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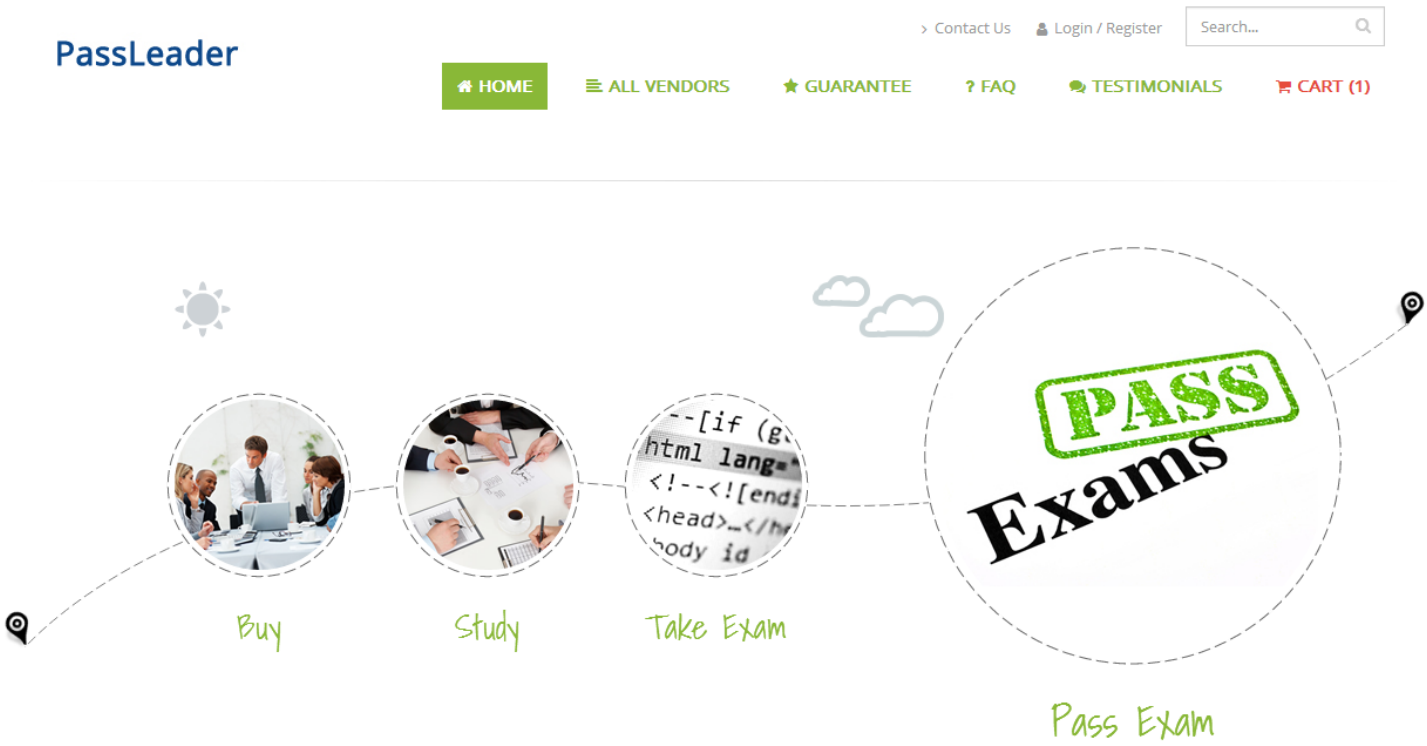

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Exam : **VTNE**

Title : Veterinary Technician National Exam

Vendor : AAVSB

Version : DEMO

NO.1 Veterinary nurses/technicians play vital roles in veterinary pain management. All of the following discuss key responsibilities that help develop and administer a pain management plan except:

A. Inform clinicians of patient pain scores and inappropriate pain management

B. Allow the veterinarian to determine the appropriate pain management protocol

C. Routinely assess post-op patients for pain

D. Log controlled drugs properly

Answer: B

Explanation:

Of course, ultimately, the veterinarian must decide upon the appropriate pain management plan for each individual patient. Each veterinarian often has their own preferences and choices for certain cases. However, a veterinarian who ignores a technician's suggestions or observations about a patient's anxiety level before surgery, previous experience with pain management with the pet, and other factors may not be in the pet's best interest.

Technicians interact with the pets before the vets. They see how anxious the pet is on arrival and how painful they may be before, say, a cranial cruciate surgery. They may know the pet, have previously given them medications, and have seen that the pet became very dysphoric on a certain drug dose. Thus, both technicians and veterinarians should design the pain management plan when warranted.

A technician's role is to assess patients and identify or anticipate pain. Techs should be able to provide comfort and care to patients, both pharmacologically and via other methods, such as calming them down, providing extra padding, massage, or other modalities. They need to be able to differentiate stress from pain from dysphoria. They need to be able to properly assess for drug side effects and report them promptly to the veterinarian. They must communicate well with clients to explain signs of pain in animals and much more. They must be comfortable evaluating pets postoperatively and reporting any concerns to the veterinarian. Finally, they must ensure all drugs are logged properly, including maintaining controlled drug logs as the law requires.

