# VTNE Practice Test 2

**1 .** Alpha-2 agonists, used therapeutically, decrease cardiac output in most animals. This decrease is due to:

* 1. decreased afterload.
  2. coronary vasoconstriction.
  3. high catecholamine levels.
  4. increased myocardial oxygen consumption.

**2 .** Which of the following is a reason geriatric patients should be scheduled for surgery before young patients?

1. Young patients become stressed more easily.
2. Geriatric patients take longer to recover.
3. Young patients need to eat more often.
4. Geriatric patients do not have to drink so often.

**3 .** Which teeth are primarily used for cutting, shearing, and holding?

1. Premolars
2. Incisors
3. Molars
4. Canines

**4 .** Which of the following is a correct statement concerning tissue samples?

1. Once removed from the animal, tissue immediately starts to die.
2. The process of autolysis is accelerated by cool temperatures.
3. Fixing tissues hastens the deterioration of cell membranes.
4. Tissues for standard histological examination should be frozen.

**5 .** All the following are true of veterinarian-client- patient relationships *except*:

1. the client and owner of the patient should be skeptical of the veterinarian.
2. the veterinarian should regularly visit animals in the clinic or in the field.
3. the client and owner of the patient should be honest with the veterinarian.
4. the veterinarian should be on-call and available in the event of an emergency.

**6 .** Which of the following is a major disadvantage in performing fluoroscopic studies on animals?

1. These studies are often expensive, so owners choose not to consent to testing.
2. These studies’ images can be saved in a variety of ways, including videotape.
3. These studies expose veterinary personnel to radiation.
4. These studies replace angiographic catheters.

**7 .** Veterinary technicians may use the tape technique to examine an area of skin for all the following *except*:

1. bacteria.
2. ringworm.
3. Malassezia.
4. surface mites.

**8 .** After surgical equipment is sterilized, it is packaged and stored. Items can become unsterile if they are not stored or handled properly. Which of the following surgical items is still sterile?

1. The item was stored in a humid area, and the packing is now wet.
2. A technician pulled back the packing without touching the paper to the instrument.
3. The item was stored in a pack that was punctured by another instrument.
4. A technician pulled back the packing and touched the item with his forearm.

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**9 .** All the following statements about general toxicology specimens are true *except*:

1. They should not be washed or submitted to extraneous contamination.
2. They should be submitted in leak-proof and sterile glass or plastic containers.
3. They should be collected fresh and then delivered to the lab frozen.
4. They should not be individually labeled; only the largest containers need labels.

**10 .** Many veterinary clinics do not line kennel floors with newspapers because newspapers are not:

1. readily available.
2. easily disposable.
3. absorbent.
4. warm.

**11 .** A correct statement regarding amiodarone, a common class III antiarrhythmic agent, is that it:

1. has a low iodine content.
2. metabolizes to desethylamiodarone in dogs.
3. blocks slow-moving sodium channels.
4. is structurally related to carvedilol.

**12 .** A correct statement regarding the use of atracurium as a muscle paralytic is it:

1. does not cause a release of histamine.
2. decreases intraocular pressure.
3. does not cause sympathetic stimulation.
4. is immediately effective.

**13 .** Technicians may occasionally care for cats experiencing Key-Gaskell Syndrome. All the following statements are true regarding this condition *except* it:

1. is also known as feline dysautonomia.
2. affects the autonomic nervous system.
3. tends to appear in cats aged 3 years or older.
4. affects more cats on the West Coast than the East Coast.

**14 .** In a generally healthy patient, an anesthetic that is administered intravenously will *most likely* take effect within a few:

1. seconds.
2. minutes.
3. hours.
4. days.

**15 .** Veterinary medical teams wish to meet four goals when anesthetizing a patient for ophthalmic surgery. These include all the following *except* to:

1. provide a mobile eye.
2. provide a pain-free recovery.
3. support cardiopulmonary function.
4. avoid increases in intraocular pressure.

**16 .** A correct statement concerning a Michel’s trephine is it is:

1. most often used for bone biopsies.
2. able to cut a square hole through bone.
3. only available in one diameter.
4. battery or electric-power operated.

**17 .** Which of the following urine preservatives is used for biochemical analyses of urea, ammonia, calcium, nitrogen, and uric acid in animals?

1. Toluene
2. Acetic acid
3. Chloroform
4. Hydrochloric acid

**18 .** Which of the following types of anticestodal drugs is used to eliminate the presence of most species of tapeworms except *Spirometra mansonoides* and *Diphyllobothrium erinacei* in dogs and cats?

1. Praziquantel
2. Niclosamide
3. Bunamidine
4. Albendazole

**19 .** A veterinary technician receives a frantic call from a pet owner. From what the owner says, the technician concludes the owner’s dog has consciously collapsed with dyspnea. In which of the following categories of emergency should the technician place the patient?

1. Nonemergency
2. Minor
3. Serious
4. Life threatening

**20 .** During which of the stages of anesthesia does the patient react to external stimulus with a struggling reflex?

1. Stage 1
2. Stage 2
3. Stage 3
4. Stage 4

**21 .** Which of the following is a correct statement regarding the collection of animal feces?

* 1. Better results come from feces collected from the ground or litter box than fresh feces.
  2. It is best to collect feces before collecting urine to avoid contaminating the urine.
  3. Feces collection usually requires restraining the animal so the process is uninterrupted.
  4. If it is difficult to collect the feces, it should be forced out of the animal using lubricant.

**22 .** Thiacetarsamide sodium is most frequently used as treatment for:

1. hookworms.
2. heartworms.
3. roundworms.
4. tapeworms.

**23 .** Surgeons can use all the following types of powered equipment in an operating room *except* a/an:

1. oscillating saw.
2. pneumatic drill.
3. electric drill.
4. rotary saw.

**24 .** When performing colorimetric biological determinations, veterinary technicians may notice an abnormal change in the color of plasma and serum due to high chromatin levels. When performing this test on a grazing animal, such as a dairy cow, technicians may notice serum and plasma colored:

1. red.
2. green.
3. yellow.
4. blue.

**25 .** Which of the following muscles should veterinary techniciansavoidduringintramuscularinjections?

1. Quadriceps group
2. Gluteal muscles
3. Triceps muscles
4. Lumbodorsal muscles

**26 .** Which of the following statements is true about patients undergoing anesthesia?

1. Very young patients should not fast for long before anesthesia because they could become hypoglycemic.
2. A dog in good health cannot consume food or water for 12 hours before undergoing surgery.
3. Patients undergoing joint surgeries generally have to fast longer than patients undergoing abdominal surgeries.
4. Most normal, healthy patient have to fast for about 4 hours before they undergo surgery.

**27 .** Which of the following instruments would a surgeon use for ligation of stumps or pedicles?

1. Halsted mosquito hemostatic forceps
2. Rochester-Carmalt hemostatic forceps
3. Doyen intestinal forceps
4. Babock intestinal forceps

**28 .** Which of the following is a correct statement regarding subcutaneous injections?

1. The effects are felt 15–20 minutes after the injection.
2. This area contains a small supply of blood vessels.
3. The area below the skin’s surface has many nerves.
4. Only nonirritant drugs should be administered this way.

**29 .** Within which part of an image-intensified fluoroscopic system are X-rays converted into visible light photons?

1. Output fluorescent screen
2. Image intensifier tube
3. Electrostatic lenses
4. Fluoroscopic tube

**30 .** Which of the following anesthesia drugs is *most often* injected?

1. Isoflurane
2. Ether
3. Halothane
4. Morphine

**31 .** A correct statement regarding a common dental instrument called a *curette* is:

1. it has two blades and one cutting edge.
2. it is used to remove subgigival calculus.
3. it cannot be used for removal of soft tissue diseases.
4. its cutting edges cannot be used on the back of the tooth.

**32 .** While conducting wildlife research, scientists may discover an animal, such as a wild bird, that needs immediate medical attention. Which of the following procedures would a surgeon be *least likely* to perform on a wild animal?

1. Laparotomy
2. Flight restraint
3. Sterilization
4. Dental prophylaxis

**33 .** Hemolysis occurs when red blood cells break and release their contents into blood serum or plasma. All the following are causes of in vitro hemolysis *except*:

1. osmotic pressure.
2. the size of the needle.
3. the separation of plasma.
4. vigorous shaking of samples.

**34 .** Which of the following is true about a Robert Jones bandage?

1. The bandage can last for up to a month.
2. The bandage should always include the toes.
3. The bandage contains traction tape to decrease slippage.
4. The bandage does not require a large quantity of cotton wool.

**35 .** The darkest, or least opaque, parts of an X-ray indicate the presence of:

1. gas.
2. muscle.
3. bone.
4. mineral.

**36 .** When administering an anesthetic to a horse intravenously, technicians inject the anesthetic into the:

1. jugular vein.
2. cephalic vein.
3. saphenous vein.
4. mesenteric vein.

**37 .** The use of piperazine, an antinematodal agent, is recommended in all the following *except*:

1. cats.
2. dogs.
3. pigs.
4. cattle.

**38 .** Technicians must often administer medications, such as a hypodermic injection, to patients. When administering ahypodermic injection, a technician may inject the drug using all the following routes *except*:

1. subcutaneous.
2. intramuscular.
3. intravenous.
4. epidural.

**39 .** If an adult bovine has 32 teeth, what is the animal’s dental formula?

1. I0/6 C1/2 P3/6

2. I6/6 C1/2 P3-4/3 M3/3

3. I0/6 C0/2 P6/6 M6/6

4. I3/6 C1/2 P4/8 M3/6

**40 .** A correct statement regarding needle holders is:

1. they are not involved in metal-to-metal contact.
2. as they wear, they become blunt or dull.
3. they are easily replaceable.
4. large needle holders are required for delicate sutures.

**41 .** Generally, urine samples are collected and stored in:

1. glass Vacutainers.
2. plastic Petri dishes.
3. plastic sample bottles.
4. glass vials.

**42 .** Which of the following dressings retains moisture within the wound?

1. Dry dressings
2. Occlusive dressings
3. Hemostatic dressings
4. Impregnated gauze dressings

**43 .** When collecting cerebrospinal fluid, the area of the spine that veterinary technicians *most* frequently tap is the:

1. axis.
2. atlas.
3. occipital bone.
4. atlanto-occipital joint.

**44 .** When performing a venous portography, technicians inject positive contrast media into the spleen or the:

* 1. mesenteric vein.
  2. cephalic vein.
  3. saphenous vein.
  4. jugular vein.

**45 .** Procedures on bigger animals, such as horses or cows, may occur either in the field or in a clinic. Which of the following methods of monitoring a larger animal’s status would aveterinary technician *least likely* use while in the field?

1. Personal observation
2. Pulse palpitation
3. A stethoscope
4. Blood pressure monitoring

**46 .** An example of a tricyclic antidepressant used in veterinary medicine is:

1. tofranil.
2. ativan.
3. valium.
4. risperdal.

