

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (ANAESTHESIOLOGY) FINAL EXAMINATION – MARCH 2023

Date:- 16th March 2023

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.

All questions carry equal marks.

Answer each question in a separate book.

PART A

1. An 80-year-old man with reduced left ventricular function (EF 35%) is undergoing an emergency laparotomy for bowel obstruction. Oesophageal Doppler is used for advanced haemodynamic monitoring.

1.1. Briefly describe the physical principles of oesophageal Doppler. (30%)

1.2. Draw and label the diagram of an oesophageal Doppler waveform. (15%)

During surgery his blood pressure dropped to 60/40 mmHg and heart rate increased to 140 beats/minute.

1.3. What information would be obtained from oesophageal Doppler to manage this situation? (40%)

1.4. List the advantages and disadvantages of oesophageal Doppler. (15%)

2. A 65-year-old man is scheduled for right hepatectomy for a metastatic colonic carcinoma. The patient had a hemicolectomy six months ago.

2.1. What are the specific concerns in the preoperative assessment of this patient? (30%)

2.2. Outline the specific intraoperative considerations. (50%)

2.3.

2.3.1. Name two (02) surgical techniques that are considered as minimally invasive liver resection (MILR). (05%)

2.3.2. What are the benefits of MILR over conventional method? (15%)

3. A 60-year-old ASA 1 man with a buccal mucosal malignancy is undergoing a right hemi mandibulectomy and a fibular free flap reconstruction without prior neoadjuvant chemo-radiotherapy. Controlled hypotensive anaesthesia is planned.
- 3.1. Indicate with reasoning, to what level his blood pressure can safely be lowered. (10%)
 - 3.2. What measures can you take to achieve controlled hypotension? (30%)
 - 3.3. How would you minimise venous bleeding? (10%)
 - 3.4. Indicate clinical and biochemical targets you would maintain to ensure adequate organ perfusion during controlled hypotension (20%)
 - 3.5. What intraoperative steps would you take to improve flap viability? (30%)
4. A 10-month-old, 8kg infant is scheduled for repair of cleft palate.
- 4.1. What are the preoperative concerns in this infant? (20%)
 - 4.2. Briefly describe the intraoperative management. (40%)
 - 4.3. Patient desaturates in the recovery area after extubation.
List the possible causes and outline the management. (40%)
5. A 50-year-old patient is awaiting excision of cerebello-pontine angle tumour (vestibular schwannoma) in the sitting position with intraoperative neuromonitoring (IONM). It is planned as a combined surgery with an ENT surgeon.
- 5.1. Outline specific concerns related to sitting position. (35%)
 - 5.2. What are your intraoperative considerations to ensure accuracy of neuromonitoring (IONM) in this patient? (45%)
 - 5.3. List possible post operative complications in this patient. (20%)
6. A 62-year-old woman with a 5-year history of multiple myeloma is scheduled for laparoscopic cholecystectomy.
- 6.1. What are the preoperative concerns in relation to multiple myeloma? (40%)
 - 6.2. Outline the intraoperative measures that can be taken to improve patient outcome. (60%)

PART B

- 7.
- 7.1.
- 7.1.1. Draw and label the femoral triangle with its anatomical relations. (30%)
- 7.1.2. Illustrate the sensory distribution of the nerves that are blocked at the femoral triangle. (20%)
- 7.2. Outline the ultrasound guided technique for fascia iliaca block. (50%)
8. A 65-year-old previously unscreened man was admitted to a base hospital following a road traffic accident. He had sustained bilateral chest injuries with multiple rib fractures. He was haemodynamically stable and his SpO₂ was 80% on air.
A decision was made to transfer him to a tertiary care hospital 100km away for specialized management.
- 8.1. Outline how you would organize a safe transfer for him. (45%)
- 8.2. List three (03) indications for rib fixation. (15%)
- 8.3. What are the specific anaesthetic concerns for rib fixation? (25%)
- 8.4. Enumerate the factors which predict the morbidity and mortality due to chest injury. (15%)
9. A 40-year-old multipara is rushed to the operating theatre with a systolic blood pressure of 70 mmHg and a heart rate of 140 beats/minute for surgical intervention, 3 hours following normal vaginal delivery.
- 9.1. Outline the current recommended approach for early recognition of haemorrhage. (25%)
- 9.2. Incorporation of the postpartum haemorrhage care bundles have been recommended to improve outcomes.
What measures of the care bundle would have prevented this emergency situation?
- 9.2.1. in the early bleeding phase (20%)
- 9.2.2. in the refractory bleeding phase (20%)
- 9.3. What important intraoperative measures would you take to minimize lethal complications of haemorrhage? (35%)

10. A 60-year-old 50 kg man is ventilated for 1 week following aspiration pneumonia. He is on SIMV pressure control mode with FiO_2 0.4, pressure support 12 cmH_2O and PEEP 6 cmH_2O . His SpO_2 is 97%.

It is decided to start him on a spontaneous breathing trial with inspiratory pressure support (SBT/PS).

- 10.1. Enumerate the criteria to assess his readiness for liberation from mechanical ventilation. (35%)
- 10.2. List four (04) parameters that need to be adjusted in setting up the ventilator for SBT/PS. State how you would adjust them for this patient. (20%)
- 10.3. State three (03) measurements with expected values, related to lung mechanics which indicate successful SBT of 30 minutes duration. (15%)
- 10.4. Outline how you would identify failure of SBT. (30%)
11. A 50-year-old woman with longstanding severe mitral regurgitation is scheduled for mitral valve surgery.
- 11.1. Outline the pathophysiology of mitral regurgitation. (20%)
- 11.2. List the features suggestive of worsening mitral regurgitation. (30%)
- 11.3. What are the intraoperative haemodynamic goals for this patient? (30%)
- 11.4. What is the role of transoesophageal echocardiography in the perioperative management of mitral valve surgery? (20%)
12. A 50-year-old patient with metastatic lung disease had undergone right thoracotomy for lobectomy. Few months after surgery, patient complains of severe pain along the surgical site and is referred to the pain clinic.
- 12.1. What criteria should be fulfilled to diagnose chronic post surgical pain (CPSP)? (20%)
- 12.2. Enumerate the risk factors for the occurrence of CPSP. (40%)
- 12.3. What measures should have been taken to minimise development of CPSP in this patient? (40%)