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PRACTICE QUESTIONS

Dubai Health Authority (DHA)

ANAES

Specialist Anaesthesia

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for Dubai Health Authority (DHA) ANAES , each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, ANAES
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

QUESTION 1

SINGLE CHOICE

A 62-year-old patient is scheduled for elective total knee arthroplasty. He has a history of ischaemic heart disease, a permanent pacemaker, hypertension, and type 2 diabetes. His functional capacity is less than 4 METs. According to the AHA/ACC and ESA guidelines on preoperative cardiac evaluation for non-cardiac surgery, which of the following is the MOST appropriate next step?

- ☐ A Proceed with surgery without further cardiac testing because the surgery is intermediate risk
- ☐ B Cancel the surgery and refer the patient for coronary revascularization before any further evaluation
- ☒ C Optimize medical therapy, continue the existing cardiovascular medications, and proceed with surgery if the patient is clinically stable and no active cardiac condition is identified
- ☐ D Order a dobutamine stress echocardiogram before any further management decision

ANSWER C

WHY For patients with limited functional capacity (<4 METs) undergoing intermediate-risk non-cardiac surgery such as total knee arthroplasty, the guidelines emphasize identification and management of active cardiac conditions, optimization of medical therapy (beta-blockers, statins, antiplatelet agents as appropriate), and continuation of existing cardiovascular medications. Routine non-invasive stress testing is NOT recommended unless there are clinical risk markers or an active cardiac condition. Total knee arthroplasty is intermediate (not high) risk, and the appropriate step is clinical optimization rather than invasive testing or surgery cancellation.

QUESTION 2

SINGLE CHOICE

Which of the following intravenous induction agents has the MOST favourable haemodynamic profile for a patient with severe aortic stenosis undergoing induction of general anaesthesia?

- ☐ A Thiopentone
- ☐ B Propofol
- ☒ C Etomidate
- ☐ D Ketamine

ANSWER C

WHY Etomidate has minimal effect on systemic vascular resistance, heart rate, and contractility, making it the most haemodynamically stable induction agent in patients with fixed cardiac output states such as severe aortic stenosis. Thiopentone and propofol cause significant venodilation and reduction in SVR, which can precipitate profound hypotension in these preload- and afterload-dependent patients. Ketamine, while preserving sympathetic tone in most patients, increases heart rate, contractility, and afterload, which can reduce coronary perfusion in severe aortic stenosis.

QUESTION 3

SINGLE CHOICE

A patient is undergoing an ultrasound-guided axillary brachial plexus block. After injection of 20 mL of local anaesthetic, the patient reports sudden tinnitus, perioral numbness, and a metallic taste. What is the MOST likely cause and the IMMEDIATE management?

- ☐ A High spinal anaesthesia; manage with airway support and vasopressors
- ☒ B Intravascular injection with systemic local anaesthetic toxicity; stop injection, manage airway, and administer 20% lipid emulsion
- ☐ C Phrenic nerve block with hemidiaphragmatic paralysis; manage with supplemental oxygen
- ☐ D Anaphylaxis to the local anaesthetic; administer intramuscular adrenaline

ANSWER B

WHY Tinnitus, perioral numbness, and metallic taste are early signs of central nervous system toxicity from intravascular injection of local anaesthetic. According to the AAGBI/ASA guidelines on management of severe local anaesthetic toxicity, the immediate management is to stop the injection, call for help, manage the airway, and administer 20% lipid emulsion bolus and infusion. Although anaphylaxis is a possibility, the constellation of CNS symptoms after injection in the axillary approach is most consistent with LAST. High spinal would present with bilateral upper extremity and respiratory symptoms, and phrenic nerve block is uncommon with the axillary approach.

QUESTION 4

SINGLE CHOICE

Which of the following monitoring modalities is the MOST reliable indicator of adequate tissue perfusion during major abdominal surgery in a patient with significant cardiac disease?

- ☐ A Mean arterial pressure maintained above 65 mmHg
- ☐ B Central venous pressure between 8 and 12 mmHg
- ☒ C Serial lactate measurements and mixed/central venous oxygen saturation
- ☐ D Urine output of more than 0.5 mL/kg/hr

ANSWER C

WHY While MAP, CVP, and urine output are components of perioperative monitoring, they are unreliable surrogate markers of tissue perfusion, particularly in patients with significant cardiac disease. Serial lactate measurements, combined with mixed (SvO₂) or central venous (ScvO₂) oxygen saturation, are considered more reliable indicators of the balance between oxygen delivery and consumption and are recommended by the ESA and Surviving Sepsis guidelines for assessing adequacy of tissue perfusion.

QUESTION 5

SINGLE CHOICE

A 45-year-old patient with no comorbidities is undergoing an upper abdominal laparotomy. According to enhanced recovery after surgery (ERAS) principles and multimodal analgesia, which of the following is the MOST appropriate intraoperative analgesic regimen?