**47 .** Which of the following first-aid situations requires immediate medical attention for a member of a veterinary medical team?

1. Ingestion of chemical agents
2. Skin contact with chemical agents
3. Eye contact with biological agents
4. Wounds from sharp biological agents

**48 .** When drawing blood from small animals such as dogs and cats, the vein of choice is generally the:

1. cephalic.
2. jugular.
3. renal.
4. saphenous.

**49 .** Saffan, a steroid anesthetic, is a mixture of alphaxalone and alphadolone. Technicians intravenously inject a dose of 3–6 mg/kg in:

1. cats.
2. dogs.
3. birds.
4. rabbits.

**50 .** Emesis may be recommended in all the following cases *except* to:

1. empty the stomach before surgery.
2. eliminate a toxin.
3. remove a small toy.
4. eradicate corrosive poisoning.

**51 .** An ideal operating room has:

1. one door.
2. two doors.
3. three doors.
4. four doors.

**52 .** While horses awaiting surgery can drink water up to 1 hour before the procedure, they must fast for:

1. 6 hours.
2. 10 hours.
3. 12 hours.
4. 14 hours.

**53 .** Which of the following agents is considered an inappropriate antiseptic due to its caustic nature?

1. Witch hazel
2. Bacitracin zinc
3. Formaldehyde
4. Polymyxin B sulfate

**54 .** In the lab, a technician accidentally spills biological agents on the skin exposed between his wrists and his lab coat. He knows the situation requires immediate first aid, and he performs all the following emergency actions *except*:

1. rinsing with water.
2. wiping with antiseptic cloths.
3. lathering with soap.
4. scrubbing with a sponge.

**55 .** Technicians often pay special attention to recumbent animals, or those who must remain lying down for recovery. These animals receive extra padding in their beds, are turned every 2–4 hours, and receive physiotherapy. Physiotherapy may include all the following *except*:

1. coupage.
2. massage.
3. ice baths.
4. hydrotherapy.

**56 .** A veterinarian orders an X-ray in which a dog must be positioned so that it is lying on its right side. The technician will use a horizontal X-ray beam to capture an image of the dog’s chest. What is the name of this position?

1. Ventrodorsal projection
2. Cranial caudal projection
3. Right lateral projection
4. Right-left lateral recumbent projection

**57 .** All the following are true statements concerning the use of anesthesia on horses *except*:

1. local anesthetics are often used as diagnostic tools.
2. all procedures are completed while the horses lay on their sides.
3. general anesthetics are used for procedures such as cheek teeth removal.
4. anesthetics create a higher level of safety for handlers and technicians.

**58 .** When Beta-blockers are administered intravenously to dogs, veterinary technicians should closely monitor:

1. blood pressure and electrocardiograms.
2. X-rays and electrocardiograms.
3. blood pressure and breathing sounds.
4. bleeding and breath sounds.

**59 .** While preparing for surgery, surgeons and veterinary technicians should thoroughly wash their hands and forearms. Hands and forearms should be exposed to antiseptic scrubs for no less than:

1. 30 seconds.
2. 1 minute.
3. 90 seconds.
4. 2 minutes.

**60 .** While working in the lab, a veterinary technician notices a gray Vacutainer with a yellow collecting pot on the counter. The Vacutainer the technician is looking at contains the anticoagulant:

1. heparin.
2. EDTA.
3. oxalate fluoride.
4. sodium citrate.

**61 .** All the following materials are often used to pad bandages *except*:

1. foam.
2. Soft Ban.
3. Bubble Wrap.
4. cotton wool.

**62 .** Which of the following drugs is an opioid?

1. Ketoprofen
2. Morphine
3. Aspirin
4. Lidocaine

**63 .** Which of the following steps should a veterinary technician complete first when bandaging an animal’s ear?

1. Fold the ear back onto a pad of cotton wool.
2. Apply a conforming bandage over the ear and under the chin.
3. Apply a dry dressing and place another pad of cotton wool over the ear.
4. Cover the bandage with adhesive tape.

**64 .** Which of the following patients should be monitored the closest during general anesthesia?

1. A dog with a heart rate 100 beats per minute
2. A dog that is obese
3. A cat with a heart rate of 150 beats per minute
4. A cat with a normal weight

**65 .** Studies in 2006 found that the use of acepromazine, an antipsychotic drug, often increases the risk of seizures in all these animals *except*:

1. cats.
2. squirrels.
3. dogs.
4. bats.

**66 .** A correct statement concerning the alcohols used as disinfectants or antiseptics before, during, or after surgeries is they:

1. are drying agents.
2. have a weak defatting effect.
3. do not require the presence of water.
4. are not effective in the first two minutes of application.

**67 .** The teeth of carnivores and herbivores differ due to the various materials they eat. Which of the following parts are common in herbivore teeth but *not* common in carnivore teeth?

1. Dentin
2. Pulp cavity
3. Cementum
4. Infundibulum

**68 .** While working in the lab, a technician witnesses a fellow coworker fumble with a bottle before it falls to the floor and breaks. Upon closer inspection, the technician realizes that the liquid is highly flammable. To clean a spill containing flammable liquid, the technician needs all the following materials *except*:

* 1. sand.
  2. water.
  3. autoclave.
  4. detergent.

**69 .** A veterinarian meets with a new client whose Yorkshire terrier has a few dog shows scheduled for the future. The Yorkshire terrier has developed an abnormal set of eyelashes, and the owner has noticed that the dog’s eyes have been tearing and inflamed. The veterinarian diagnoses the dog with a genetic defect called distichia, which can cause scarring. What should the veterinarian do?

1. The veterinarian should refuse to complete the surgery because it is unethical to cure genetic defects in show dogs.
2. The veterinarian should agree to perform the surgery, but he/she must tell the owner she can no longer show or breed the dog.
3. The veterinarian should refuse to perform the surgery because it is the first time he/ she has met the owner or the dog.
4. The veterinarian should agree to perform the surgery but should charge the owner a higher price for treating a show dog.

**70 .** Based on observations of a cat’s limited and painful movements, a veterinarian recommends and the cat’s owners agree to an examination in which the veterinarian can achieve a closer look at the cat’s spinal cord. Which of the following tests is the veterinarian recommending?

1. Celiography
2. Myelography
3. Angiography
4. Epidurography

**71 .** Which of the following is a correct statement concerning a technician’s attempt to maintain an animal’s mental stimulation and morale?

1. Toys from home are not allowed in the kennel.
2. Visits by the owner are not advisable.
3. The animal’s name should be used frequently.
4. Regular grooming is not necessary.

**72 .** All the following statements regarding the use of a local anesthetic as anadjunct to surgical anesthesia are true *except*:

1. the combined technique is useful in high-risk surgeries.
2. the local technique affects cardiopulmonary function.
3. animals recover consciousness rapidly.
4. the surgical sites remain pain free.

**73 .** You are about to perform an orogastric intubation on a large, 24-pound dog. What size stomach tube would be *most* appropriate for use in this scenario?

1. 12 French
2. 14 French
3. 16 French
4. 18 French

**74 .** An animal is in anesthesia Stage 3. Which of the following signs would indicate the patient is in plane III?

1. Deep and regular respirations
2. Fixed and centrally rotated eyeballs
3. Pale mucus membranes
4. Half thoracic and half abdominal respiration

**75 .** When prepping a patient for surgery, veterinary technicians use antiseptics that are split into three different categories. Antiseptics are placed in the second category if they possess the ability to prevent recontamination of the skin up to six hours. The second category measures the antiseptic’s:

1. immediate efficacy.
2. prolonged usefulness.
3. persistent microbial effectiveness.
4. residual action.

**76 .** All the following are true statements about teeth

*except*:

1. teeth are not dead structures.
2. teeth have their own nerve supply.
3. teeth have their own blood vessels.
4. teeth are not susceptible to pain.

**77 .** Which of the following is the term most frequently used to refer to the input and output of body water over a specific period of time?

1. Water shed
2. Water monitoring
3. Water turnover
4. Water quality

**78 .** Colorimetry is a measurement of:

1. color.
2. sound.
3. light.
4. waves.

**79 .** A correct statement regarding feeding an animal in recovery is that the food should be:

1. easy to digest.
2. served fresh and cold.
3. left out for when the animal is hungry.
4. placed in an area that requires the animal to move to it.

**80 .** Upper gastrointestinal studies (UGIs) allow for assessment of the:

1. kidneys and small intestine.
2. liver and large intestine.
3. stomach and small intestine.
4. colon and large intestine.

**81 .** One easy way to tell if a patient is unsuited for anesthesia is to:

1. examine the patient’s eating habits.
2. take the patient for a walk.
3. observe the patient while he or she sleeps.
4. test the patient’s urine and fecal matter.

**82 .** Martin, a veterinary technician, sees another technician drop a vial of blood on the floor. The coworker cleans the spill and reports it to her supervisor. After witnessing the incident Martin should:

1. report the incident to the American Veterinary Medical Association because the worker was negligent.
2. not report the incident to the American Veterinary Medical Association because the worker took the proper steps after the spill.
3. report the incident to the American Veterinary Medical Association because the worker should have called the patient’s owner about the spill.
4. not report the incident to the American Veterinary Medical Association because the worker was not a veterinarian.

**83 .** A veterinarian schedules an operation on a 4-month-old kitten. Before the operation, the kitten must be bathed and must fast for no longer than:

1. 4 hours.
2. 6 hours.
3. 8 hours.
4. 12 hours.

**84 .** In dogs, which teeth are called the *carnassial teeth*?

1. First molar in the lower arcade and fourth premolar in the upper arcade
2. Second molar in the lower arcade and third premolar in the upper arcade
3. Third molar in the lower arcade and first premolar in the upper arcade
4. Fourth molar in the lower arcade and second premolar in the upper arcade

**85 .** After you have finished using a compound microscope, what is the last step you must complete before covering it?

1. Lower the stage.
2. Turn off the light.
3. Turn down the rheostat.
4. Clean the oil immersion lens.

**86 .** Newborn animals are often poikilothermic and placed in incubators. Ideally, incubator temperatures should be set at:

1. 78–83°F.

2. 86–91°F.

3. 95–100°F.

4. 101–106°F.

**87 .** All the following are true about healing using granulation tissue *except*:

1. the edges of the wound stay close together.
2. the wound often becomes infected.
3. healing can take weeks to months.
4. scarring is often extensive.

**88 .** Rhinography is a contrast study of the:

* 1. nasal cavity.
  2. cranial cavity.
  3. pelvic cavity.
  4. thoracic cavity.

**89 .** Which of the following is true about an animal that is treated with ketamine?

1. Its pupils constrict.
2. Its eyes remain closed.
3. Its cranial nerve reflexes are more depressed.
4. Its protective airway reflexes are maintained.

**90 .** A correct statement regarding the identifying traits of canine teeth is that they:

1. are known as “cheek” teeth.
2. have flat, occlusal surfaces.
3. may appear as tusks in some species.
4. have multiple sharp points in carnivores.