NO.2 Ampicillin for injection is produced in 1 gram vials of powder. How much sterile water should be added to produce a 100 mg/mL concentration?

A. ~1 mL

B. ~10 mL

C. ~3.3 mL

D. ~100 mL

Answer: B

NO.3 Neuroleptanalgesic drug combinations are generally used for their sedation and analgesia properties. Which of the following drug classes, when combined with an opioid, would not describe neuroleptanalgesia?

A. Alpha-2 agonist

B. Phenothiazine

C. Dissociative

D. Benzodiazepine

Answer: C

NO.4 A breeder has a litter of three puppies that are due for pyrantel deworming that weigh 4 pounds, 5 pounds, and 6 pounds each. Pyrantel is available in a 50 mg/mL liquid. The instructions are to give 1 teaspoon per 10 pounds of body weight. You plan to dispense the liquid in a bottle with a 1 cc syringe for dosing at home.
How many milliliters of medication should be dispensed for the three puppies to each receive one dose?
A. 7.5 mL
B. 75 mL
C. 1.5 mL
D. 0.5 mL
Answer: A

NO.5 Anesthetized veterinary patients considered to be at minimal risk should be monitored how often?
A. Every 15 minutes
B. Every 5 minutes
C. Every 10 minutes
D. Every 20 minutes
Answer: B

NO.6 You are monitoring a patient under anesthesia with concerns about ventilation status. The patient has been under anesthesia for almost 3 hours at this time. Your capnograph is out for repair, and you realize you heavily relied upon it when evaluating CO2 levels in the past. However, you have an arterial catheter in place and obtain a blood gas. The CO2 levels come back significantly elevated. This signifies which of the following conditions?
A. Decreased oxygenation
B. Respiratory alkalosis
C. Hyperventilation
D. Hypoventilation
Answer: D
Explanation:
When evaluating a blood gas, the oxygen levels define a patient's oxygenating ability, while the CO2 levels depict ventilation status.
*A blood gas with elevated CO2 levels defines a patient with hypoventilation and respiratory acidosis.
*A blood gas with decreased CO2 levels is consistent with hyperventilation and respiratory alkalosis.
*The oxygenation level is not assessed by the CO2 concentration.
One can increase ventilation to a higher minute volume to treat the acidosis component caused by hypoventilation. This can be achieved by either increasing the tidal volume or respiratory rate. Hypoventilation and anesthesia commonly occur. It can happen for any reason that causes the blood CO2 levels to drop. We commonly see hypoventilation, even apnea, during induction due to the respiratory depressant effects of many of the medications we use. It can also happen with excessive anesthetic depth, even respiratory arrest. When hypoventilation is noted, immediately inform the veterinarian, assess vital signs, check the anesthetic depth and assess additional parameters such as performing a blood gas. You may need to breathe for the patient 2 to 10 times per minute until

normal respirations resume. The lower range we use when apnea is present after induction and the latter due to hyperventilation to allow the CO2 levels to normalize.

NO.7 When positioning and prepping a patient with a fractured limb, you need to consider what position will provide the best access to the affected leg and allow for the most sterile preparation of the entire limb.
Which of the following would be the appropriate position for an animal who needs a humeral repair?
A. Dorsal recumbency, affected leg along the side
B. Lateral recumbency, affected side up
C. Dorsal recumbency, affected leg hanging
D. Lateral recumbency, affected leg up
Answer: D
Explanation:
When working on the humerus, the surgeon will need the patient on their side with the fractured humerus up, lying on their good side.
A patient with a radius-ulna fracture would be placed in dorsal recumbency (on their back) with the affected leg along the side.
A patient with a tibia-fibula fracture would be placed in dorsal recumbency, and the affected leg hanging.
Finally, a patient with a femur fracture would be placed in lateral recumbency with the fractured limb on the affected side facing up.

NO.8 An owner presented to the hospital with her six-month-old puppy for a routine spay and retained lower canine deciduous tooth extraction. The owner wants to know all of the pain management techniques you will be using to ensure her baby remains pain-free.
You let the owner know that you will be using a combination of all of the following except:
A. Mandibular nerve block
B. Local line block
C. Injectable opioid
D. Topical analgesia
Answer: D
Explanation:
In a routine spay and deciduous tooth removal, commonly used pain management techniques for a combined multimodal approach may include a local line block (the use of a local injectable anesthetic) along the incision line in the skin and an injectable opioid as a premedication, and then post-operatively as warranted. Additionally, a rostral mandibular (mental nerve) block may be used for tooth extraction for further pain management.
While additional pain management options may be included, topical anesthetics would not be effective for visceral or dental pain. Topical anesthetics treat pain on surface skin or mucosal pain associated with minor, short-lived painful situations such as wound suturing, venipuncture, and nasal gastric tube placement.

