Candidate Name: __________________________

PRACTICAL Exercise
Medications & Injections

VERY IMPORTANT
Method: In groups - staggered - PLEASE WAIT YOUR TURN / STAND BACK IF ASKED
Do bookwork - work out dosages - 1a / 2a / 3a
Got to Medications Table - Draw up the 3 syringes - 1b / 2b / 3b
DOMITOR / LETHABARB / C4
UNDER INSTRUCTION complete the 3 injections - SC / IM / IP - 2 / 4 / 6
At completion - retermine how you went - 7 - dispose of the scalpel - 8
Discuss # 9

1a. Prepare a SEDATIVE
Select the following equipment
* 1 mL syringe
* 25 gauge hypodermic needle
* (mock) DOMITOR® sedative
Calculate the DOSE required for a 5 kg dog

a. Dose Rate =

b. Volume Required = Dose rate x Mass =

1b. Draw up the Sedative DOSE
=> SHOW YOUR SUPERVISOR / ASSESSOR

2. Give an INTRAMUSCULAR injection
Under Supervisor direction
- Prepare the skin ASEPTICALLY - Discuss -
- Give the Sedative INTRAMUSCULARLY to the Rat in the LUMBAR MUSCLES
REFER TO THE DIAGRAM OF THE RAT PROVIDED
(Use only ONE Rat per 4 students)
=> SHOW YOUR SUPERVISOR / ASSESSOR

3a. Prepare a EUTHANASIATE (Euthanasia Solution)
Select the following equipment
* 3 mL syringe
* 22/23 gauge hypodermic needle
* (mock) EUTHANASIATE
Calculate the DOSE required for a 5 kg dog

a. Dose Rate =

b. Volume Required = Dose rate x Mass =

3b. Draw up the Sedative DOSE
=> SHOW YOUR SUPERVISOR / ASSESSOR
4. Give an INTRAPERITONEAL injection
   Under Supervisor direction
   - Give the Euthanasiate INTRAPERITONEAL to the Rat
   REFER TO THE DIAGRAM OF THE RAT PROVIDED
   (Use only ONE Rat per 4 students)
   => SHOW YOUR SUPERVISOR / ASSESSOR

5a. Prepare a VACCINE
   Select the following equipment
   * 1 mL syringe
   * 25 gauge hypodermic needle
   * (mock) COMPANION C4 Vaccine
   Calculate the DOSE required for a 5 kg dog

5b. Prepare / Draw up the Vaccine according to the attached instructions
   => SHOW YOUR SUPERVISOR / ASSESSOR

6. Give a SUBCUTANEOUS injection
   Under Supervisor direction
   - Prepare the skin ASEPTICALLY - Discuss -
   - Give the Vaccine SUBCUTANEOUSLY to the Rat
   REFER TO THE DIAGRAM OF THE RAT PROVIDED
   (Use only ONE Rat per 4 students)
   => SHOW YOUR SUPERVISOR / ASSESSOR

7. NOW - CHECK how you went
   Select the following equipment
   * # 4 Scalpel Handle
   * # 23 Scalpel Blade
   Hold the Scalpel in a modified pen grip putting light pressure on the belly of the blade
   Carefully dissect the injection sites to see if you injected where you thought you did
   How did you go?
   SC
   IM
   IP
   => SHOW YOUR SUPERVISOR / ASSESSOR

8. Dispose of the SCALPEL blade carefully
   Carefully remove the blade and place it in the YELLOW SHARPS CONTAINER
   Get your SUPERVISOR / ASSESSOR to demonstrate

9. Prepare a PENTOTHAL vial
   Select the following equipment
   * 10 mL Syringe
   * 100 mL STERILE WATER FOR INJECTION
   * (mock) PENTOTHAL vial - 5 g of salt
   Makeup a 5% solution - Discuss-
Candidate Name:____________________________

**INTRAMUSCULAR (IM)**
- Inject into the LUMBAR muscles at right angles to skin (transverse plane) and at 45° to median plane. Palpate the muscle mass and inject into centre.

**SUBCUTANEOUS (SC)**
- hold needle & syringe parallel to skin

**INTRAPERITONEAL (IP)**
- Hold rat upside down so abdominal organs fall forward. Inject into caudal abdomen.
Domitor

Novartis Animal Health Australasia Pty Limited
Section: 7(a) Central nervous system - Tranquillisers, psychotherapeutic agents
IVS revision date: 01 FEB 2002
Registered Name Domitor Sedative and Analgesic for Dogs and Cats
Composition Medetomidine hydrochloride 1 mg/mL.