**91 .** Which anesthetic can cause fetal depression when used?

1. Halothane
2. Thiopental
3. Sevoflurane
4. Etomidate

**92 .** A puppy undergoing surgery is monitored with pulse oximeter. Which of the following describes the function of a pulse oximeter?

1. Monitors the puppy’s direct systolic and diastolic blood pressure
2. Charts the puppy’s pulse rate and oxygen levels in the blood
3. Monitors the puppy’s pulse rate and pulse rhythm
4. Charts the puppy’s respiratory air movement

**93 .** Of the following, the microorganism that is *most*

resistant to disinfectant killing is:

1. fungi.
2. vegetative bacteria.
3. lipid-coated viruses.
4. bacterial endospores.

**94 .** Which of the following types of blocking drugs is often administered before anesthesia to prevent the stimulation of visceral tissues?

1. Beta
2. Neuromuscular
3. Autonomic
4. Acid

**95 .** After completing an operation on a dog, you notice one of the dog’s pupils is bigger than the other one. This condition is called:

1. anisocoria.
2. cherry eye.
3. entropion.
4. glaucoma.

**96 .** A healthy dog or cat may exhibit the following signs *except*:

1. clear eyes free of discharge.
2. clean and odor-free ears.
3. free limb movement.
4. white mucous membranes.

**97 .** Significant weight loss increases surgical risks in animals. The majority of animals are at risk of death or postoperative complications if weight loss has reached:

1. 5% of body weight.
2. 10% of body weight.
3. 15 % of body weight.
4. 20% of body weight.

**98 .** How many teeth are typically in an adult dog’s mouth?

1. 26

2. 28

3. 30

4. 42

**99 .** Which part of a compound microscope holds the slide?

1. Stage
2. Rotating turret
3. Optical tube
4. Substage condenser

**100 .** An 11-year-old cat is brought to the veterinary office for the sixth time in two months for a urinary tract infection. The veterinarian orders an X-ray with a dye injected into the animal’s veins to examine the kidneys, ureters, and urinary bladder. Which of the following is the name for this type of test?

1. Urohydropropulsion
2. Intravenous pyelogram
3. CAT scan
4. Perineal urethrostomy

**101 .** Veterinary patients are placed in five categories of risk assessment determined by the American Society ofAnesthesiologists.A patient with a mild systemic disease would be placed in:

1. Class 1.
2. Class 2.
3. Class 3.
4. Class 4.

**102 .** If a veterinary technician is attempting to measure the pulse in a dog’s or cat’s tail, he or she is moni- toring the:

1. femoral artery.
2. digital artery.
3. coccygeal artery.
4. lingual artery.

**103 .** Resorptive lesions are found primarily in which of the following animals?

1. Cats
2. Lizards
3. Cattle
4. Horses

**104 .** Before an 8-year-old dog undergoes surgery, a veterinary technician completes a physical exami- nation. During the examination of the dog’s respi- ratory system, the technician notices percussive sounds with high resonance. This condition is consistent with:

1. airway secretion.
2. respiratory disease.
3. lung consolidation.
4. pneumothorax.

**105 .** A technician is treating a patient experiencing a change in appetite. Rather than a loss of interest in food, the owner says it seems as though her dog is never satisfied and is always looking for

more to eat. The technician decides that the dog is experiencing:

1. pica.
2. polyuria.
3. coprophagia.
4. voracious appetite.

**106 .** Of the following animals, which is *most likely* to attack when taken from their home and placed in an unfamiliar environment, such as a veterinary clinic?

1. Cats
2. Dogs
3. Birds
4. Ferrets

**107 .** Which of the following uses a magnetic field to produce images of internal organs and tissues?

1. X-ray
2. MRI
3. CAT scan
4. Biopsy

**108 .** Touchingthesurfaceofthepatient’seyetestswhich of the following reflexes during anesthesia?

1. Palpebral
2. Corneal
3. Pupillary
4. Withdrawal

**109 .** Which of the following can be used to treat Pacheco’s disease in birds?

1. Fluconazole
2. Metronidazole
3. Acyclovir
4. Oseltamivir

**110 .** Shock is a serious risk in pre-, intra-, and postsur- gical environments. No matter the initial cause, the inciting event of shock is always:

1. tachycardia.
2. circulatory collapse.
3. decrease in blood flow.
4. dehydration.

**111 .** The dental formula for an adult cat is: 1. i6/6 c2/2 p6/6.

2. I6/6 C2/2 P 8/8 M6/6.

3. i6/6 c2/2 p6/4.

4. I6/6 C2/2 P6/4 M2/2.

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| --- | --- | --- | --- |
| **112 .** | All the following animals lack the ability to regur-  gitate *except*: | **118 .** | The maximum weight of a surgical instrument  pack being placed into an autoclave should be: |
|  | 1. rats. 2. rabbits. 3. horses. 4. ferrets. |  | 1. 4.5 kg.  2. 5.0 kg.  3. 5.5 kg.  4. 6.0 kg. |
| **113 .** | When cleaning glassware in a laboratory, you must first soak the dirty glassware in disinfectant. Immediately after scrubbing debris or surface material off the glass, you should:  1. rinse it thoroughly in distilled water. | **119 .** | The outermost layer of an animal’s tooth is the:   1. apex. 2. dentin. 3. enamel. 4. pulp. |

* 1. soak it in detergent or an ultrasonic bath.
  2. allow the excess liquids to drain.
  3. allow it to air dry or place it in a drying oven.

**114 .** Feulgen stain is used to examine which of the following?

1. Lipids
2. Connective tissue
3. Chromosomes
4. Bacteria

**115 .** A technician can reduce the stress levels of her patients by:

1. creating loud noises that are comforting to animals away from home.
2. making eye contact with all canines and speaking softly to them.
3. placing cats in cages where they cannot be seen by other animals.
4. allowing animals to urinate or defecate in their cages or stalls.

**116 .** Which of the following is the average gestation period for sheep?

1. 103 days
2. 121 days
3. 147 days
4. 179 days

**117 .** The optimum conditions for reading a radiograph include:

1. a brightly lit room.
2. dim lighting.
3. glossy films.
4. little to no glare.

**120 .** A correct statement regarding universal sterile containers is that they are:

1. large bottles.
2. narrow-mouthed bottles.
3. made of either plastic or glass.
4. often designed to hold more than 300 ml of fluid.

**121 .** Polydipsia is a symptom of which of the following conditions?

1. Nephritis
2. Cystic calculi
3. Prostatic enlargement
4. Obstruction of the urinary tract

**122 .** After administering norepinephrine, extreme vasoconstriction occurs. This means peripheral resistance:

1. increases and blood flow increases.
2. decreases and blood flow decreases.
3. increases and blood flow decreases.
4. decreases and blood flow increases.

**123 .** A correct statement regarding isoproterenol is that this myocardial stimulant:

1. is dependent on alterations in venous returns.
2. increases the strength of contractile forces and accelerates heart rate.
3. is 30–40 times more active in the heart than epinephrine.
4. decreases the rate of pressure changes in the ventricular chambers.

**124 .** Ideal operating room conditions include a tem- perature of approximately:

1. 60°F and humidity of approximately 50%.
2. 70°F and humidity of approximately 60%.
3. 70°F and humidity of approximately 50%.
4. 50°F and humidity of approximately 70%.

**125 .** An ideal antiseptic:

1. has high toxicity.
2. has low penetrability.
3. performs a narrow spectrum of activity.
4. causes little skin irritation or interference.

**126 .** Aveterinary technician treats a dog diagnosed with parvovirus. The technician tells the dog’s owner to perform surface disinfection on cages, carpets, couches, and other areas in the owner’s home. The technician also tells the owner to clean the dog’s toys and food and water bowls by placing these smaller objects in a tub of disinfectant for a specific period of time. This process is often referred to as:

1. cold sterilization.
2. immersion disinfection.
3. heat-pressure sterilization.
4. physical disinfection.

**127 .** Before deciding whether a surgery is necessary, vet- erinarians perform physical examinations. Within the first few seconds of the exam, veterinarians examine all the following *except* the animal’s:

1. attitude.
2. walk.
3. nutritional status.
4. rate of respiration.

**128 .** All of these statements are true about microscopes

*except*:

1. oil must be cleaned from the oil immersion lens before it dries.
2. to find the true magnification, multiply the objective magnification by the ocular magnification.
3. the base of the microscope should be at least 10 cm away from a table’s edge.
4. when using the coarse focus, you should adjust the knobs very quickly to find the right focus.

**129 .** A cat has been in the care of a technician for two days. Over those two days, the technician has noticed the cat has vomited multiple times. Between bouts of vomiting, the cat appears to be free of symptoms. The technician notes a lack of blood, feces, and bile in the vomit. Which of the following types of vomiting is the cat experiencing?

1. Bilious vomiting
2. Cyclic vomiting
3. Projectile vomiting
4. Stercoraceous vomiting

**130 .** A technician needs to evaluate bladder wall integrity and bladder position in a young dog. Which of the following cystography contrast studies should the technician perform?

1. Positive contrast cystography
2. Negative contrast cystography
3. Double contrast cystography
4. Pneumocystography

**131 .** Many drugs for animals, in combination with behavioral modification therapies, are used to:

1. increase arousal.
2. decrease compulsivity.
3. increase excitability.
4. decrease behavioral calming.

**132 .** Which of the following organs is responsible for metabolizing anesthetic drugs and producing plasma proteins and coagulation factors?

1. Lungs
2. Liver
3. Heart
4. Kidneys

**133 .** Thepresenceofbloodinananimal’surineiscalled:

1. anuria.
2. dysuria.
3. oliguria.
4. hematuria.

**134 .** A common side effect of phenothiazines is a/an:

1. decrease in achieving arousal.
2. increase in spontaneous motor activity.
3. decrease in coordinated motor responses.
4. increase in extrapyramidal symptoms.

**135 .** The pelvic limb swing is an immobilizer that:

* 1. allows the hind legs to bear weight but prevents the leg muscles from moving.
  2. prohibits the hind legs from bearing weight but allows movement of the joints.
  3. encases the entire hind or front leg and does not allow muscle or joint movement.
  4. prohibits the front legs from bearing weight and relieves tension in the tendons.

**136 .** A veterinary technician is assisting in the ban- daging of a dog’s tail. The bandage the technician is helping to apply is *most likely* a:

1. white open wove bandage.
2. cohesive bandage.
3. tubular bandage.
4. crepe bandage.

**137 .** Which of these veterinary technicians is acting unethically?

1. Samantha states on a resume that she is a current member of an organization that she stopped paying dues to last year.
2. Ethan asks to rearrange his work schedule to accommodate taking continuing edu- cation classes.
3. Gerard discloses information about one of the patients at his clinic after receiving a request from a public health organization.
4. Natasha discusses possible treatments options for one of her patients with another technician at her clinic.

**138 .** Urinary catheterization includes the placement of a small, plastic tube into an animal’s bladder via its urethra. Which of the following animals rarely receive catheterization?