NO.9 You are about to prep a patient for surgery. You are working at a veterinary practice as a relief technician and unsure of what they use routinely as part of their surgical protocol. Which of the following antiseptic/disinfectant agents would not be satisfactory as a preoperative scrub?

A. Chlorhexidine detergent or solutions
B. Povidone-iodine detergent or solution
C. Glutaraldehyde
D. Isopropyl alcohol-chlorhexidine gluconate mixture
Answer: C
Explanation:
Glutaraldehyde is a phenol used in cold sterilization and is not intended to be used on living tissue. It is effective against bacteria, yeasts, spores, viruses, and fungi. But, if placed on the skin, it can cause irritation and has no residual activity. Historically, phenols (carbolic acids) were used as disinfectants and antiseptic agents; however, they have since been abandoned in favor of safer and more effective products. Additionally, toxicity to various species leads to the need to utilize safer products.
Chlorhexidine products are widely used in veterinary medicine. Classified as a biguanide, it has low-level action but is an efficient antiseptic and disinfectant for cleaning cages and treating superficial wounds and skin infections. When used as a surgical scrub, its residual activity may persist for up to 24 hours. It can also be used to lavage wounds when used at a 1:40 dilution (2% solution), and the dilution prevents cytotoxicity.
Alcohols are fast-acting, leave no residue, are non-corrosive, and are effective against MRSA. They are ineffective against bacterial spores or fungi. Isopropyl alcohol is most commonly used in medical applications but can come in various preparations. Additionally, products on the market may combine this with chlorhexidine for preoperative skin preparation. Still, because of cytotoxicity and pain, alcohol-based products should not be used on open wounds.
Finally, povidone-iodine, also commonly used as either a surgical hand scrub or preoperative patient prep, effectively destroys most bacteria except mycobacteria and spores and is also effective against viruses, yeast, and fungi, protozoa. It is fast-acting with residual activity lasting about 4-6 hours. However, it is inactivated by organic debris and alcohols. It may be combined with alcohol for preoperative skin prep as a one-step solution. This combination product has a rapid onset but extends the residual activity to at least 1 day.

NO.10 A veterinary technician suspects that a cow's pain is due to mastitis. Which of the following signs would suggest this cause?
A. The cow is kicking at its udder
B. The cow is standing with its abdomen tucked
C. The cow is anorexic
D. The cow is acting restless
Answer: A
Explanation:
When a cow kicks at its udder, it is a sign of mastitis. Other signs of mastitis include a stilted gait, unwillingness to move, and redness and swelling of the udder. NSAIDs and antibiotics are used to treat this painful condition.
The remaining answer options are incorrect, though they all may be signs of pain in cattle. Signs of general pain in a cow may include restlessness, anorexia, or standing with a tucked abdomen, but kicking at the udder is more specific to pain in that area.

NO.11 What is the mechanism of action and purpose of diuretic medications?
A. Exert osmotic forces in the kidney to decrease fluid accumulation, such as edema and effusion

B. Strengthen heart muscle contractions to treat cardiac disease
C. Increase the volume of and thin respiratory respiratory secretions, making them easier to clear with coughing
D. Decrease smooth muscle tone in blood vessels to lower blood pressure
Answer: A
Explanation:
The most commonly used diuretic in veterinary medicine is furosemide.
Expectorant medications increase the volume and decrease the tenacity of respiratory secretions, making them easier to clear with coughing. Guaifenesin is an example drug. Positive inotropic medications, such as digoxin, and inodilators, such as pimobendan, increase myocardial contractility (strength of heart muscle contractions). Vasodilators decrease smooth muscle tone in blood vessels to lower blood pressure. Amlodipine is a commonly used medication within this class.

NO.12 All of the following are true when considering the dehiscence of a surgical site, except:
A. Separation of surgical incisional layers due to suture breakage can cause dehiscence
B. Separation of surgical incisional layers due to excess activity by the patient can cause dehiscence
C. Dehiscence is an uncommon but potential complication of any wound repair or surgical incision
D. Seroma formation is a precursor to dehiscence
Answer: D
Explanation:
A seroma is a collection of serum that accumulates under the incision, usually in the superficial skin layer. A seroma is non-painful but flocculent and must be differentiated from a hematoma or break in the body wall. It often occurs because animals are not sufficiently exercise-restricted. Still, it can also happen when surgery requires excessive dissection of the nearby tissue or if the tissue planes are not adequately and sufficiently opposed. Seromas can take time, but usually heal without intervention or with warm compresses +/- bandaging in some instances and depending on the type of surgery/location of the abnormality.
Unlike a seroma, however, an incisional dehiscence is a more major complication that warrants intervention.
Dehiscence refers to the breakdown of all surgical incisional layers (or surgically repaired wounds). It is an uncommon but potential complication of any wound repair or surgical incision. Further, it can increase the risk of developing evisceration (for abdominal surgeries) and/or sepsis. Dehiscence can result for various reasons, including:
*Separation of surgical incisional layers due to excess licking by the patient, often due to owners who fail to put the e-collar on when advised and when not with the patient. Proper education is required. No owner can watch their pet 100% of the time, and just because they do not lick in our presence doesn't mean they will not when unattended.
*Separation of surgical incisional layers due to excess activity by the patient. Failing to restrict exercise as directed by the veterinarian can lead to stretching and pulling on the incision, leading to breakdown and increasing the risk of dehiscence and other complications.
*Suture breakage, improperly tied sutures and knots that slip, or poor surgical technique.

