate in the Neonatal Intensive Care Unit. (30%)
 - 2.4. How would you anaesthetise this neonate for correction of CDH? (40%)

3. A 40 year old male was admitted to the ICU following rapidly deteriorating respiratory distress due to atypical pneumonia. His SpO₂ was 80% while on high flow O₂.
 - 3.1. How do you diagnose and assess the severity of Acute Respiratory Distress Syndrome (ARDS)? (10%)
 - 3.2. What initial measures would you take to improve the oxygenation of this patient? (40%)
 - 3.3. What are the other corrective measures that can be done if the patient develops refractory hypoxemia? (20%)
 - 3.4. What other supportive care is needed for this critically ill patient? (30%)

4. A 39 year old multigravid mother with a term pregnancy was in labour following artificial rupture of membranes. She complained of sudden onset shortness of breath. On examination she was drowsy, cyanosed, dyspnoeic, BP 60/40 mmHg and showed evidence of Disseminated Intravascular Coagulation (DIC).
 - 4.1. What is the most likely diagnosis? (5%)
 - 4.2. Briefly outline the pathophysiology of this condition. (15%)
 - 4.3. Outline the immediate management of this patient. (40%)
 - 4.4. Discuss further management of this patient during the next 48 hours. (40%)

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MARCH 2015

Date : 16th March 2015

Time : 1.00 p.m. – 4.00 p.m.

SHORT ANSWER QUESTIONS

Candidates are required to answer all twelve questions.

Candidates who fail to attempt any one question will not pass the examination.

All questions carry equal marks.

Answer each part in a separate book marked A and B.

PART A

1. A 27 year old male patient has sustained facial injuries following a road traffic accident. On arrival at the accident and emergency department he is found to have a low O₂ saturation due to an obstructed air way.
 - 1.1. What are the possible mechanisms of air way obstruction in this patient? (30%)
 - 1.2. What other issues make air way management difficult in this patient? (30%)
 - 1.3. Mention the techniques available to secure a definitive airway giving advantages and disadvantages. (40%)

2.
 - 2.1. Explain the systemic derangements seen in a patient with intestinal obstruction. (40%)
 - 2.2. How would you correct them prior to surgery? (20%)
 - 2.3. Outline your plan of management in the postoperative period? (40%)

3 A 3 year old child presents to the A&E with sudden onset breathlessness of 2 hours duration following foreign body inhalation

On examination he is drowsy, tachypnoeic, heart rate 170/minute, reduced movements and absent breath sounds on the right side, oxygen saturation on air is 90%. Surgeon decides to do an urgent rigid bronchoscopy.

3.,1. Outline the initial management in the A&E. (20%)

3.2. What are the important aspects that you would consider when anaesthetizing this patient. (40%)

3.3. List the methods available to ensure adequate gas exchange during this procedure giving their advantages and disadvantages. (40%)

4.

4.1. Draw a line diagram to show the formation of the Brachial plexus. (20%)

4.2. On the same diagram indicate the different places where the local anaesthetic will be deposited with different approaches ? (10%)

4.3. What are the absolute contraindications for the interscalene block? (10%)

4.4. List the steps that you would follow when performing an interscalene block using the ultrasound. (40%)

4.5. What are the complications of interscalene block? (20%)

5

- 5.1. What are the co morbidities you would expect in patients presenting for elective abdominal vascular surgery? (20%)
- 5.2. What would you consider as elevated cardiac risk factors in the above group of patients ? (40%)
- 5.3. How would you preoperatively prepare a 70 year old male patient coming for elective endovascular repair of an abdominal aortic aneurysm? (40%)

6. A previously healthy mother at 28 weeks of gestation, is scheduled for a cholecystectomy under general anaesthesia.

- 6.1. What are the main causes of foetal hypoxia in the intra-operative period? (20%)
- 6.2. List the problems that you may encounter in the mother perioperatively.
- 6.3. What are the risks and benefits of a laparoscopic procedure in this patient? (30%)
- 6.4. How would you minimise the risks of laparoscopic procedure in this patient? (30%)

PART B

7.

- 7.1. Give reasons for pain experienced by cancer patients (40%)
- 7.2. What routes are available for the administration of opioids to treat cancer pain? (10%)
- 7.3. What are the possible side effects of morphine in these patients? (20%)
- 7.4. How do you minimize these side effects? (30%)

8.
 - 8.1. What is pulmonary hypertension (PH)? (10%)
 - 8.2. How is pulmonary hypertension clinically classified? (20%)
 - 8.3. What are the symptoms and signs of severe PH? (35%)
 - 8.4. What treatments are available for PH? (35%)

9.
 - 9.1. What is a transducer ? (5%)

 - 9.2. Explain using a diagram how a modern invasive arterial blood pressure monitor transducer works. (40%)

 - 9.3. What are the features of an ideal invasive arterial blood pressure monitoring system? (40%)

 - 9.4. What factors may affect the accuracy of invasive arterial blood pressure monitoring? (15%)

10. A 45 year old normotensive male is undergoing coronary artery bypass grafting (CABG) surgery under cardio pulmonary (CP) by-pass.
 - 10.1. What blood pressure would you consider as adequate for this patient during CP by-pass? Give reasons. (20%)

 - 10.2. How would you minimize oxygen demand to vital organs during CP by-pass? (30%)

 - 10.3. List four (04) CP by-pass related complications that you may see in the post-operative period. (10%)

 - 10.4. What action would you take to minimize these complications? (40%)

11.
 - 11.1. List the physiological mechanisms that prevent aspiration of gastric contents. (15%)
 - 11.2. What are the risk factors for aspiration under general anaesthesia? (45%)
 - 11.3. Briefly describe the risk reduction strategies that can be adopted. (40%)

12. A 40 year old lady is admitted to the neurosurgical ICU with a history of ruptured aneurysm with a GCS of 9 and WFNS Grade IV.
 - 12.1. Outline the initial management in the ICU (40%)
 - 12.2. How do you minimize cerebral ischaemia in this patient? (40%)
 - 12.3. Her GCS improved after several hours and was scheduled for surgery on the following day.

Outline the factors which can cause an intraoperative re-bleed. (20%)