1. Female cats
2. Male dogs
3. Female pigs
4. Male horses

**139 .** Which of the following suture materials generally takes the longest to absorb?

1. Polyglactin 910
2. Polyglycolic acid
3. Polydioxanone
4. Poliglecaprone 25

**140 .** The part of the microscope that connects the base and stage is the:

1. arm.
2. rheostat.
3. illuminator.
4. condenser.

**141 .** In an ideal situation, a technician would take an animal’s temperature via the patient’s:

1. axilla.
2. rectum.
3. mouth.
4. ear canal.

**142 .** Pyrexia is caused by the following *except*:

1. infection.
2. convulsions.
3. hypothermia.
4. excitement.

**143 .** Many behavioral drugs are water-soluble salts.

This means these drugs allow for:

1. slow dissolution in the gastrointestinal tract and good permeability in the intestine.
2. rapid dissolution in the gastrointestinal tract and good permeability in the intestine.
3. rapid dissolution in the gastrointestinal tract and poor permeability in the intestine.
4. slow dissolution in the gastrointestinal tract and poor permeability in the intestine.

**144 .** A veterinary technician travels to a farm to assess a horse that has a broken leg. The technician notices that nerve and blood vessel damage is present at the sight of the fracture. What type of fracture has occurred?

1. Incomplete fracture
2. Simple fracture
3. Complicated fracture
4. Multiple fracture

**145 .** Ultrasounds have reduced or eliminated the need for:

1. X-rays.
2. radiographic exams.
3. computed tomographies.
4. magnetic resonance imaging.

**146 .** Which of the following is a common side effect of general anesthesia?

1. Low body temperature
2. Reduced body weight
3. Infection
4. Hemorrhaging

**147 .** A correct statement regarding general aminogly- cosides is that these molecules have:

1. poor solubility in water.
2. excellent lipid solubility.
3. thermodynamic stability.
4. weights ranging from 100–200 g/mol.

**148 .** If not immediately used, serum or plasma should be stored at:

1. –20°F.

2. –4°F.

3. 15°F.

4. 32°F.

**149 .** A correct statement regarding a cryptorchidism is that it involves the:

1. amputation of a horse’s leg.
2. extraction of a horse’s testicle.
3. removal of a tumor in a horse.
4. resetting of a horse’s broken bone.

**150 .** Which of the following combinations of instru- ments would a veterinary technician use to trim a rabbit’s cheek teeth?

1. Spatula and molar luxator
2. Molar cutters and diamond burr
3. Soft tissue protector and cheek dilator
4. Mouth gag and extraction forceps

**151 .** A correct statement regarding the performance of skin scrapes is that:

1. one goal is to achieve petechial bleeding.
2. skin is scraped until the hypodermis layer is reached.
3. if the sample is going to a lab, the scalpel is not included.
4. it doesn’t involve squeezing the skin because the bacteria has already surfaced.

**152 .** A correct statement regarding consulting veteri- narians is:

1. consulting veterinarians charge higher fees than attending consultants for their services.
2. consulting veterinarians typically offer their opinions of physical exams and observation of animal behavior.
3. when a consulting veterinarian is called in, he or she is in charge of the veterinarian- client-patient relationship.
4. if a visit to the patient is necessary, con- sulting veterinarians assess the patient in the presence of the attending veterinarian.

**153 .** All the following statements are true about vet- erinary medical records *except*:

1. records must comply with state and federal standards.
2. the information in medical records is con- sidered confidential.
3. technicians cannot provide copies of records to clients without a court order.
4. medical records are considered pieces of property belonging to the clinic/practice.

**154 .** If a technician wished to mathematically construct a computerized, cross-sectional image of a cat’s brain through measurements received from X-ray transmissions, he or she would recommend that the owner consent to a/an:

1. CT.
2. MRI.
3. UGI.
4. X-ray.

**155 .** The drug epinephrine can be given to patients on anesthesia to make the anesthetic work for:

1. more time by increasing blood flow.
2. less time by increasing blood flow.
3. more time by decreasing blood flow.
4. less time by decreasing blood flow.

**156 .** The amount of total body water elimination due to insensible losses each day in healthy, yet inactive animals residing in a thermo neutral environment is approximately:

1. 5–15 ml/kg.

2. 15–30 ml/kg.

3. 25–40 ml/kg.

4. 35–50 ml/kg.

**157 .** Aveterinarian has scheduled an operation in which he will make an incision in a snake’s abdomen. This procedure is called:

* 1. celiotomy.
  2. lobotomy.
  3. cystotomy.
  4. nephrectomy.

**158 .** It is rare to find a lizard with teeth on its:

1. palate.
2. maxilla.
3. dentary.
4. premaxilla.

**159 .** Which of the following antiseptics or disinfectants has the ability to preserve tissue samples by hardening, or “fixing,” them?

1. Bleach
2. Formalin
3. Triclosan
4. Glutaraldehyde

**160 .** When caring postoperatively for a patient that had anesthesia, it’s important to take special care when bandaging the:

1. joints.
2. head.
3. legs.
4. paws.

**161 .** A correct statement regarding the use of buspirone in cats is that it:

1. produces immediate behavioral effects.
2. impairs memory or psychomotor skills.
3. regulates states of high arousal.
4. induces a panic-like state.

**162 .** During surgery, veterinary surgical teams follow aseptic techniques. One of these aseptic techniques is to keep talking to a minimum. Why is refraining from talking an aseptic technique?

1. Talking may bother the patient that is undergoing surgery.
2. Talking can break surgeons’ concentration, causing them to make mistakes.
3. Talking releases bacteria in the air, making the operating room less sterile.
4. Talking could distract members of the surgical team.

**163 .** Veterinary technicians recommend that pet owners brush their pets’ teeth at least once a month. If a domestic animal experiences an extreme buildup of plaque or tartar, all the following events will likely occur *except*:

1. the animal’s gums will be red, swollen, and sore.
2. the animal will develop duplicated canine teeth.
3. the animal’s oral bacteria will enter the bloodstream.
4. the animal will experience tooth and bone loss.

**164 .** Cats thrive in environments where the temperature is at least:

1. 50°F.

2. 60°F.

3. 70°F.

4. 80°F.

**165 .** For which group of patients might hypothermia (the lowering of body temperature) be used as a form of anesthesia?

1. Patients undergoing cardiovascular surgery
2. Patients undergoing dental surgery
3. Patients undergoing ophthalmological surgery
4. Patients undergoing joint surgery

**166 .** Which of the following SSRIs is used to treat dogs that experience dominance-related aggression, inter-dog aggression, or acral lick dermatitis?

1. Dapoxetine
2. Fluoxetine
3. Zimelidine
4. Indalpine

**167 .** When preparing for surgery, which of the following actions should a veterinary technician perform first?

1. Put on a cap and mask
2. Change into a scrub suit
3. Scrub for surgery
4. Put on sterile gloves

**168 .** When working with anesthetics, technicians may accidentally expose themselves to the chemical gases or injections they’re administering. To avoid self-exposure, technicians can do all the following *except*:

1. empty the rebreathing bag by detaching the bag from the cylinder.
2. place vaporizers outside the operating area when possible.
3. regularly check circuits for leaks.
4. use scavenging systems.

**169 .** The *most* important reason to keep the prophy cup moving while polishing teeth is to:

1. reach as much of each tooth as possible.
2. avoid heating the tooth.
3. remove as much plaque and stain as possible.
4. minimize the pressure required to flare the cup.

**170 .** Synovial fluid is collected through a process called:

1. athrocentesis.
2. thoracocentesis.
3. abdominocentesis.
4. pericardiocentesis.

**171 .** When a technician must handle, or restrain, a dog, he or she should first make the animal feel comfortable. To do this, the technician *must*:

1. make eye contact with the dog.
2. crouch down in front of the dog.
3. sit on the ground in front of the dog.
4. talk to the dog in an excited, high voice.

**172 .** When an animal experiences shock, its urinary patterns may be altered. Of the following, which is *most likely* to occur in an animal that has recently been in shock?

1. Anuria
2. Dysuria
3. Polyuria
4. Polydipsia

**173 .** Which of the following complications are brachy- cephalic dogs *most likely* to have during anesthesia?

1. Hypothermia
2. Cardiomyopathy
3. Airway blockages
4. Spinal instability

**174 .** After a surgery, animals’ wounds should be free of dead space, which can cause bacterial growth. All the following are ways to reduce dead space around wounds *except*:

1. compression bandages
2. drainage
3. Robert Jones bandage
4. splints

**175 .** Technicians perform abdominocentesis to detect an increase in the volume of:

1. synovial fluid.
2. thoracic fluid.
3. peritoneal fluid.
4. cerebrospinal fluid.

**176 .** All the following statements are true about stainless steel cages *except*:

1. they are easy to clean.
2. they are indestructible.
3. they are safe for most animals.
4. they are relatively inexpensive.

**177 .** Which of the following is a nonsteroidal anti- inflammatory drug (NSAID)?

1. Morphine
2. Fentanyl
3. Ketoprofen
4. Butorphanol

**178 .** Following most biopsies, the majority of tissue samples for histopathology are fixed in a:

1. 10% formal saline solution.
2. 20% formal saline solution.
3. 30% formal saline solution.
4. 40% formal saline solution.

**179 .** The most important nutrient all animals need to survive is:

1. carbohydrates.
2. proteins.
3. water.
4. fat.

**180 .** Whichofthefollowingbarbiturateshasthelongest effect on patients?

1. Pentobarbital
2. Thiopental
3. Methohexital
4. Phenobarbital

**181 .** Which of the following is a correct statement regarding the use of an alpha-2 adrenergic agonist on a horse during the postoperative period?

* 1. It decreases the quality of recovery.
  2. It increases the number of attempts to stand.
  3. It slightly prolongs the recovery period.
  4. It doesn’t affect the quality of recovery at all.

**182 .** The immobilization of a joint or limb is an appropriate preoperative procedure for patients undergoing:

1. orthopedic surgery.
2. airway surgery.
3. thoracic surgery.
4. ophthalmological surgery.

**183 .** Of the following, which piece of information is *least likely* to be included on a request form a technician would receive in the lab?

1. A picture of the animal
2. The owner’s name and address
3. A site diagram indicating where the sample was taken
4. The name and address of the surgeon and his or her practice

**184 .** Technicians often have to care for house pets other than cats and dogs. Among these pets are guinea pigs, hamsters, and rabbits. Which of the following statements is important for technicians caring for

**186 .** Which of the following describes the general state of an animal in category IV of theAmerican Society of Anesthesiologists Classification of Physical Status?

1. A patient is apparently healthy and is undergoing an orchiectomy.
2. A patient has a bone fracture but is not in shock or otherwise ill.
3. A patient has a high fever and is severely malnourished.
4. A patient suffers from extreme shock and severe dehydration.