NO.13 What is the correct medical term used to describe abnormal positioning of the teeth?
A. Masticatory myositis
B. Malocclusion

C. Enamel dysplasia
D. Stomatitis
Answer: B
Explanation:
Malocclusion is a general term used to describe teeth that are crowded, rotated, and/or misaligned. Malocclusion is usually a genetic condition resulting in abnormal development of the maxilla and/or mandible. Far less commonly, it may be a result of trauma, such as a mandibular fracture resulting in maxillomandibular asymmetry. Malocclusions cause problems from the abnormal contact between teeth of the maxilla and mandible, or teeth and the mouth's soft tissues.
*Class I malocclusions (neutroclusion) occur when one or more teeth are in an abnormal position (misaligned), but the maxilla and mandible are in a normal relationship with each other. A Class I tooth may be pointing in the wrong direction or rotated. Common examples include rostral crossbites and linguoversion (also called base-narrow canines).
*Class II malocclusions (distoclusion) occur when the mandible is abnormally caudal to the maxilla. Other names include brachygnathism, parrot mouth, or overbite. These are most commonly observed in dolichocephalic dogs (long and narrow skulled dogs).
*Class III malocclusions (mesioclusion) occur when the mandiblular teeth are abnormally rostral to the maxillary teeth (maxillary retrognathism). Other names include prognathism and underbite. These are commonly observed in brachycephalic dogs. Note for brachycephalic breeds: they are considered to have this type of occlusion as part of the breed standard.
Enamel dysplasia is a developmental abnormality of the enamel surfaces on the crowns, either quantity or quality. Stomatitis is inflammation of the gingiva and oral mucosa. Masticatory myositis is a condition in which an animal's immune system develops antibodies that attack only the jaw muscles involved in chewing.

NO.14 Which of the following should occur as soon as possible after gastrointestinal surgery?
A. Urinary catheterization
B. Walking
C. Feeding
D. Warming
Answer: C
Explanation:
Food is required for the gastrointestinal tract's cellular health and proper function. Most animals eat within 6-24 hours following gastrointestinal surgery. If the patient holds down a small amount of water, a small amount of easily digestible food should be offered. Concern may arise if the patient hasn't eaten but the timeframe of concern varies with each species.
Walking, urinary catheterization, and warming are not postoperative treatments specific to gastrointestinal surgery recovery.

NO.15 What is a common therapeutic use of drugs with the suffix -caine?
A. Inhalant anesthesia
B. Diuresis
C. Antimicrobial
D. Blocks nerve signal conduction
Answer: D

Explanation:
Drugs with the suffix -caine are sodium channel blockers, commonly used for local anesthesia. Examples include lidocaine, bupivacaine, and mepivacaine. These drugs are very effective and relatively inexpensive anesthetic drugs across multiple species.
These drugs are not used as inhalant anesthetics, antimicrobials, or diuretics.

NO.16 In order to ensure that an intravenous catheter remains patent, it should be flushed regularly with which of the following solutions?

A. Sterile water

B. 5% dextrose solution

C. Heparinized saline

D. EDTA

Answer: C

Explanation:
To ensure intravenous catheters remain patent, they should be flushed regularly with heparinized saline. Heparin is an anticoagulant agent that helps prevent clots. The use of heparinized saline will prevent blood clots from forming in intravenous catheters so they remain open and free-flowing. Normal saline can also be used to flush catheters.
EDTA, 5% dextrose solution, and sterile water are not used to maintain catheter patency.

NO.17 In small animal and exotic veterinary practice, proper handling and restraint are paramount when evaluating pet birds. Which of the following would not be considered appropriate when discussing restraint and handling of one of these birds?

A. Darken the room, speak softly, and go slowly

B. Hold around the sternum while holding the wings against the body

C. Allow the bird in the carrier to step up onto your arm or a perch before just grabbing them

D. Catch small birds from behind with a small towel or one's bare hand.

Answer: B

Explanation:
Commonly kept pet birds generally fall into the order of psittaformes (psittacines). Psittacines include cockatoos, lories, budgies, cockatiels, and parrots, including the large macaw species.
Birds, in general, have much thinner and more delicate skin than mammals. Feather fluffing conserves heat like that of piloerection in mammalian species. Because of the ability to fly, they have pneumatic (hollow) bones, such as the humerus and femur. These are very lightweight in nature. Additionally, they have air sacs in direct contact with proximal bones.
Further, to enable flight, birds have one coelomic cavity; thus, they have no diaphragm. The trachea has complete cartilaginous rings throughout. Knowing this helps explain why restraint can be so easily deadly and why care is needed to ensure a bird's safety.
Birds naturally use the flight component of fight or flight. Because of this, going slowly, speaking softly, and darkening the room or covering their eyes may help ease their stress. Additionally, you never want to reach into a carrier and directly grab a bird. This can easily provide stress and hurt them. You want to either allow them to fly in the room, take them from a perch, or, if trained, have them step up onto your arm so you can catch them easily and safely. With both small and larger birds, you can gently take hold from behind the head using a small towel or your bare hand. However, you never want to hold them by the sternum because of their lack of a diaphragm,

