

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (ANAESTHESIOLOGY) FINAL EXAMINATION – MARCH 2018

Date :- 8th March 2018

Time :- 1.00 p.m. – 4.00 p.m.

LONG ESSAY QUESTIONS

Answer any three questions.

Answer each question in a separate book.

1. Morbidly adherent placenta has become an important cause of maternal morbidity and mortality in current obstetric practice.
 - 1.1. Outline the different types of morbidly adherent placentae and name the identified risk factors for its occurrence. (10%)
 - 1.2. Enumerate the recommended care bundle in the management of this condition. (15%)
 - 1.3. What are the different methods of anaesthesia used? Justify the selection of each method. (25%)
 - 1.4. Describe how you would minimize the complications of rapid major bleeding during surgery. (50%)

2. A 65-year-old male patient with a diagnosed adenocarcinoma of the lower third of oesophagus is scheduled for minimally invasive oesophagectomy (MIO). He has been given a course of neoadjuvant chemotherapy prior to surgery.
 - 2.1. What are the concerns in preoperative evaluation of this patient? (15%)
 - 2.2. Outline the measures you would take to optimize him before surgery. (20%)
 - 2.3. What are the benefits of MIO over open oesophagectomy? (10%)
 - 2.4.
 - 2.4.1. Enumerate the sequence of surgical steps involved in MIO. (5%)
 - 2.4.2. Describe the anaesthetic challenges you would encounter during MIO indicating appropriate measures taken to minimize or overcome them. (50%)

Contd..../2-

3. Define the optimal dose of an analgesic agent.

~~3.1~~ 3.1. What are the disadvantages of a (15%)

3.1.1. sub optimal dose?

3.1.2. supra optimal dose?

3.2. What are the adverse effects of inadequate post-operative analgesia? (20%)

3.3. A 16-year-old patient is admitted to the HDU after correction of scoliosis.

3.3.1. How do you assess pain in this patient? (10%)

3.3.2. List the factors that influence the assessment of pain. (10%)

3.3.3. What factors would you consider in selecting an analgesic drug for patient controlled analgesia (PCA)? (20%)

3.3.4. How do you set up a PCA for this patient? (15%)

3.3.5. What safety precautions would you consider? (10%)

4. A 45-year-old male with alcoholic liver disease is scheduled for a sigmoid colectomy.

4.1. What are the main functions of the liver? (20%)

4.2. What are your concerns regarding perioperative management of this patient? (30%)

4.3. This patient develops features of acute liver failure following surgery,

4.3.1. How would you confirm the diagnosis? (10%)

4.3.2. Describe the management. (40%)

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Date :- 9th March 2018

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.
 - 1.1. Describe the anatomy of the trachea and its relationships to other important structures. (40%)
 - 1.2. List the indications for tracheostomy. (30%)
 - 1.3. What are the advantages of tracheostomy over prolonged endotracheal intubation? (30%)

2.
 - 2.1. What are the diagnostic criteria of Acute Respiratory Distress Syndrome (ARDS)? (30%)
 - 2.2. List the causes. (10%)
 - 2.3. Briefly describe the ventilatory strategies in the management of a patient suffering from severe ARDS. (60%)

3.
 - 3.1. What are the mechanisms of action of
 - 3.1.1. unfractionated heparin? (25%)
 - 3.1.2. low molecular weight heparin? (10%)
 - 3.2.
 - 3.2.1. What is heparin induced thrombocytopenia (HIT)? (25%)
 - 3.2.2. How is it diagnosed? (30%)
 - 3.3. Give two (02) alternative groups of drugs, with an example, which can be used for short-term anticoagulation. (10%)

4. A patient in ICU following clipping of a cerebral aneurysm, developed hemiplegia and aphasia on the 5th post-operative day. His GCS dropped to 11/15 from 14/15.
 - 4.1. What is the most probable diagnosis? (5%)
 - 4.2. Briefly describe the possible pathophysiological changes of the above condition. (45%)
 - 4.3. What are the specific considerations in the management of this patient? (50%)