**187 .** A veterinary technician travels to a farm to treat an animal for *Anoplocephala perfoliata*, a common type of tapeworm. To remove the tapeworm, the technician administers an oral dose of pyrantel pamoate paste. The veterinary technician is *most likely* treating a:

1. pig.
2. horse.
3. cow.
4. chicken.

**188 .** When should you count the swabs, needles, and sutures used during surgery?

1. Before and after surgery
2. Only during surgery
3. Before and during surgery
4. Only after surgery

|  |  |  |  |
| --- | --- | --- | --- |
|  | rabbits to keep in mind?   1. Rabbits are always easy to anesthetize. 2. Rabbits welcome new environments and people. 3. Rabbits respond to the emotions of their caretakers. 4. Rabbits benefit from newspaper lining in their cages. | **189 .** | A technician who is setting up for an incoming iguana should use a large aquarium or a large cat cage. The technician should line the aquarium or cage with:   1. sand. 2. gravel. 3. alfalfa pellets. 4. wood shavings. |
| **185 .** | Ultrasounds base their images of organs and tissues inside the animal on the time delay and amplitude of returning:   1. shadows. 2. lights. 3. sounds. 4. echoes. | **190 .** | All the following animals would be at risk of further injury during an MRI *except* a:   1. dog with a bullet in its hind leg. 2. cat that swallowed five paperclips. 3. pregnant ferret with a broken leg. 4. rabbit with eight skin staples on its back. |

**191 .** A technician treats a dog for spontaneous bleeding. The dog’s owner tells the technician that the dog has experienced multiple bloody noses and has vomited blood twice in the past three days. The owner believes the dog may have ingested rat poison the family keeps in the garage. Which of the followingformsofVitamin Kinjections should the technician use as a treatment?

1. K2
2. K3
3. K4
4. K5

**192 .** Before operating on a patient, you are supposed to take a blood sample to check the patient’s BUN levels. You are *most likely* performing the test to check the patient’s:

1. renal function.
2. respiratory function.
3. cardiac function.
4. muscular function.

**193 .** Between operations, veterinary technicians often sterilize surgical equipment.Which of the following would technicians *least likely* sterilize using a chemical gas such as ethylene oxide?

1. Drills
2. Endoscopes
3. Drapes and gowns
4. Plastics and rubbers

**194 .** When a cat’s nasal passages are congested, it will

*most likely*:

1. eat less.
2. sleep less
3. play less.
4. climb less.

**195 .** A surgeon must perform a microvascular surgery on a ferret. Since the ferret has extremely small blood vessels, the instruments must be in excellent condition. All the following statements are true about general microvascular instruments *except*:

1. they should come in contact with other metal objects so that they stay magnetized.
2. they are often made of stainless steel or titanium with chromium tips.
3. they typically have a matte finish to prevent reflecting light into the surgeon’s eyes.
4. they are designed to reduce the surgeon’s chances of muscle fatigue and tremors.

**196 .** A technician examines a dog that has fractured a tooth. Thetoothhasbrokendowntothepulpcavity and there’s evidence of bleeding. It’s obvious the patient is in pain as the pulp contains the tooth’s sensory nerves and blood vessels. Which treatment will the technician *most likely* recommend for the dog’s fractured tooth?

1. Ice it and wait for healing.
2. Apply a fluoride sealant.
3. Perform root canal therapy.
4. Remove the fractured tooth.

**197 .** Which of the following combination of drugs is used to treat thunderstorm phobia and separation anxiety in dogs?

1. Atypical antipsychotics and tricyclic antidepressants
2. Anticonvulsants and monoamine oxidase inhibitors
3. Atypical antipsychotics and anticonvulsants
4. Tricyclic antidepressants and benzodiazepines

**198 .** Which of the following threatens aseptic techniques and should be avoided in operating rooms?

1. Lighting fixtures that are flush with ceiling
2. Ventilation units
3. Waterproof, recessed electrical outlets
4. Forced-air heating units

**199 .** Which of the following is an example of poor inventory-control techniques?

1. A veterinary technician reads the label of a medication to find out where to store it.
2. A veterinary technician checks and marks the inventory sheet while unloading supplies.
3. A veterinary technician makes notes about supplies that are running low.
4. A veterinary technician places new items in front of old items on storage shelves.

**200 .** A correct statement concerning transporting patients with wounds involving penetrating foreign bodies is:

* 1. wounds should be dressed using cotton or wool gauze.
  2. protruding foreign bodies should be cut close to the wound.
  3. wounds should be cleaned using a general antiseptic ointment.
  4. protruding foreign bodies should be removed before dressing the wound.

### PraCTiCe TesT 2: answer key and exPLanaTiOns

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. 2 | 41. 3 | 81. 2 | 121. 1 | 161. 3 |
| 2. 2 | 42. 2 | 82. 2 | 122. 3 | 162. 3 |
| 3. 1 | 43. 4 | 83. 1 | 123. 2 | 163. 2 |
| 4. 1 | 44. 1 | 84. 1 | 124. 3 | 164. 1 |
| 5. 1 | 45. 4 | 85. 4 | 125. 4 | 165. 1 |
| 6. 3 | 46. 1 | 86. 2 | 126. 2 | 166. 2 |
| 7. 2 | 47. 1 | 87. 1 | 127. 4 | 167. 2 |
| 8. 2 | 48. 2 | 88. 1 | 128. 4 | 168. 1 |
| 9. 4 | 49. 1 | 89. 4 | 129. 2 | 169. 2 |
| 10. 4 | 50. 4 | 90. 3 | 130. 1 | 170. 1 |
| 11. 2 | 51. 1 | 91. 3 | 131. 2 | 171. 2 |
| 12. 3 | 52. 3 | 92. 2 | 132. 2 | 172. 1 |
| 13. 3 | 53. 3 | 93. 4 | 133. 4 | 173. 3 |
| 14. 1 | 54. 4 | 94. 3 | 134. 4 | 174. 4 |
| 15. 1 | 55. 3 | 95. 1 | 135. 2 | 175. 3 |
| 16. 1 | 56. 3 | 96. 4 | 136. 3 | 176. 4 |
| 17. 4 | 57. 2 | 97. 4 | 137. 1 | 177. 3 |
| 18. 1 | 58. 1 | 98. 4 | 138. 1 | 178. 1 |
| 19. 4 | 59. 4 | 99. 1 | 139. 3 | 179. 3 |
| 20. 2 | 60. 3 | 100. 2 | 140. 1 | 180. 4 |
| 21. 3 | 61. 3 | 101. 2 | 141. 2 | 181. 3 |
| 22. 2 | 62. 2 | 102. 3 | 142. 3 | 182. 1 |
| 23. 4 | 63. 1 | 103. 1 | 143. 2 | 183. 1 |
| 24. 3 | 64. 2 | 104. 4 | 144. 3 | 184. 3 |
| 25. 2 | 65. 3 | 105. 4 | 145. 2 | 185. 4 |
| 26. 1 | 66. 1 | 106. 1 | 146. 1 | 186. 3 |
| 27. 2 | 67. 4 | 107. 2 | 147. 3 | 187. 2 |
| 28. 4 | 68. 3 | 108. 2 | 148. 2 | 188. 1 |
| 29. 2 | 69. 2 | 109. 3 | 149. 2 | 189. 3 |
| 30. 4 | 70. 2 | 110. 3 | 150. 2 | 190. 3 |
| 31. 2 | 71. 2 | 111. 4 | 151. 1 | 191. 1 |
| 32. 4 | 72. 2 | 112. 4 | 152. 4 | 192. 1 |
| 33. 3 | 73. 4 | 113. 2 | 153. 3 | 193. 3 |
| 34. 3 | 74. 2 | 114. 3 | 154. 1 | 194. 1 |
| 35. 1 | 75. 3 | 115. 3 | 155. 3 | 195. 1 |
| 36. 1 | 76. 4 | 116. 3 | 156. 2 | 196. 3 |
| 37. 4 | 77. 3 | 117. 4 | 157. 1 | 197. 4 |
| 38. 4 | 78. 3 | 118. 3 | 158. 1 | 198. 4 |
| 39. 3 | 79. 1 | 119. 3 | 159. 2 | 199. 4 |
| 40. 3 | 80. 3 | 120. 3 | 160. 2 | 200. 2 |

1. **Thecorrectansweris2.**Coronaryvasoconstriction, among other factors, causes a decrease in cardiac output by 50% in most animals. Another factor is the baroreceptor reflex. Increased afterload, low catecholamine levels, and decreased myocardial oxygen consumption can all increase cardiac output, so choices 1, 3, and 4 incorrect.
2. **The correct answer is 2.** Often, geriatric patients take longer to recover than young patients. By scheduling geriatric patients before young patients, you give the geriatric patients more time during the day to recover, thereby reducing the likelihood of those patients having to spend another night at the hospital. Choice 1 is incorrect because geriatric, not young, patients are more likely to become stressed. Choices 3 and 4 are incorrect because geriatric patients have to eat and drink more often than young patients, which is another reason why geriatric patients should be scheduled for surgery before young patients.
3. **The correct answer is 1.** Premolars are primarily used for cutting, shearing, and holding. Incisors (choice 2) are used for cutting and nibbling. Molars (choice 3) are used for grinding. Canines (choice

4) are used for holding and tearing.

1. **The correct answer is 1.** As soon as a tissue sample is removed from an animal, the tissue immediately begins to die, and cell membranes begin to break down in a process called autolysis. Warm temperatures and high levels of humidity accelerate this process, so choice 2 is incorrect. Fixing tissues delays, rather than accelerates, deterioration of the cells, so choice 3 is incorrect. Tissues for standard histological examination should not be frozen for the test, so choice 4 is incorrect.
2. **The correct answer is 1.** Clients should not be skeptical of the veterinarian’s treatments or instructions in a veterinarian-client-patient relationship. If the client refuses to follow or doubts the veterinarian’s instructions, a veterinarian- client-patient relationship doesn’t exist. Choices 2, 3, and 4 are all common traits of a successful veterinarian-client-patient relationship, so these choices are incorrect.
3. **The correct answer is 3.** Amajor disadvantage of performing fluoroscopic studies on animals is that

the equipment used exposes veterinary personnel to a large amount of radiation. Technicians who know how to protect themselves properly from radiation should be among the only people who run these studies. Choice 1 is incorrect because the price of the test is worth the benefits of the test. Choice 2 is incorrect because being able to save images in different formats is a benefit of using fluoroscopic studies. Choice 4 is incorrect because fluoroscopic studies are quicker and easier to perform than angiographic catheterizations.