respiratory oxygen exchange physiology, thinner skin, and more. You want to prevent squeezing of the coelomic cavity.
Once you have caught the bird, two hands can be used with small birds, with one restraining the head and the wings and the other hand, the legs. For larger birds, it's most common to use a towel to control the head and beak. The feet can be secured with the remaining hand, but you must ensure with all birds that the wings are restrained without restricting the keel's movement.

NO.18 Your practice software permits text messaging. Your client service representatives send reminder messages about appointments via text. Surgery texts are sending text messages with patient updates. This lets the owners get updates before the veterinarian can talk with them. Updates can also be sent about hospitalized patients.
Regardless, you want to ensure that when using text messaging for communication, you do all of the following, except:
A. Always assume that text messages are not private and can be shared with others
B. Be brief and concise
C. Give bad news
D. Do not use acronyms
Answer: C
Explanation:
Remember that any form of communication should be professional, documented in the client's record, accurate, and respectful of the client and the pet.
Text messages can lead to misinterpretation; thus, you want to be succinct and accurate. Make sure you are clear and concise and provide valid information. However, you never want to give bad news via text. Bad news, such as complications in surgery, decline in hospital patient status, or changes in bloodwork, should always be given on the phone or in person.
When using text messaging, do not use emoticons that are ambiguous or can be misread. Do not use acronyms unless you spell them out first.
Remember that text messages can be forwarded and shared with others and are not considered a private means of communication.

NO.19 Which of the following methods of administering emergency medications should be a last resort?
A. Intraperitoneal
B. Intratracheal
C. Intravenous
D. Intracardiac
Answer: D
Explanation:
Intracardiac drug administration should be the last resort for administering emergency medications. It is known to present numerous technical challenges, causes unnecessary pain to the patient, and risks damaging the heart muscle and surrounding arteries. Intravenous drug administration is the preferred method for administering emergency medications.
Intravenous and intratracheal routes are preferred.
There is limited indication for intraperitoneal drugs due to the risk of visceral trauma and delayed absorption and distribution.

NO.20 When evaluating cytology and determining if a cell population is cancerous or not, we monitor for signs of malignancy. All of the following are general criteria of malignancy, except:

A. Hypercellularity

B. Pleomorphism

C. Homogeneous populations of the same cell type

D. Anisocytosis

Answer: C

Explanation:

We characterize benign neoplasia or hyperplasia of a homogeneous population of the same cell type that lacks criteria of malignancy. General characteristics of malignancy include anisocytosis (varying red blood cell sizes) and macrocytosis (cells that are larger than they should be), increased or hypercellularity, and pleomorphism, except when evaluating lymphoid tissue (variability in size, shape, and staining of cells and the nuclei).

Additionally, when evaluating for malignancy, we can evaluate characteristics of the nucleus, including:

*Macrokaryosis

*Increased nucleus-to-cytoplasm ratio

*Anisokaryosis

*Presence of multiple nuclei

*Abnormal mitosis

*Increased mitotic figures

*Nuclear molding

*Coarse chromatin, ropy or cordlike in appearance

*Macronucleoli

*Anisonucleosis

*Angular nucleoli

Neoplastic cells can be epithelial in origin, spindle cell (mesenchymal) in origin, or discrete round cell tumors.

NO.21 What is the name of the valve that pushes oxygen into a breathing system without releasing additional anesthetic agent?

A. Mitral

B. Bain

C. Pop-off

D. Flush

Answer: D

Explanation:

The flush valve forces oxygen into the circuit without releasing the additional anesthetic agent. Caution must be exercised when using the flush valve since it quickly increases the pressure within the circuit.

Incorrect terms include pop-off valve, mitral valve, and Bain circuit.

NO.22 Praziquantel is an anthelmintic medication used to treat which of the following in cattle?

A. Giardia

B. Lungworms
C. Flukes (Trematodes)
D. Nematodes
Answer: C
Explanation:
Praziquantel is an anthelmintic medication in the tetrahydropyrimidine family used to treat trematodes (flukes) and cestodes (tapeworms) in cattle, dogs, cats, sheep, goats, pigs, and horses. It is considered to be a safe medication, though it may cause vomiting at very high doses.
Nematodes, including lungworms specifically, and protozoa like Giardia, are not susceptible to praziquantel.