5. A 40 year old man has been brought to the resuscitation room following a road traffic accident. He has been a passenger in a trishaw which got struck by a lorry from behind. His GCS is 15/15, pulse rate 110/minute, BP 80/60 mmHg. He is pale and has tender bilateral iliac crests. Trauma team suspects a pelvic injury.
 - 5.1. Outline your initial management. (50%)
 - 5.2. What specific investigations would be useful in the management of this patient? (30%)
 - 5.3. List the surgical management options. (20%)

6. You have been requested to assess a 60 year old male in the surgical ward 7 days following a Whipple's procedure. He has been on parenteral nutrition for 5 days. He responds only to pain and has laboured, deep breathing with a respiratory rate of 20/minute. His cardiovascular parameters are normal.

Renal and liver functions are normal.

RBS 234 mg%

A blood gas on 35% O₂ shows

pH	7.1
pCO ₂	20 mmHg
PaO ₂	150 mmHg
BE	-24 mEq/L
HCO ₃ ⁻	6 mEq/L
Lactate	1.5 mmol/L

- 6.1. What is the probable diagnosis? (10%)
- 6.2. How would you confirm the diagnosis? (30%)
- 6.3. List the steps involved in the management. (60%)

PART B

- 7.
- 7.1. State the physical principle of exhaled CO₂ (capnography) monitoring. (10%)
- 7.2. What are the drawbacks of this technique? (15%)
- 7.3. State the advantages and disadvantages of side stream analysers. (35%)
- 7.4. How does the use of capnography reduce morbidity and mortality? (40%)

8.
 - 8.1. Define non-invasive respiratory support? (10%)
 - 8.2. List the current methods and the interface devices used. (15%)
 - 8.3. What are the advantages of non -invasive ventilation (NIV) over invasive mechanical ventilation? (25%)
 - 8.4. Briefly describe the use of NIV in the perioperative period. (50%)

9. A 3 day old, full-term born neonate is admitted to the surgical ward with a history of bilious vomiting and abdominal distention. The surgical team has diagnosed malrotation of the mid gut.
 - 9.1. How would you clinically diagnose severe dehydration in this neonate? (20%)
 - 9.2. Outline your initial resuscitation. (30%)
 - 9.3. What are the targets of resuscitation? (30%)
 - 9.4. How would you correct hypokalaemia? (20%)

10. A 76 year old female has undergone Dynamic Hip Screw (DHS) insertion for a proximal femur fracture one week ago. You are called to see her as she is in an acute confusional state.
 - 10.1. What are the risk factors for development of Post Operative Cognitive Dysfunction (POCD)? (30%)
 - 10.2. What measures could be used to prevent POCD? (40%)
 - 10.3. How do you treat this condition? (30%)

11. A 68 year-old female is undergoing an aortic valve replacement for severe aortic stenosis. Her co-morbidities include hypertension, type 2 diabetes and emphysema.

11.1. What are the important symptoms of severe aortic stenosis? (20%)

11.2. Name the currently used risk scoring model to stratify this patient's risk for anaesthesia and surgery. (5%)

Operation was complicated requiring repair of a right ventricular injury and a single graft coronary artery bypass. Inotropic support and intra-aortic balloon pump was required to separate from cardiopulmonary bypass. In the ICU, she becomes progressively hypotensive needing escalation of inotropic support.

11.3. Enumerate the causes for her haemodynamic instability. (35%)

11.4. Outline the management of each. (40%)

12. A 65 year old patient is awaiting colonic surgery for malignancy.

12.1. Identify pre operative risk factors that would lead to a poor postoperative outcome in this patient. (20%)

12.2. Outline the methods available to assess the functional capacity of this patient. (30%)

12.3. How can you improve the functional capacity of this patient? (50%)