- ☐ A High-dose intraoperative opioid (morphine 0.3 mg/kg) followed by as-needed opioids postoperatively
- ☒ B Multimodal regimen: paracetamol, an NSAID (if no contraindication), wound infiltration with local anaesthetic, and an opioid-sparing technique such as epidural analgesia
- ☐ C Patient-controlled analgesia with morphine as the sole modality
- ☐ D Avoidance of all analgesics intraoperatively to prevent opioid-induced hyperalgesia

ANSWER B

WHY ERAS guidelines for upper abdominal surgery recommend a multimodal opioid-sparing analgesic regimen, which typically includes paracetamol, an NSAID (when not contraindicated), regional techniques such as epidural analgesia or wound catheters, and opioids only as rescue medication. This approach improves recovery, reduces opioid-related side effects, and facilitates early mobilisation. High-dose opioid-only regimens and PCA morphine as a sole modality are contrary to ERAS principles, and complete avoidance of analgesics is inappropriate.

QUESTION 6

MULTIPLE CHOICE

Which of the following are accepted components of the Surviving Sepsis Campaign 'hour-1 bundle' for the initial management of septic shock? (Choose two.)

- ☒ **A Administer 30 mL/kg crystalloid fluid bolus for hypotension or lactate ≥ 4 mmol/L**
- ☐ B Obtain blood cultures before administration of antibiotics
- ☒ **C Administer broad-spectrum antibiotics within 1 hour of recognition**
- ☐ D Initiate vasopressors only after 6 hours of failed fluid resuscitation

ANSWER A • C

WHY The Surviving Sepsis Campaign 2018/2021 hour-1 bundle combines five elements: measure lactate, obtain blood cultures, administer broad-spectrum antibiotics, begin rapid administration of 30 mL/kg crystalloid for hypotension or lactate ≥ 4 mmol/L, and apply vasopressors if the patient is hypotensive during or after fluid resuscitation to maintain MAP ≥ 65 mmHg. The schedule does NOT require waiting 6 hours before starting vasopressors. Blood cultures before antibiotics is desirable but not mandatory if it delays antibiotic therapy.

QUESTION 7

MULTIPLE CHOICE

Which of the following are ABSOLUTE contraindications to neuraxial (spinal or epidural) anaesthesia in the obstetric patient? (Choose two.)

- ☒ **A Patient refusal of the procedure**
- ☐ B Mild thrombocytopenia of $95 \times 10^9/L$ in an otherwise uncomplicated pregnancy
- ☒ **C Active infection at the proposed puncture site**
- ☐ D Previous uneventful spinal anaesthetic one year earlier

ANSWER A • C

WHY Absolute contraindications to neuraxial anaesthesia include patient refusal, coagulopathy or therapeutic anticoagulation with shorter-acting agents, active infection at the puncture site or systemic sepsis, and increased intracranial pressure from a space-occupying lesion. Mild thrombocytopenia of $95 \times 10^9/L$ in an uncomplicated pregnancy (e.g., incidental gestational thrombocytopenia) is generally considered acceptable when stable. A previous uneventful spinal anaesthetic is not a contraindication.

QUESTION 8

SINGLE CHOICE

Which of the following volatile anaesthetic agents has the LOWEST blood:gas partition coefficient, and therefore the FASTEST onset and offset of action?

- ☐ A Sevoflurane
- ☐ B Isoflurane
- ☒ C Desflurane
- ☐ D Halothane

ANSWER C

WHY The blood:gas partition coefficients of the common volatile agents are approximately: desflurane 0.42, sevoflurane 0.65, isoflurane 1.4, and halothane 2.4. Desflurane has the lowest blood solubility and therefore the most rapid uptake, distribution, and elimination. This explains its very fast offset, particularly useful in ambulatory and bariatric anaesthesia. Sevoflurane is the second-fastest and is favoured for inhalational induction because of its low pungency.

QUESTION 9

SINGLE CHOICE

During emergence from general anaesthesia, a patient becomes agitated, hypoxic (SpO₂ 88%), and demonstrates generalised muscle rigidity with hyperthermia (temperature 39.5 °C). End-tidal CO₂ has risen from 35 to 60 mmHg. Which of the following is the MOST appropriate immediate management?

- ☒ **A** Administer intravenous dantrolene 2.5 mg/kg, cool the patient, treat hyperkalaemia, and secure the airway
- ☐ **B** Deepen the anaesthetic with additional propofol and administer active warming
- ☐ **C** Administer intravenous antibiotics and obtain blood cultures
- ☐ **D** Administer intravenous insulin and dextrose, and start active cooling only

ANSWER A

WHY The clinical picture (hypercapnia, rigidity, hyperthermia, hypoxia during emergence) is classic for malignant hyperthermia. The Malignant Hyperthermia Association of the United States (MHAUS) protocol calls for immediate discontinuation of the triggering agent, administration of dantrolene 2.5 mg/kg bolus (repeated as required), 100% oxygen at high flows, active cooling, correction of hyperkalaemia and acidosis, and aggressive management of arrhythmias. The other options reflect therapies for sepsis, thyroid storm, or anaesthetic emergence reactions, none of which match this presentation.