NO.23 You are discharging a canine patient who was hospitalized overnight due to severe back pain from presumptive intervertebral disc disease (IVDD). The patient received a fentanyl CRI overnight and was weaned to injections of buprenorphine. He was started on oral steroids, gabapentin, and codeine.
Which of the following non-pain medication management recommendations would be inappropriate for this patient?
A. Give pain medication as prescribed
B. Confine to a small crate/room only when you are not home
C. Leash walk for bathroom use only (5 minutes or less)
D. Do not allow the pet to use stairs or jump up and down on furniture
Answer: B
Explanation:
When treating a patient with IVDD, it is important to allow the pain meds to do their job. We want to restrict activity in the initial stages. When pain is properly controlled, the dog doesn't know to take it easy. So, we have to take it easy for them. We do this by restricting activity, including:
*No stairs (unless absolutely necessary and limit use ideally to 2 times daily), controlled up and down. In other words, don't let them just run up and down, walk them up and down to prevent hurting themselves.
*Give pain medication as prescribed. A common occurrence is that clients see the dog wanting to play and not painful, and since the dog feels great, they simply do not give the entire course of medications. As a result, the pet doesn't heal, and clinical signs often reoccur much more rapidly than they would have otherwise.
*When using steroids, it is critical for the technician discharging the pet to inform the owner both of the side effects and the importance of weaning as directed. Explain to them that the body's steroid production shuts down, and weaning is needed to allow the body to ramp up production.
*Exercise rest, including no running, jumping, and playing with other pets. This is crucial in the initial stages. Once exercise is reintroduced, we slowly increase it over time, and we start with short leash walks and controlled exercise. Thus, it is best to advise clients to take the pet out on a leash, let them do their business, and bring them back inside.
*Finally, we want to confine them to a small crate or room at all times, not just when the client is not home. We want them to have minimal activity in the first few days to a week to ensure they are not hurting themselves, taking it easy, and remaining calm. Depending on the injury or pain severity, we may want to start increasing activity after the first week. Always increase activity while the pet is still on pain meds.

NO.24 All of the following questions should be asked when triaging a canine patient presenting with an acute abdomen except?

A. Does your dog have diarrhea?

B. Is your dog vomiting or regurgitating?

C. When were your dog's vaccines administered?

D. Is your dog spayed or neutered?

Answer: C

Explanation:

Specifically for an acute abdomen, we want to know if the patient is vomiting or regurgitating. Often, this requires further inquiry of the owner because they usually don't know. They either didn't witness the event but said they were vomiting because they found the vomitus or didn't understand the difference. Vomiting is an active process where abdominal action/pumping is often seen, whereas regurgitation passively occurs. Dogs who regurge often simply open their mouths, and fluid, food, or material comes out.

It is important to know if the patient has diarrhea as well. Many dogs with acute foreign bodies have not yet developed diarrhea because the GI tract has slowed down or the stool has yet to be evacuated. Others may have infectious causes for the disease and thus, may start with diarrhea and progress to vomiting. Therefore, timing is relevant.

It is also important to know if the dog is spayed or neutered because, in intact females, the number one differential for a dog who is vomiting and/or has diarrhea has to be a pyometra (deadly uterine infection). If they are not spayed, ask follow-up questions such as: When was the last heat? Have they seen any vaginal discharge? Make sure to then ask if they are drinking excessively. In unneutered males or males presumed neutered but neutered at a shelter, retained testicles causing illness could be possible.

Thus, because history is also a necessary component, asking about when the dog's vaccines were administered is the least important question. This becomes an issue if parvovirus or distemper may be suspected. If vaccines are up to date in an adult dog, these are highly unlikely. But if the dog was recently adopted, even if over 1 year of age, but never got vaccines, infectious diseases have to be included on the differential lists. However, relative to the other three options, asking this question is the least important.

NO.25 Which of the following bandage care instructions is not correct?

A. The bandage needs to stay clean and dry

B. An e-collar may be necessary to prevent licking and chewing at the bandage

C. The bandage needs to be changed immediately if any swelling or odor occurs

D. When placed correctly, the bandage will protect the injury so that exercise does not need to be restricted

Answer: D

Explanation:

Exercise should always be limited when a bandage is in place to help the injury heal faster and decrease the chances that the bandage becomes displaced.

Bandages are not fully waterproof, so it's important that they stay clean and dry to prevent moisture wicking to the skin surface.

Most animals are uncomfortable with the restrictions a bandage places on their mobility and will lick

and chew to get it off. When not under direct supervision, an e-collar is often recommended to prevent the patient from prematurely removing the bandage.
Bandage complications can be serious, especially with risk of infection or restrictions on circulation. Odor and swelling are problems that should be addressed immediately.

NO.26 All of the following supplies should be available during an equine colic assessment except which item?
A. 25g needles and mepivacaine
B. Nasogastric tube, pump, buckets
C. Rectal exam sleeves
D. Pain medication, such as flunixin, butorphanol, or xylazine
Answer: A
Explanation:
Small needles and local anesthetic drugs are needed for nerve blocks during lameness assessments, not colics.
Equine colic patients routinely receive rectal exams, analgesia, and nasogastric tubing as part of their initial assessment. Vacutainer tubes for blood and abdominocentesis samples are indicated on a case by case basis.