**Actions**

**Pharmacology.** Medetomidine is a potent, selective and specific alpha2-adrenoceptor agonist. Alpha2-Adrenoceptor activation by medetomidine induces a dose dependent decrease in the release and turnover of noradrenaline in the central nervous system, which is manifested as sedation, analgesia and bradycardia. Peripherally, medetomidine causes vasoconstriction by activating postsynaptic alpha2-adrenoceptors in the vascular smooth muscle. Thus blood pressure initially increases after medetomidine injection due to an increase in systemic vascular resistance. The pressure reverts to normal or slightly below within one to two hours. The respiratory frequency may be transiently lowered.

The duration and degree of the sedative and analgesic effects depend on the dose administered. During maximal effect the animal is relaxed, lies down and does not react to external stimuli. Marked synergistic effects have been demonstrated between medetomidine and cyclohexamine compounds such as ketamine, and between medetomidine and opiate drugs such as fentanyl, producing deep anaesthesia. Similarly, medetomidine has a very potent ability to reduce the dose requirements of volatile anaesthetics such as halothane and isoflurane.

**Pharmacokinetics.** Medetomidine is rapidly absorbed after intramuscular injection. Peak concentration is reached within 15 to 20 minutes.

**Indications** Sedative and analgesic for use in the restraint of dogs for clinical examinations and procedures, minor surgery and preanaesthesia. Sedative for restraint in cats.

**Contraindications** The use of Domitor in pregnancy has not been monitored in sufficient animals and is therefore not recommended.

Precautions Care should be taken with the use of Domitor in animals with cardiovascular, respiratory, liver and kidney disease or in poor general health. Wipe off excessive spillage on the skin of animals. Keep animal warm for twelve hours after sedation (see Adverse Reactions).

**Safety directions.** Due to the potent pharmacological activity of medetomidine, skin contact with Domitor solution should be avoided.

**Adverse Reactions** Due to the mechanism of action of Domitor, heart rate and body temperature decrease. Treated animals should be kept warm in an even temperature for twelve hours after sedation. Some dogs and most cats will vomit five to ten minutes after injection. Some cats may also vomit at recovery. Occasionally muscle jerking in limbs has been observed.

Interactions Domitor should not be used in conjunction with sympathomimetic amines. The concomitant use of other CNS depressants should be expected to potentiate the depressant effects of either product, and appropriate dose adjustment should be made. The administration of anticholinergic agents (atropine or glycopyrrolate) to treat bradycardia, either simultaneously with medetomidine or following medetomidine, could lead to adverse cardiovascular effects.

**Overdosage** In the case of overdosage, atipamezole hydrochloride (Antisedan, Section 4) can be used.

**Dosage and Administration**

**Dogs.** Give by intramuscular or intravenous injection. To get an equal effect, the higher recommended doses/kg bodyweight have to be used in small dogs compared to large dogs.

- Slight sedation. 10 to 30 microgram/kg (0.1 to 0.3 mL/10 kg).
- Moderate to deep sedation and analgesia. 30 to 80 microgram/kg (0.3 to 0.8 mL/10 kg).
- Preanaesthesia. 10 to 20 microgram/kg (0.1 to 0.2 mL/10 kg).

**Cats.** Give by intramuscular injection.

- Moderate sedation. 50 to 100 microgram/kg (0.25 to 0.5 mL/5 kg).
- Deep sedation. 100 to 150 microgram/kg (0.5 to 0.75 mL/5 kg).

Maximal effect is obtained within ten to 15 minutes. Duration of clinically useful effect is dose related: 30 to 120 minutes (sedation), 30 to 150 minutes (analgesia). The dose can be repeated if necessary.

**Presentation** Solution: 10 mL.

**Storage** Store below 30 deg. C (room temperature). Do not freeze.

Poison Schedule S4.