1. **The correct answer is 2.** The tape technique— which involves pressing a piece of clear adhesive tape to an area of the animal’s skin, pulling it off, and inspecting the tape under a microscope—doesn’t detect ringworm. Instead, hairs are removed and tested for ringworm infection. Choices 1, 3, and 4 are incorrect because the tape technique works for examining skin for bacteria, Malassezia, and surface mites.
2. **The correct answer is 2.** The equipment that is still sterile is the instrument that the technician opened without touching the paper to the instrument. Instruments are still sterile when they are open if they are opened correctly. Choice 1 is incorrect because instruments in wet packaging are not sterile. Choice 3 is incorrect because packages that have been punctured or otherwise opened improperly are not sterile. Choice 4 is incorrect because the technician’s forearm touching the instrument made the instrument unsterile.
3. **The correct answer is 4.** Although smaller containers can be placed inside one large container, all containers (regardless of size or location) need detailed labels. Choices 1, 2, and 3 are incorrect because these statements are true. Toxicology specimens should never be washed; they should be submitted in leak-proof and sterile containers, and they should be collected fresh and delivered frozen.
4. **The correct answer is 4.** Many clinics don’t line kennel floors with newspapers because newspapers don’t warm patients. Newspapers are, however, readily available, easily disposable, and absorbent, so choices 1, 2, and 3 are incorrect.
5. **The correct answer is 2.** In dogs, amio- darone metabolizes to desethylamiodarone.

Desethylamiodarone is often used to block fast- moving—not slow-moving—sodium channels, so choice 3 is incorrect.Amiodarone hasahighiodine content and is structurally related to levothyroxine, making choices 1 and 4 incorrect.

1. **The correct answer is 3.** Atracurium doesn’t cause sympathetic stimulation. Choices 1, 2, and 4 are incorrect because atracurium causes a release of histamine, doesn’t affect intraocular pressure, and has indeterminate effects.
2. **The correct answer is 3.** Key-Gaskell Syndrome is rare, but when it does appear, it usually affects cats younger than 3 years, not older. Choices 1, 2, and 4 are incorrect as these statements are true regarding Key-Gaskell Syndrome. The syndrome is also known as feline dysautonomia, and it affects theautonomicnervous system. Research has shown more cases have been documented along the West Coast and Midwest regions of the United States than the East Coast.
3. **The correct answer is 1.** In a generally healthy patient, an anesthetic that is administered intravenously will most likely take effect within a few seconds. Intravenous drugs usually begin to work almost instantly. Choices 2, 3, and 4 are incorrect because intravenous drugs do not take a few minutes (choice 2), a few hours (choice 3), or a few days (choice 4) to take effect.
4. **The correct answeris 1.** One of the goals veterinary medical teams need to meet when anesthetizing a patient for ophthalmic surgery is to provide an immobile eye for the procedure. Choices 2, 3, and 4 are incorrect because the other goals teams have when anesthetizing a patient for this type of operation include providing a pain-free recovery, supporting cardiopulmonary function, and avoiding increases in intraocular pressure.
5. **The correct answer is 1.** Michel’s trephine is most often used for bone biopsies. It cuts a circular hole in bones such as the skull, spine, or hip; is available in a range of diameters; and is manually operated. Therefore, choices 2, 3, and 4 are incorrect.
6. **The correct answer is 4.** Hydrochloric acid found in animal urine is typically used for the biochemical analyses of urea, ammonia, calcium, nitrogen, and uric acid. Choices 1 and 3 are incorrect because

these substances are hazardous. Choice 2 is incorrect because acetic acid is used to determine levels of ascorbic acid.

1. **The correct answeris 1.** Praziquantel is used to treat the majority of tapeworm infections in companion animals such as dogs and cats. Praziquantel is not effective, however, in the treatment of *Spirometra mansonoides* and *Diphyllobothrium erinacei*. Niclosamide, buanamidine, and albendazole aren’t so effective in the treatment of tapeworm infections in cats and dogs, so choices 2, 3, and 4 are incorrect.
2. **The correct answer is 4.** Dyspnea, or shortness of breath, is a life-threatening condition that should receive immediate medical care. Choices 1, 2, and 3 are incorrect because the condition is a true emergency. An example of a minor emergency is an insect sting, and an example of a serious emergency would be a bone or joint dislocation.
3. **The correct answer is 2.** During stage 2, patients have lost consciousness and move involuntarily. Stage 2 is when patients react to external stimulus with a struggling reflex. Choice 1 is incorrect because patients in stage 1 still have voluntary movement. Choices 3 and 4 are incorrect because patients have depressed reflexes during stages 3 and 4.
4. **The correct answer is 3.** Many times, technicians need to restrain the animal during feces collection so that the animal doesn’t bite, scratch, or walk away during the collection. The best results come from fresh feces, rather than those samples picked up off the ground or collected from a litter box, so choice 1 is incorrect. Choice 2 is incorrect because urine should be collected first, not feces. A technician should never force feces from an animal as it may result in skin tissues in the sample or damage to the anal/rectal mucosa, so choice 4 is incorrect.
5. **The correct answeris 2.** Thiacetarsamide sodium is most frequently used to treat heartworms. Thiacetarsamide isn’t recommended for the treatment of the types of worms in choices 1, 3, and 4, so those answers are incorrect.
6. **The correct answer is 4.** Rotary saws should not be used to perform surgery on animals. Choices 1, 2, and 3 are incorrect because oscillating saws,

pneumatic drills, and electric drills are used in veterinary surgery.

1. **The correct answer is 3.** Adairy cow’s serum and plasma may appear yellow during a colorimetric test because of the cow’s high-carotene diet. Choices 1, 2, and 4 are incorrect because carotene is a chromatin that may change plasma and serum to yellow, not to red, green, or blue.
2. **The correct answer is 2.** When determining which intramuscular route to use while administering medication, a technician should avoid the gluteal muscles in the buttocks as well as the hamstring muscle group. Injections in these areas may cause bone or sciatic damage. Choices 1, 3, and 4 are incorrect because the areas in these options are all suitable injection sites.
3. **The correct answer is 1.** Although most normal, healthy patients have to fast for 12 hours before surgery, very young patients should not fast for long before anesthesia because they could become hypoglycemic. Choice 2 is incorrect because most healthy animals can have water, but not food, up to the time of the preoperative examination. Choice 3 is incorrect because patients undergoing abdominal surgeries generally fast longer than patients undergoing other surgeries. Choice 4 is incorrect because most patients must fast at least 12, not 4, hours before their surgeries.
4. **The correct answer is 2.** Rochester-Carmalt hemostatic forceps are designed so that the grooves of the instrument run longitudinally, making it easier to clamp down on stumps or pedicles. Choice 1 is incorrect because Halstead mosquito hemostatic forceps aren’t large enough or strong enough to perform these tasks and are instead used on smaller point bleeders. Doyen intestinal forceps (choice 3) are tissue forceps used for stomach surgeries. Babock intestinal forceps (choice 4) are used only on connective tissues.
5. **The correct answer is 4.** Technicians should administer only nonirritant drugs via the subcutaneous route. Otherwise, the animal may experience irritation or necrosis of the skin. Choices 1, 2, and 3 are incorrect because the effects of subcutaneous injections are felt 30–45 minutes after injection, the area has a small supply of nerves, and the area has a large supply of blood vessels.
6. **The correct answer is 2.** X-rays are converted into visible light photons and photoelectrons in the image intensifier tube. X-rays originate in the fluoroscopic tube, which is located beneath the structure. The X-rays pass through the animal and into the image intensifier tube. From there, the photoelectrons go to the electrostatic lenses, which send the image to the output fluorescent screen. Choices 1, 3, and 4 are incorrect because these parts don’t play a role in the conversion of X-rays to visible light photons.
7. **The correct answer is 4.** Morphine is an opioid that is often injected. Choices 1, 2, and 3 are incorrect because isoflurane, ether, and halothane are anesthetic drugs that are most often inhaled.
8. **The correct answer is 2.** Curettes are used for root planning and for the removal of subgigival calculus and soft tissue diseases in the periodontal pocket, so choice 3 is incorrect. Choice 1 is incorrect because curettes have one blade with two cutting edges. Choice 4 is not correct because a curette’s cutting edges can be used on the front and the back of an animal’s teeth.
9. **The correct answer is 4.** Surgeons would most likely not perform a dental prophylaxis, which includes tartar removal and the extraction of broken teeth, on a wild animal. Wild animals are generally not given routine patient treatments such as teeth cleanings. Scientists may perform abdominal surgeries (laparotomy), sterilization procedures, and flight restraint operations if necessary. Therefore choices 1, 2, and 3 are incorrect.
10. **The correct answer is 3.** In vitro, meaning “outside the body,” hemolysis shouldn’t occur if the plasma is successfully separated before transit. If a technician failed to separate the plasma, hemolysis may occur. Choices 1, 2, and 4 are incorrect because osmotic pressure, the size of the needle, and the vigorous shaking of samples can cause red cells to break and spill.
11. **The correct answer is 3.** The Robert Jones bandage technique requires the application of zinc oxide traction tape to the dorsal and ventral surfaces of the foot. It decreases the chance the bandage will slip during application or during recovery. Choices 1, 2, and 4 are incorrect as the bandage can last onlyupto 2 weeks, thebandagedoesn’t necessarily

have to cover the toes, and this technique requires a very large amount of cotton wool.

1. **The correct answer is 1.** The darkest parts of an exposed X-ray film indicate the presence of gas. Five gradients, from black to white, appear on exposed X-ray films according to the attenuation of tissues in the X-ray. While gas is the darkest opacity, mineral is the most opaque and appears as white on the film. Choices 2, 3, and 4 are incorrect because muscle appears as a gray color on X-ray films, while bone and mineral appear white. Fat appears as a dark gray or lighter black color on the films.
2. **The correct answer is 1.** Technicians administer anesthetics to horses intravenously through the jugular vein, which is located in the horse’s neck. Choices 2, 3, and 4 are incorrect because cephalic, saphenous, and mesenteric veins aren’t injected when anesthetizing a horse.
3. **The correct answer is 4.** Choices 1, 2, and 3 are incorrect because piperazine is recommended for use in dogs, cats, pigs, horses, and poultry with modular worm and pinworm infections. Technicians don’t recommend its use in cattle. Praziquantel treats worms in cattle and sheep.
4. **The correct answer is 4.** Hypodermic injections are commonly administered via the subcutaneous, intramuscular, and intravenous routes, so choices 1, 2, and 3 are incorrect. They’re not typically administered via epidural. Technicians decide which route is appropriate for each patient by assessing the patient’s temperament, present condition, and how quickly the medication will cause a reaction.
5. **The correct answer is 3.** A bovine, or cow, has a dental formula of I0/6 C0/2 P6/6 M6/6, which equals 32 teeth. Each letter stands for a type of tooth: incisors (I), canines (C), premolars (P), and molars (M). In the formulas of adults, the letters are capitalized. Choices 1, 2, and 4 are incorrect because these formulas do not equal 32.
6. **The correct answeris 3.** If needle holders become too worn, they can very easily be replaced. Choice 1 is incorrect because they are one of the few instruments actually involved in metal-to-metal contact during surgeries. Choice 2 is incorrect

because asthey experience wear andtear, they grow sharp, not dull, and the risk of slicing necessary threads or materials increases. Large needles aren’t recommended for placing delicate sutures because they don’t offer so much control as the small needles, so choice 4 is incorrect.