NO.27 To minimize environmental hazards from anesthetic equipment, technicians must be vigilant. You want to always remember to do all of the following except:
A. Always ensure the scavenging hose is attached
B. Empty the reservoir bag into room air once the procedure has finished
C. Check cuffed endotracheal tubes for leaks and damage ahead of time
D. Wear an appropriate respirator and gloves when filling vaporizers and changing CO2 absorbers
Answer: B
Explanation:
Minimizing hazards in the workplace always has to be one of the technician's priorities when dealing with dangerous medications and inhalant anesthetics. Proper maintenance and protocols are in place to ensure the staff and patients remain safe.
Measures to take include:
*Never forget to attach the scavenging hose
*Never turn the vaporizer on until the patient is fully connected to the delivery system
*Ensure the correct sized tube for the correct species (Cuffed vs. uncuffed and the correct size for the airway)
*Check cuffed endotracheal tubes for leaks and damage ahead of time
*Always empty the reservoir bag into the scavenger hose, not into the room air
*Avoid mask or chamber inductions
*Wear a respirator and gloves when filling or emptying vaporizers and ensure other personnel are out of the room and not exposed
*Ensure you have access to a readily accessible spill kit
*All staff, but especially those who may be pregnant, should avoid exposure to waste anesthetic gases at all times or ensure a respirator mask is worn
*Fill vaporizers in well-ventilated areas
*When the patient is recovering, ensure they remain on 100% oxygen for as long as feasible and that

the machine continues to scavenge any expired gases

NO.28 Which of the following medications can be used as an appetite stimulant?
A. Metoclopramide
B. Psyllium
C. Mirtazapine
D. Ondansetron
Answer: C
Explanation:
Mirtazapine, an alpha-2 receptor antagonist and serotonin receptor antagonist, is frequently prescribed to stimulate appetite. Possible side effects include sedation, hypotension, and tachycardia. Cyproheptadine, a serotonin receptor antagonist, is also sometimes prescribed to increase appetite. Finally, Entyce (dogs) and Elura (cats) (Capromorelin active ingredient) are the newest appetite stimulants. The drugs work as a ghrelin receptor agonist (GRA).
Metoclopramide, a dopamine antagonist, and ondansetron, a serotonin receptor antagonist, are both antiemetic medications.
Psyllium is used as a laxative as it increases fecal bulk and peristalsis.

NO.29 You have a horse brought in for decreased appetite and weakness. The handler feels that the horse has been drinking a lot, close to 100 L/day. The ambient temperature outside has been relatively cool at 50.F (10.C).
What is the average water intake requirement for equine species per day? Is this horse drinking excessively?
A. 25 L/day; Yes
B. 45-75 L/day; Yes
C. Less than 20 L/day; Cannot determine
D. 100 L/day; No
Answer: A
Explanation:
The primary nutrients of concern in horses include water, vitamins, minerals, protein, and the overall energy consumed. Water remains the number one nutrient for all mammals.
With normal ambient temperature and normal activity level, the average horse drinks about 25L/day of water. In extreme heat, they can drink upwards of 100 L/day. However, given that the ambient temperature is relatively cool and the horse is drinking close to 100 L/day, is weak, and has a decreased appetite, this bears looking into and evaluating further.
All other answers are incorrect. 25 L/day is the average water consumed by a horse, and over 100 L without excessive heat or exercise, this horse is likely demonstrating polyuria.

NO.30 Of commonly-used analgesics in veterinary medicine, all the following drugs exert their activity in the nociceptive pathway during transduction, except:
A. Fentanyl
B. Ketamine
C. Carprofen
D. Medetomidine
Answer: B

Explanation:
The four steps in the nociceptive pathway are:
1. Transduction: A painful stimulus is changed into a nerve impulse.
2. Transmission: The nerve impulse is transmitted/travels along the sensory nerve fibers into the spinal cord.
3. Modulation: This message is changed, either by suppressing the severity or amplifying the message that gets transmitted to the brain.
4. Perception: There is appreciation of the painful stimulus by the brain in various locations, including the cerebral cortex and areas involved in the autonomic nervous system, memory, behavior, emotion, and arousal. This step helps explain how chronic pain conditions develop.
Various analgesics act on one or more steps in the pain pathway to prevent the conduction of the impulses or by altering the perception of the impulses.
Medications that can affect the transduction phase include opioids (e.g., fentanyl), NSAIDs (e.g., carprofen), local anesthetics (e.g., lidocaine), and steroids.
Medications affecting the transmission phase include local anesthetics and alpha-2 agonists such as medetomidine.
Medications impacting modulation include opioids, NSAIDs, local anesthetics, alpha-2-agonists, ketamine (an NMDA receptor antagonist), tricyclic antidepressants, and anticonvulsants (e.g., gabapentin, pregabalin).
Finally, medications affecting perception include opioids and sedatives/tranquilizers/general anesthetics.

