

Australian and New Zealand College of
Veterinary Scientists

Veterinary Anaesthesia and Analgesia
Sample Multiple Choice Questions

Paper 1

Answer all five (5) multiple choice questions in this section

This section is worth 5 marks. Each question is worth one (1) mark. There is no negative marking.

1. Which sedative drug may cause vasodilation-induced hypotension due to α_1 -adrenoreceptor antagonism?
 - a. Medetomidine
 - b. Midazolam
 - c. Acepromazine
 - d. Tiletamine

2. In which of the following situations would a standard pulse-oximeter be expected to work accurately?
 - a. A dog under general anaesthesia with marked hypoventilation following a fentanyl bolus.
 - b. An obtunded dog suffering from carbon monoxide poisoning with confirmed carboxyhaemoglobinaemia after being trapped in a house fire.
 - c. A highly-pigmented breed of animal eg. Shar Pei, with no non-pigmented mucosal membranes.
 - d. A dog suffering from a gastric-dilatation volvulus (GDV) in shock with weak peripheral pulses, cool extremities and vasoconstriction.

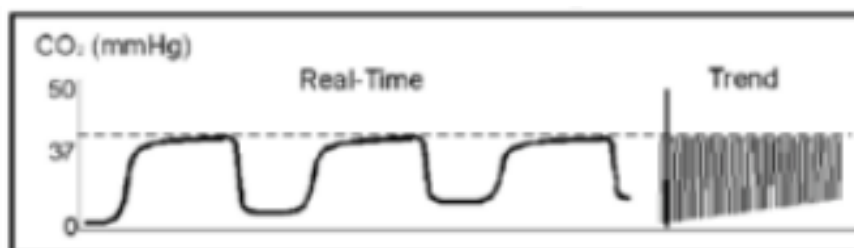
3. A 9-year-old Labrador is undergoing a tibial plateau levelling osteotomy (TPLO); the surgery is expected to last approximately 2 hours and the dog will remain in hospital overnight. As part of the plan a local anaesthetic technique will be performed. Which of the following will provide you with the longest lasting analgesia in this patient?
- a. Common peroneal block with bupivacaine
 - b. L7-S1 epidural with lignocaine
 - c. Femoral & sciatic block with mepivacaine
 - d. Femoral & sciatic block with bupivacaine
4. Which of the following opioids has the greatest potency?
- a. Morphine
 - b. Fentanyl
 - c. Methadone
 - d. Pethidine
5. Birds are intubated with uncuffed ET tubes due to which of the following anatomical features?
- a. Relatively small trachea
 - b. Presence of air sacs
 - c. Complete tracheal rings
 - d. Trachea is short

Paper 2

Answer all five (5) multiple choice questions in this section

This section is worth 5 marks. Each question is worth one (1) mark. There is no negative marking.

1. An anaesthetised small breed dog is spontaneously ventilating on a non-rebreathing system. The image below is from the capnogram. What is the MOST appropriate next step to manage this patient?



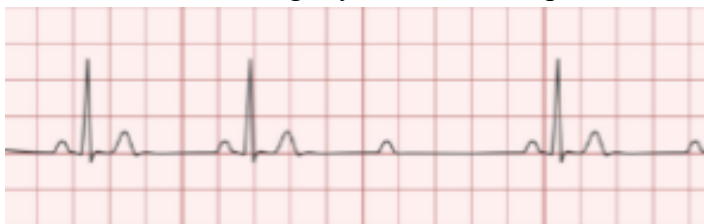
- a. Increase the fresh gas flow rate
 - b. Provide positive pressure ventilation
 - c. Check for an endotracheal cuff leak
 - d. Prepare to initiate CPR
2. A 3-year-old bulldog is anaesthetised for an emergency caesarean surgery. The bitch was administered esomeprazole (1 mg/kg IV) and anaesthesia induced with alfaxalone (2 mg/kg IV). Anaesthesia is now being maintained with isoflurane (2 %) and oxygen using controlled mandatory ventilation. Three puppies were removed, and the bitch was then administered methadone (0.1 mg/kg IV) and oxytocin (1.1 IU/kg IV). The puppies have an APGAR score of 4 which includes:
- Heart rate < 180 bpm
 - Mild crying & respiratory rate 6-15 breath/min
 - Pale mucous membranes
 - Some motility and reflexes present

Which of the following therapeutic interventions should be administered to the puppies immediately?

- a. Atropine
- b. Doxapram
- c. Naloxone
- d. Oxygen

3. A 10 kg mixed breed dog undergoing anaesthesia received methadone and medetomidine as part of the premedication. During the general anaesthesia the following ECG was recorded.

Which of the following rhythms does this patient have?



- a. Intermittent ventricular premature contractions (VPCs)
- b. Sinus tachycardia
- c. Ventricular fibrillation
- d. Second-degree atrioventricular (AV) block

4. A 13-year-old female neutered Maltese dog is presented for biopsy of a gingival mass associated with the first molar on the left lower arcade (309). As part of the analgesic plan, a nerve block is planned.

Which of the following local anaesthetic techniques will reliably block the biopsy site?

- a. Palatine nerve block
 - b. Inferior alveolar nerve block
 - c. Middle mental nerve block
 - d. Infraorbital nerve block
5. A 4-year-old thoroughbred stallion is undergoing anaesthesia for a cryptorchid castration. It received a butorphanol and romifidine premedication, was induced with ketamine and midazolam and is being maintained with isoflurane delivered in 100% oxygen whilst spontaneously ventilating in dorsal recumbency. An arterial line is placed to invasively monitor blood pressure. The following arterial blood gas sample results were obtained thirty minutes after anaesthetic induction:

Parameter	Abbreviation	Units	Result	Reference range
pH			7.3	7.34-7.45
PaO ₂		mmHg	440	80-100
PaCO ₂		mmHg	65	35.0-45.0
Sodium	Na ⁺	mmol/L	140	135-145
Potassium	K ⁺	mmol/L	4.0	3.5-4.5
Chlorine	Cl ⁻	mmol/L	102	98-106
Calcium	Ca ²⁺	mmol/L	1.4	1.15-1.4
Base excess		mmol/L	-0.6	-4 - 4
Glucose		mmol/L	7.2	4.0-5.5
Lactate		mmol/L	1.9	0.0-2.5

What would be the most appropriate next step in managing this patient?

- a. Reduce the vaporizer setting
- b. Administer intratracheal salbutamol
- c. Monitor and recheck in 30 minutes
- d. Implement positive pressure ventilation