

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (ANAESTHESIOLOGY) FINAL EXAMINATION – MARCH 2021

Date:- 4th March 2021

Time:- 9.30 a.m. – 12.30 p.m.

SHORT ANSWER QUESTIONS

Candidates are required to answer **all twelve (12) questions**.

Candidates who fail to attempt any **one (01)** question will not pass the examination.

Answer each question in a separate book.

PART A

1. A 48-year-old female patient is listed for a laparoscopic cholecystectomy. Her height is recorded at 1.65m (5'5'') and weight as 114kg.

1.1. Estimate her Body Mass Index (BMI). (05%)

1.2. Classify her obesity. (05%)

1.3. Indicate how BMI influences perioperative morbidity and mortality. (10%)

1.4. What health conditions associated with obesity can be identified at pre-assessment? (40%)

1.5. What problems would you encounter on the day of surgery, and how would these be best managed? (40%)

2.

2.1. List the three (03) main groups of antiplatelet agents indicating their mechanisms of action. (30%)

2.2. Formulate a guideline to perform combined spinal epidural anaesthesia (CSE) safely in patients who are on the above drug groups. (35%)

2.3. State the overall incidence of vertebral canal haematoma following central neuraxial block (CNB). (05%)

2.4. How would you diagnose vertebral canal haematoma? (30%)

Contd..../2-

3. A 50-year-old female is scheduled for a parathyroidectomy for long standing hyperparathyroidism.
- 3.1. What are the clinical features of hyperparathyroidism? (15%)
- 3.2. Briefly state how you would optimize her. (30%)
- 3.3. List the intra operative concerns of this patient. (30%)
- 3.4. How would you manage this patient postoperatively? (25%)
4. A 54-year-old patient is admitted to the Emergency Department following acute ischaemic stroke, confirmed by CT brain. Thrombolysis has been commenced and referral to a tertiary center has been made for thrombectomy.
- 4.1. Explain how secondary brain injury occurs in this patient. (20%)
- 4.2. What are the specific indications for intubation and mechanical ventilation in this patient? (30%)
- 4.3. Enumerate the physiological parameters that you will aim to achieve for transfer. (20%)
- 4.4. List the categories of drugs you would take on the transfer, giving examples. (30%)
5. A 48-year-old lady is referred to the pain management clinic with a diagnosis of trigeminal neuralgia. There is a history of a suicidal attempt due to severe pain.
- 5.1. What diagnostic criteria would assist you to confirm the diagnosis? (30%)
- 5.2. List the causes of trigeminal neuralgia. (30%)
- 5.3. Outline the treatment modalities available. (40%)
- 6.
- 6.1. What are the “expanded donor criteria” for renal transplantation? (10%)
- 6.2. A 50-year-old male is scheduled for a cadaveric renal transplantation. Outline the important pre-operative considerations. (35%)
- 6.3. List the advantages and disadvantages of preoperative haemodialysis in this patient? (10%)
- 6.4. Outline the specific intraoperative management strategies. (45%)

PART B

7.

7.1. What are the branches of the superficial cervical plexus? (15%)

7.2. Outline the important anatomical relations of the superficial cervical plexus in the anterior neck. (30%)

7.3. How would you perform an ultrasound guided superficial (intermediate) cervical plexus block? (35%)

7.4. List the complications of this block, briefly stating the measures that you would take to prevent them. (20%)

8. A 6-year-old, 20kg child presents for emergency appendicectomy. On examination the patient is dehydrated.

8.1. How do you assess the degree of dehydration? (30%)

8.2. Briefly describe initial fluid resuscitation if the child is severely dehydrated. (40%)

8.3. What are the other perioperative concerns in this child? (30%)

9. A 75-year-old male is scheduled for a right bi-lobectomy.

9.1. What features in the history will indicate an increased perioperative morbidity and mortality in this patient? (30%)

9.2. What factors would you consider in deciding on an appropriate size double lumen tube (DLT) for this patient? (15%)

9.3. List the possible mechanisms of lung injury during one lung ventilation and mention how you would minimise these effects. (30%)

9.4. Outline the important aspects in the post-operative management. (25%)

Contd.../4-

10. A 30-year-old lady, two weeks after a Caesarean section is admitted to the emergency treatment unit (ETU) with acute onset chest pain. Her heart rate is 120/minute, blood pressure is 80/50 mmHg, respiratory rate is 32/minute and SpO₂ is 94% with high flow O₂ mask. Acute venous thromboembolism (VTE) is suspected by the medical officers at ETU.
- 10.1. List the changes of coagulation in pregnancy. (20%)
- 10.2. What is the level of risk of VTE during pregnancy and post-partum period compared to non-pregnant state? (10%)
- 10.3. Name the recommended investigations and indicate how they would support the diagnosis. (30%)
- 10.4. What are your key points in the initial management of this patient? (40%)
11. A 65-year-old lady with impending respiratory failure is referred to ICU with suspected Guillain Barre Syndrome (GBS).
- 11.1. What is GBS and what are its sub types? (15%)
- 11.2. Outline the clinical features suggestive of GBS. (25%)
- 11.3. List the investigations necessary to aid the diagnosis. (10%)
- 11.4. Briefly describe the important aspects in ICU management of this patient. (50%)
12. A 25-year-old patient is awaiting drainage of a dentoalveolar abscess due to an infected wisdom tooth.
- 12.1. Outline the potential pathways of spread of infection and its consequences. (10%)
- 12.2. What specific preoperative evaluation would be useful regarding his airway? (30%)
- 12.3. What difficulties will you encounter during his airway management? (40%)
- 12.4. What are your extubation strategies? (20%)