NO.31 A 5-kg aggressive cat receives "kitty magic" for sedation at 0.1 mL each of ketamine, dexmedetomidine, and butorphanol. The ketamine concentration is 100 mg/mL.
What is the dosage that the cat received for ketamine?
A. 5 mg/kg
B. 10 mg/kg
C. 2 mg/kg
D. 6 mg/kg
Answer: C
Explanation:
Calculate the mg received of ketamine: 0.1 mL x 100 mg/mL = 10 mg
Calculate the dosage from the dose: 10 mg drug / 5 kg body weight = 2 mg/kg

NO.32 When castrating calves using the Burdizzo method, what must be done to prevent compromising blood flow to the scrotum?
A. Do not cut the scrotal skin
B. Open castration technique
C. Use an elastrator band across the scrotum
D. Crush only one spermatic cord at a time
Answer: D
Explanation:
The Burdizzo method of castration is used in calves older than 2 to 3 months of age. It uses an emasculator to crush and cut the spermatic cord. However, with this method, the scrotal skin is not cut itself. Instead, one spermatic cord is crushed, then the other, slightly higher up. If not performed

this way and the cords are crushed straight across, blood flow to the scrotum can become compromised and lead to gangrene.
This procedure is considered bloodless and rarely leads to infection. When done incorrectly, however, it can cause damage to the urethra.
When performing an open castration, generally in calves and small ruminants, an incision is made in the lower third to half of the scrotum to expose the testicles. This incision can be done horizontally or vertically, and then the testicles are pulled until the cords rip.
Elastration, a final means to castrate that is considered bloodless, is performed by taking elastrator pliers to assist in placing a rubber elastrator band around the entire scrotum above the testicles. This band actually works by cutting off the blood supply, causing sloughing of the testicles within 2 to 3 weeks. However, this method is only appropriate for animals younger than 11 days of age.

NO.33 If a patient's anesthetic depth seems too deep, all of the following could help to explain this except:
A. The vaporizer setting is too high
B. Hypercapnia
C. CO2 absorbent exhausted
D. Hypotension
Answer: C
Explanation:
Signs of deepening anesthetic depth include increased abdominal respiration, intercostal paralysis, decreased respiratory rate, weak but fast pulse, pupils fixed and centrally rotated, reduced blood pressure, and no response to surgical stimuli. It can easily progress to respiratory paralysis, lack of neurological reflexes, bradycardia, and eventual apnea, without intervention.
If the CO2 absorbent is exhausted, we expect a patient to be too light under anesthesia. This means they are rebreathing the CO2, leading to respiratory acidosis and failure to obtain sufficient gas anesthetic to provide adequate anesthesia.
Common reasons for excessive anesthetic depth include:
*The vaporizer is malfunctioning, overfilled, or no longer properly calibrated
*Equipment malfunction
*Underlying pre-existing medical conditions that could be interfering with proper gas exchange or proper metabolism of the drugs used Additional causes for increased anesthetic depth include hypotension and hypercapnia.

NO.34 Which jaw tone description indicates adequate surgical plane of anesthesia?
A. Loose and relaxed during manipulation
B. Tight and tense during manipulation
C. Loose, but tenses with opening
D. Tight, but relaxes with opening
Answer: A
Explanation:
When a patient has reached an adequate anesthetic plane for most invasive surgeries, the muscles of the jaw will be loose and relaxed. If the patient closes the mouth or twitches or has any jaw muscle tone, the anesthetic level is insufficient for surgery.

NO.35 A veterinary technician can monitor a pet for behavior and determine a behavior modification plan for that pet and the owner. For example, an owner brings a dog into the clinic. The dog has started to lick itself on the forepaw anytime someone pets it, including two of the three family members. The dog has already seen the veterinarian, and no medical reason for the behavior has been determined. Thus, you are doing a behavior consult with the owner. You want to study what occurs right before and after the animal does the licking behavior. Your goal will be to teach the pet a different response to the stimulus causing the licking that will not cause harm to the pet. You establish a retraining plan based on the Applied Behavior Analysis (ABC) model of behavior. You will develop desirable motivators and outcomes that give the pet an alternative behavioral response. What does the A stand for in this model?

A. Antecedent

B. Association

C. Analysis

D. Acceptability

Answer: A

Explanation:

In the ABC behavior model, the A refers to an antecedent or the stimulus preceding an unwanted behavior. These may be location-based, contextual, or sensory, such as tactile, visual, or auditory. It could be any given item in the environment that is predictive. An example would be the cat carrier coming out, and the cat runs because every time they see the carrier, they are shoved into it and taken to a place where they get poked and prodded.

The B refers to behavior. This is the actual behavioral response the pet gives. In this example, someone pets the dog, and the dog starts licking their forepaw.

The C refers to consequence, which is what happens to the dog directly after the event. What does the owner do every time the dog starts licking? Does the owner give it affection/attention/a treat to dissuade it from doing so?

An example of an ABC is:

*Antecedent: Food on the counter

*Behavior: Dog jumps up and looks at the food on the counter

*Consequence: Dog is directed away from the counter

Once we have established the ABCs, we can develop a plan to adapt the pet's behavior to a more appropriate response and learn why the pet acts that way.