1. **The correct answeris 3.** Generally, urine samples are collected and stored in plastic sample bottles. Choice 1 is incorrect because blood is collected in Vacutainers. Choice 2 is incorrect because cultures, not urine, are generally stored in Petri dishes. Choice 4 is not correct because glass vials are not generally large enough to collect and store urine samples.
2. **The correct answer is 2.** Occlusive dressings help to retain moisture within the wound. This moisture helps to eliminate necrotic tissue and allow for new, healthy tissue to form beneath the bandage. Choice 1 is incorrect because dry dressings absorb pus and other fluids. Choice 3 is incorrect because hemostatic dressings are used to control excessive bleeding. Choice 4 is incorrect because impregnated gauze dressings are applied to wounds that need to be kept moist from the outside, such as burns.
3. **The correct answer is 4.** When collecting cerebrospinal fluid, the area of the spine that technicians most frequently tap is the atlanto- occipital joint. They may also try the lumbosacral space. Although choices 1, 2, and 3 are areas of the spine, technicians don’t typically tap them for CSF, so they are incorrect.
4. **The correct answer is 1.** A venous portography allows for further study of the portal venous system and requires an injection of positive contrast media into the animal’s spleen or mesenteric vein, the vein responsible for draining blood from the small intestine. The mesenteric vein combines with the splenic vein to form the hepatic portal vein. Choices 2, 3, and 4 are incorrect because the cephalic, saphenous, and jugular veins don’t receive injections of positive contrast material during a venous portography.
5. **The correct answer is 4.** Of the methods listed, blood pressure monitoring is least likely to be used by technicians during a procedure, especially if they are performing the surgery in the field. In the clinic,

they may have access to blood pressure monitoring andevenelectrocardiographytests, butmanytimes technicians go without these monitoring methods while they work in the field. Choices 1, 2, and 3 are incorrect because these methods are used by veterinarians and technicians regardless of the procedure’s location.

1. **The correct answer is 1.** Veterinarians may recommend the use of tofranil, elavil, or sinequan as an antidepressant. Choices 2 and 3 are incorrect because ativan and valium are benzodiazepines, and choice 4 is incorrect because risperdal is an atypical antipsychotic.
2. **The correct answer is 1.** If a person ingested chemical agents, he or she should seek medical attention as soon as possible. He or she should also try not to vomit. Choices 2, 3, and 4 are incorrect because they simply require flushing the contaminated area or dressing the wound. Unless irritation or bleeding persists, medical attention isn’t necessary.
3. **The correct answer is 2.** When drawing blood from animals, a technician’s first choice is always the jugular. If the jugular cannot be used for any reason, the technician will use the cephalic vein. Choices 1 and 4 are incorrect because these are not first-choice veins. Choice 3 is incorrect because the renal arteries are responsible for supplying the kidney with blood and should not be disturbed.
4. **The correct answer is 1.** Saffan has been proven to be most effective on cats. It’s a steroid anesthetic, composed of alphaxalone and alphadolone. The typical dose for cats is 3–6 mg/kg. Choices 2, 3, and 4 are incorrect because this type of anesthetic at this particular amount is not used to anesthetize dogs, birds, or rabbits. When used in dogs, saffan causes a release of histamine.
5. **The correct answer is 4.** Technicians often have to perform emesis on a patient when the contents of the patient’s stomach must be removed. Often times, this happens before surgery or before digestion is complete. Animals that swallow small toys or valuable items must be made to either vomit the item or wait until it moves into the bowel. Animals that have swallowed toxic materials are also made to vomit by emetics. Emesis is not recommended, however, when an animal has ingested a corrosive

poison because bringing the poison back up through the stomach and throat will cause further harm and pain to the animal. Choices 1, 2, and 3 are incorrect as technicians can safely perform emesis in the situations presented in these options.

1. **The correct answer is 1.** An ideal operating room has one door to restrict or limit the flow of traffic into the operating room. The door should lead into the preparation room. Choices 2, 3, and 4 are incorrect because any more than one door would make for too much traffic in the operating room.
2. **The correct answer is 3.** Horses must fast for at least 12 hours before they receive anesthesia and surgery begins. They can drink water up to an hour before their surgery, but they cannot have any food during this time period. Choices 1 and 2 are incorrect because a horse should fast longer than 6 to 10 hours before surgery. Choice 4 is incorrect because a horse can fast for fewer than 14 hours.
3. **The correct answer is 3.** Due to its caustic, or corrosive, characteristics, formaldehyde should not be used as an antiseptic or disinfectant. If the chemical is ever used, the handler should wear protective gloves. Choices 1, 2, and 4 are all chemical agents integrated in many common animal-safe antiseptics and disinfectants.
4. **The correct answer is 4.** When the skin has been contaminated with a biological agent, one should never scrub the skin. Instead, one should rinse the area with water (choice 1), gently lather it with soap (choice 3), rinse again, and wipe with antiseptic cloths (choice 2).
5. **The correct answer is 3.** Although technicians may apply hot or cold cloths to a recumbent patient, they wouldn’t place the patient in an ice bath. Technicians would, however, give the animal massages and apply pressure to the thorax to help drain secretions. This process is called coupage. They would also treat the patient with hydrotherapy. So, choices 1, 2, and 4 are incorrect.
6. **The correct answer is 3.** A right lateral decubital projection is achieved when an animal is lying on his or her right side. Positions are named after the points where the X-ray will enter the body and leave the body. Choice 1 is incorrect because ventrodorsal projection indicates the X-ray enters

the ventral surface and exits the dorsal surface. Choice 2 is incorrect because in this position, the X-ray enters the cranium and exits the tail. Choice 4 is also incorrect as in this position the X-ray passes from the right side of the body to the left.

1. **The correct answer is 2.** The most common anesthetics veterinarians use on horses are standing sedations. These anesthetics allow horses to remain standing for both painful and difficult procedures. Choices 1, 3, and 4 are incorrect because these facts are true. Local anesthetics are used on horses to diagnose issues such as lameness, general anesthetics are used for procedures like cheek teeth removals, and the use of anesthetics in horses creates a higher level of safety for handlers, veterinarians, and the animal.
2. **The correct answer is 1.** When Beta-blockers are administered through an IV to dogs, veterinary technicians should monitor the animal’s blood pressure and electrocardiograms. Large amounts of propranolol may have cardiac depressant effects. Technicians don’t need to take X-rays (choice 2), monitor blood pressure and breathing sounds (choice 3), or watch bleeding or breath sounds (choice 4).
3. **The correct answer is 4.** Anyone entering the operating room should wash their hands with antiseptic scrubs for at least 2 full minutes. They should also have previously cut their nails short. Nails should be clean, without nail polish or false nails. Choices 1, 2, and 3 are incorrect because the times presented in these options are too short.
4. **The correct answer is 3.** A gray Vacutainer with a yellow collecting pot should contain a sample of whole blood and an anticoagulant of oxalate fluoride. Choice 1 is incorrect because heparin is found in green or green and orange Vacutainers with orange collecting pots. EDTA is found in lavender Vacutainers with pink collecting pots, so choice 2 is incorrect. Choice 4 is incorrect because sodium citrate anticoagulants are found in light blue Vacutainers.
5. **The correct answer is 3.** Although Bubble Wrap may be used to keep an animal warm, it’s not often used to pad bandages. Instead, natural and man-made fibers such as foam, Soft Ban, and cotton wool are used as padding, so choices 1, 2, and 4 are incorrect.
6. **The correct answer is 2.** Morphine is an opioid. Choices 1 and 3 are incorrect because ketoprofen and aspirin are nonsteroidal anti-inflammatory drugs (NSAIDs). Choice 4 is incorrect because lidocaine is a local anesthetic.
7. **The correct answer is 1.** The first step a technician should complete when bandaging ananimal’s earis to place a pad of cotton wool on the animal’s head and fold the ear back onto the pad. The technician should then apply a dry dressing and place another pad of cotton wool over the ear. After applying a conforming bandage over the ear and under the chin, the technician may choose to anchor the bandage on the sides of the animal’s head with the other ear. Finally, the technician should cover the bandage with adhesive tape. Choices 2, 3, and 4 are incorrect because these steps occur only after the ear is folded back onto a pad of cotton wool.
8. **The correct answer is 2.** A dog that is obese must be monitored closely during general anesthesia because obese patients can suffer many complications from anesthesia. Choices 1 and 3 are incorrect because those patients have normal heart rates, so they do not need to be monitored so closely as the obese dog. Choice 4 is incorrect because animals with normal weights are generally lower risk than animals with higher weights.
9. **The correct answer is 3.** Studies in 2006 indicated that use of acepromazine, an antipsychotic medication, did not lead to an increased risk of seizures when used to treat dogs. Veterinarians often recommend against the use of acepromazine for animals who are at risk of seizures, such as cats, squirrels, and bats, so choices 1, 2, and 4 are incorrect.
10. **The correct answer is 1.** Alcohols are drying agents, so choice 1 is correct. Because alcohols have a strong defatting effect, choice 2 is incorrect. Alcohols are more effective if they contain a small concentration of water, and they have a quick bacterial kill rate, so choices 3 and 4 are incorrect.
11. **The correct answer is 4.** Choices 1, 2, and 3 are incorrect because dentin, pulp cavity, and cementum are found in the teeth of both herbivores and carnivores. Only herbivores have infundibula, however, which are funnel-shaped indents at the tip of the tooth.
12. **The correct answer is 3.** The use of an autoclave is not necessary in this situation. It would be appropriate if cultures or used samples had contaminated a specific area, but when cleaning up a flammable liquid, the technician needs sand (choice 1), a bucket, water (choice 2), and detergent (choice 4). After absorbing the liquid, the sand can be shoveled into a bucket for disposal. The area of the spill can then be washed with soap and water.
13. **The correct answer is 2.** The veterinarian should complete the surgery because the animal is clearly suffering from the condition. But, the owner can no longer breed or show the dog because the dog’s genetic condition has been changed. Choice 1 is incorrect because the animal is suffering and should be cared for. Choice 3 is incorrect because the veterinarian can treat the patient even if it is the first time she meets it and its owner. Choice 4 is incorrect because a veterinarian should not raise prices just because she is treating a show dog.
14. **The correct answer is 2.** A myelography allows technicians to examine an animal’s spinal cord and help make a diagnosis of myelopathy, a condition in which the animal experiences clinical signs of pain, paralysis, or paresis. Choices 1, 3, and 4 are incorrect because these tests are not designed to allow further examination of the spinal cord. Celiographies allow for examination of the abdomen, angiographies allow for examination of the circulatory system, and epidurographies allow for further examination of the epidural space.
15. **The correct answer is 2.** Frequent visits by the owner are not advisable during an animal’s recovery. Although a few visits while the animal is away from home is acceptable, technicians recommend against daily visits as it’s often difficult for an animal to watch his or her owner walk away at the end of the visit. Choices 1, 3, and 4 are incorrect because giving the animal toys from home, frequently using the animal’s name, and frequent grooming all aid in an animal’s recovery as it keeps up morale and makes the patient feel special.
16. **The correct answer is 2.** Some veterinarians choose to use local anesthetics in combination with surgical anesthesia because the local technique doesn’t affect cardiopulmonary function, which

makes the combined technique useful for high-risk procedures. Choices1, 3, and 4 are incorrect because these facts are true.