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MD (ANAESTHESIOLOGY) FINAL EXAMINATION – MARCH 2021

Date:- 5th March 2021

Time:- 9.30 a.m. – 12.30 p.m.

LONG ESSAY QUESTIONS

Answer **any three (03) questions.**

Answer each question in a separate book.

1. A 25-year-old healthy primipara at term is in established labour. The obstetrician has decided to perform a category one Caesarean section on her. You are the anaesthetist on duty in the labour room.
 - 1.1.
 - 1.1.1. What do you understand by category one Caesarean section (10%)
 - 1.1.2. List the indications. (10%)
 - 1.2. Outline your specific preoperative concerns and the actions to rectify them. (20%)
 - 1.3.
 - 1.3.1. What are the absolute indications for general anaesthesia in this patient? (05%)
 - 1.3.2. How would you minimize the anticipated major problems specific to general anaesthesia? (25%)
 - 1.4.
 - 1.4.1. When would you give a regional anaesthetic to this patient? (05%)
 - 1.4.2. Briefly describe the modifications you would include to the regional anaesthetic options. (25%)

Contd.../2-

2. A 30-year-old previously healthy male was admitted to accident and emergency following a motor bike accident with blunt trauma to chest and abdomen.
On admission he was pale, respiratory rate 30/minute, pulse rate 130/minute, blood pressure 70/40 mmHg and GCS 13/15. SpO₂ on air 80%.
- 2.1. Briefly outline your initial management. (25%)
- 2.2. What are the likely causes of desaturation in this patient? (10%)
- 2.3. Damage control surgery was performed following initial management. It revealed a grade 3 liver laceration with 1.5litres of haemoperitoneum. Liver was packed and abdomen was closed.
He was admitted to intensive care unit for further management. Two hours later his bladder pressure was noted as 22 mmHg.
- 2.3.1 Enumerate the risk factors for intra-abdominal hypertension (IAH) in this patient. (10%)
- 2.3.2. State the pathophysiological effects of IAH. (25%)
- 2.3.3. What measures could you take to minimise IAH? (15%)
- 2.4. What are the other possible complications that could occur during the next 24 hours? (15%)
3. A 72-year-old patient is admitted to the ICU after exploratory laparotomy and bowel resection for acute intestinal obstruction.
He is intubated and ventilated. His pulse rate is 110/minute, blood pressure is 90/45 mmHg and his body temperature is 38.5⁰C. His septic markers are elevated. Sepsis-induced acute kidney injury (AKI) is diagnosed.
- 3.1. Outline the pathophysiological mechanisms of sepsis-induced AKI. (20%)
- 3.2. What is the Kidney Disease: Improving Global Outcomes (KDIGO) definition of AKI? (15%)
- 3.3. What are the limitations of the parameters used in the above definition? (20%)
- 3.4. Name two (02) novel biomarkers that enable early detection of AKI. (05%)
- 3.5. Enumerate the steps you would take to prevent worsening of AKI in this patient. (20%)
- 3.6. Briefly explain how you would choose appropriate fluid therapy for this patient indicating the physiological basis. (20%)

4. A 74-year-old man, is admitted to the ward with an episode of colicky abdominal pain. Following assessment, he is diagnosed to have an obstructing sigmoid carcinoma and is listed for a laparotomy. The patient has a history of dementia. He is on losartan potassium for hypertension which is well controlled.
- 4.1. List the preoperative concerns. (20%)
- 4.2. A decision is made to carry out surgery in the patient's best interest.
- List four (04) aspects that should be considered with regard to dementia, when making the above decision. (10%)
- 4.3. He is admitted to the surgical intensive care unit for post-operative care. On the second day he becomes confused and aggressive. A diagnosis of post-operative delirium is made.
- 4.3.1. What are the risk factors for post-operative delirium? (15%)
- 4.3.2. What are the possible pathophysiological mechanisms? (05%)
- 4.4. As his behavior becomes aggressive, he requires pharmacological therapy and physical restraint.
- 4.4.1. Briefly describe the management of this patient. (15%)
- 4.4.2. What factors would you consider before applying physical restraint? (05%)
- 4.5. What intra and post-operative preventive measures would reduce the risk of post-operative delirium in this patient? (30%)