Registration All States.
APVMA Number 40613
Lethabarb

Virbac (Australia) Pty Limited
Section: 9 Euthanasiates
Registered Name Lethabarb Euthanasia Injection
Composition Pentobarbitone sodium 325 mg/mL.
Indications Euthanasia solution for small animals.
Contraindications Administration as an anaesthetic.
Dosage and Administration 1 mL/2 kg bodyweight or more as required by rapid intravenous injection; can also be given by intraperitoneal, intracardiac or intrapleural injection if necessary.
Presentation Injection: 450 mL.
Storage Store below 30 deg. C (room temperature).
Poison Schedule S4.
Registration All States.
APVMA Number 47815
Companion C4

Intervet Australia Pty Limited
Section: 18(a)(v) Immunotherapy - Vaccines and antisera - Dogs
IVS revision date: 01 AUG 2004
Registered Name Companion C4 Quadrivalent Living Vaccine for Dogs

**Composition** Live attenuated canine distemper virus, live attenuated canine adenovirus type 2, live attenuated canine parvovirus, live attenuated canine parainfluenza virus.

**Actions** A modified live virus vaccine. Vaccinal protection from infection is regulated primarily by humoral immunity and secondarily by cell mediated immunity. Vaccination induces a strong immune response through the induction of serum neutralising antibodies, local antibodies, and systemic and local cell mediated immune responses.

**Indications** Active immunisation of dogs against canine distemper, contagious hepatitis, canine parvovirus and parainfluenza infections.

**Contraindications** Administration to dogs receiving corticosteroid treatment and pregnant bitches. Avoid using chemicals to disinfect the skin, needles or syringes before vaccination, as this could inactivate the viruses.

**Dosage and Administration** Reconstitute the vaccine using 1 mL of a suitable sterile diluent. Once reconstituted the vaccine should be used without delay. Administer by subcutaneous or intramuscular injection.

**Recommended vaccination program.** Primary vaccination in dogs over 12 weeks of age: two doses of vaccine at an interval of one month. Primary vaccination in puppies from 8 to 12 weeks of age: three doses of vaccine at intervals of one month. Puppies that are at severe risk of infectious disease may be vaccinated as frequently as every two to three weeks to minimise the risk of infection. Annual booster vaccinations are recommended.

**Presentation** Vaccine: 1 mL after reconstitution (single dose vial): 10's.

**Storage** Store between 2 and 8 deg. C. (Refrigerate. Do not freeze.) Protect from light.

APVMA Number 56438

©2002,2009 Dr David Horan PRACTICAL - Medications & Injections
Thiobarb Powder

Jurox Pty Ltd
Section: 2(a) Anaesthetics and analgesics - Anaesthetics - local and general
IVS revision date: 01 AUG 2004
Registered Name Thiobarb Powder

**Composition**: Thiopentone sodium 5 g (equiv. thiopentone 4.6 g).

**Indications**: General anaesthesia in horses, cattle, sheep, pigs, calves, dogs and cats.

**Precautions**: Perivascularly injected Thiobarb will be irritant; if this occurs, infiltrate the area with saline solution to dilute the solution and minimise the irritation. Use of VR Domoso Roll-On will enhance the intravenous absorption of perivascularly injected solution.

Excitement at induction or recovery may occur, and can be minimised with appropriate premedicants.

Excessive salivation may occur and can be minimised by the use of atropine. Intubation will help to protect the airway.

Too rapid injection may result in apnoea, which may be managed using artificial respiration, respiratory stimulant or oxygen supplementation in severe cases.

Animals exhibiting shock, anaemia, or liver or kidney damage should be given Thiobarb with great care.

Hypersensitive animals will respond atypically to this drug on occasion.

As with all general anaesthetic agents, it is advisable to ensure that the patient has been fasted before receiving the anaesthetic. Special care should be taken with aged animals, when there is stress associated with conditions such as disease or shock or in caesarian section. Following induction of anaesthesia, the use of an endotracheal tube is recommended to maintain airway patency. It is advisable to administer supplemental oxygen during induction and maintenance of anaesthesia. Respiratory and cardiac embarrassment may occur. Ventilation of the lungs with oxygen should be considered and adrenaline may be indicated in such circumstances.

**Withholding Periods**: Meat. 28 days. Milk. 7 days.

**Dosage and Administration**: Dissolve the contents in water for injection 100 mL immediately before use to give a solution containing 50 mg/mL.

Do not use if the solution is not clear.

Horses, cattle, sheep, pigs. 10 to 15 mg/kg bodyweight.

Calves. 15 to 20 mg/kg bodyweight.

Dogs, cats. 20 to 35 mg/kg bodyweight.

**Presentation**: Injection (powder for reconstitution, vial), 5 g: 1's.

**Storage**: Reconstituted solutions are stable for three days at room temperature, and for seven days if refrigerated. Protect from light. Do not use if the solution is not clear.

Poison Schedule S4.

APVMA Number 51520

REFERENCE

eMIMS