1. **The correctanswer is 4.** Stomach tubesmeasuring 18 French are most appropriate for use with large dogs weighing more than 22.2 lbs. Choices 1, 2, and 3 would all be too small to use in this scenario.
2. **The correct answer is 2.** Fixed and centrally rotated eyeballs are a sign that the patient is in plane III. Other possible signs include increased abdominal respiration; dilated pupils; a fast, faint pulse; and decreased blood pressure. The other choices would suggest different planes.
3. **The correct answer is 3.** The second category measures the antiseptic’s persistent microbial effectiveness. The first category measures the antiseptic’s immediate efficacy, choice 1, meaning its effectiveness within the first 60 seconds after application. The third category measures the antiseptic’s residual action, choice 4, or its effectiveness after five days of application. Choice 2 is incorrect because it’s not one of the three categories.
4. **The correct answer is 4.** Since teeth are living structures that have their own nerve supply, blood vessels, and even lymph drainage, choices 1, 2, and 3 are incorrect. Domestic and wild animals experience tooth pain similar to humans. When teeth break or gums surrounding teeth are infected, the animal feels pain.
5. **The correct answer is 3.** Water turnover is the term used to describe the input and output of body water over a given period of time. Water shed, water monitoring, and water quality aren’t veterinary or medical terms, so choices 1, 2, and 4 are incorrect.
6. **The correct answer is 3.** Colorimetry is the measurement of light that isabsorbed ortransmitted by a specific substance or solution at a particular wavelength. The light absorbed may be inverse or visual colorimetry while the light transmitted may be direct or photometric colorimetry. Colorimetry is measured using a colorimeter. Choices 1, 2, and 4 are incorrect because colorimetry is not a measurement of color, sound, or waves.
7. **The correct answer is 1.** Technicians should feed animals in recovery food that is easy to digest,

such as chicken or scrambled eggs. Food should be served warm; therefore, choice 2 is incorrect. If the animal doesn’t eat the food within 15 minutes of being served, the technicians should take the food away. It’s important not to leave the food out for a prolonged period of time, so choice 3 is incorrect. Technicians often place pieces of food on the paws or noses of their patients in an attempt to interest them in eating; they rarely place the food out of reach of a recovering animal that may be in pain. Therefore, choice 4 is incorrect.

1. **The correct answer is 3.** Upper gastrointestinal studies are designed to study the stomach and small intestine. They are typically recommended when an animal shows symptoms of small intestine disease such as vomiting, abdominal pain, or anorexia. If the bowel appears to be obstructed, a UGI is ordered to get a closer look at what may be obstructing the process. Choices 1, 2, and 4 are incorrect because UGIs don’t examine the kidneys, liver, colon, or large intestine.
2. **The correct answer is 2.** One way to tell if a patient is unsuited for anesthesia is to take him or her on a walk. If the animal collapses or becomes distressed or dyspneic, a technician may conclude that placing the patient under anesthesia may threaten its life. Choices 1, 3, and 4 are incorrect because walking the animal—not examining its eating habits, observing its sleeping habits, or testing its urine or feces—is the best way to tell whether anesthesia is suitable.
3. **The correct answer is 2.** After the technician dropped the vial, she cleaned the mess and told her supervisor about the spill, so the worker acted responsibly and ethically. Choice 1 is incorrect because accidents can happen, and dropping a vial does not prove negligence. Choice 3 is not correct because the worker is not required legally or ethically to report the spill to the patient’s owner. Choice 4 is not correct because veterinary technicians (as well as veterinarians) can be reported for unethical behavior.
4. **The correct answer is 1.** Animals younger than 4 months old shouldn’t fast more than 4 hours before the surgery. Larger or adult animals should fast up to 12 hours before the surgery. They can handle a longer fasting because their glycogen reserves are

larger than those in newborns or young animals. Choices 2, 3, and 4 are incorrect because the times indicated are too long.

1. **The correct answer is 1.** In dogs, the first molar in the lower arcade and the fourth premolar in the upper arcade are larger than the rest and are referred to as carnassial teeth. The pairings in choices 2, 3, and 4 are incorrect because both teeth in these combinations aren’t typically larger than the other teeth in a dog’s mouth.
2. **The correct answer is 4.** Once you’ve finished using the microscope, you should turn down the rheostat, turn off the light, lower the stage, and finally clean the oil immersion lens, so choice 4 is correct. Once the lens is clean, you can cover the microscope and store it. Choices 1, 2, and 3 are incorrect because these steps occur before the action in choice 4.
3. **The correct answer is 2.** Newborn animals are poikilothermic, meaning their body temperature is easily influenced by their surroundings. Since newborns need to be warm, they are often placed in an incubator where the warm temperature is controlled and constant. The temperature of an incubator should be 86–91°F, or 30–33°C. Choice 1 is incorrect as the range is too low, and choices 3 and 4 are incorrect because the temperature ranges are too high.
4. **The correct answer is 1.** Granulation tissue is typically applied when the edges of the wound are separated, not close together. Choices 2, 3, and 4 are incorrect because these statements are true: the wound often becomes infected, scarring is often extensive, and healing can take place over weeks and even months.
5. **The correct answer is 1.** Rhinography studies are performed if an animal’s nasal cavity may be obstructed, if there is pharyngeal discharge, or if there may be an upper airway obstruction. Rhinography is a contrast study of the nasal cavity. Choices 2, 3, and 4 are incorrect because rhinography doesn’t allow for further study of the cranial, pelvic, or thoracic cavities.
6. **The correct answer is 4.** When veterinarians administer ketamine to an animal, the animal’s protective airway reflexes are maintained. Since the

animal’s eyes remain open, the pupil’s dilate, and the cranial nerve reflexes become less depressed, choices 1, 2, and 3 are incorrect. Ketamine also causes the animal’s heart rate to increase, breathing to reduce, and salivation to increase.

1. **The correct answer is 3.** Canine teeth may appear as tusks in some species of animals. They are located at the corners of the incisors and are typically pointed at the tip. Choice 1 is incorrect because premolars and molars are known as “cheek” teeth, not canines. Choices 2 and 4 are also incorrect because molars have flat, occlusal surfaces that animals use for grinding, and premolars in carnivores may have multiple, sharp points.
2. **The correct answer is 3.** Sevoflurane crosses the placental barrier very quickly and leads to fetal depression. Halothane (choice 1) is incorrect because it crosses the placental barrier, but does not result in fetal depression. Thiopental (choice

3) and etomidate (choice 4) are not correct because they cross the placental barrier, but have little to no effect on the fetus due to rapid clearance.

1. **The correct answer is 2.** Choice 2 is correct because the function of pulse oximeter is to chart the puppy’s pulse rate and oxygen levels in the blood. Choice 1 is incorrect because an invasive blood pressure monitor tracks the direct systolic and diastolic blood pressures. Choice 3 is not correct because an ultrasonic Doppler unit can be used to chart pulse rate and rhythm. Choice 4 is incorrect because respiratory air movement can be monitored by a respiratory monitor.
2. **The correct answer is 4.** Of the group listed, bacterial endospores is the most resistant to disinfectants. Vegetative bacteria, choice 2, are typically the least resistant to disinfectants, followed by choice 3 and choice 1.
3. **The correct answer is 3.** Autonomic blocking drugs are often administered before anesthesia to prevent accidental stimulation of autonomic influences on visceral tissues. Many autonomic blocking drugs also act as antidotes to specific chemical toxins. Choices 1, 2, and 4 are incorrect because these types of blocking drugs (beta, neuromuscular, and acid) are not administered before anesthesia to prevent stimulation.
4. **The correct answeris 1.** Anisocoria is a condition in which the pupils of the eyes are different sizes. Choices 2, 3, and 4 are incorrect because cherry eye, entropion, and glaucoma are common eye/ sight conditions in dogs, but each has different symptoms.
5. **The correct answer is 4.** Mucous membranes in cats and dogs should be pink, not white, and capillary refill time should be between 1 and 2 seconds. Dogs and cats may be healthy if their eyes are free of discharge, their ears are clean and odor-free, and they’re able to move their limbs without any pain or resistance, so choices 1, 2, and 3 are incorrect.
6. **The correct answer is 4.** The loss of more than 20% of an animal’s body weight puts the animal at risk of death during the procedure. If the animal survives the surgery, it will most likely experience a variety of postoperative complications. Choices 1, 2, and 3 are incorrect because the percentages are too low.
7. **The correct answer is 4.** An adult dog typically has 42 teeth. Puppies have 28 teeth, kittens have 26 teeth, and adult cats have 30. Therefore, choices 1, 2, and 3 are incorrect.
8. **The correct answer is 1.** The stage holds the slides on a compound microscope. Choice 2 is incorrect because the rotating turret is part of the nosepiece. Choice 3 is incorrect because the optical tube is within the body of the microscope. Finally, choice 4 is incorrect because the slides rest on the stage, which is above the substage condenser.
9. **The correct answer is 2.** An intravenous pyelogram (IVP) uses an X-ray and injectable dye to track the function of the kidneys, ureters, and urinary bladder. Choice 1 is incorrect because urohydropropulsion is a procedure used to help pass bladder stones through the urethra. A CAT scan (computed tomography or CTscan) uses X-rays to scan the body for brain and spinal cord disorders, so choice 3 is incorrect. A perineal urethrostomy creates a new opening through which urine can pass and is performed on male cats with severe urinary blockages, so choice 4 is incorrect.
10. **The correct answer is 2.** A patient with a mild systemic disease would be placed in Class 2. Choice

1 is incorrect because Class 1 includes normal, healthy patients receiving elective procedures. Choice 3 is incorrect because Class 3 contains patients with severe systemic diseases that aren’t incapacitating. Choice 4 is incorrect because Class 4 is for patients with severe systemic diseases that are a constant threat to the patients’ lives. Class 5, the final categorization by the ASA, is for patients who aren’t suspected to live past 24 hours, even if they receive treatment.

1. **The correct answer is 3.** The coccygeal artery is located on the ventral aspect of the base of the tail in cats and dogs. Choice 1 is incorrect because the femoral artery is located along the femur. Choice 2 is incorrect because the digital artery is on the carpus’s palmar aspect. Finally, the lingual artery, choice 4, is located on the underside of the tongue and is only monitored in unconscious or anesthetized patients.
2. **The correct answer is 1.** Resorptive lesions are erosions of the tooth that primarily affect cats. Choices 2, 3, and 4 are incorrect because lizards, cattle, and horses are not affected by resorptive lesions.
3. **The correct answer is 4.** Chest compressions with high resonance are consistent with pneumothorax. Chest compressions with low resonance or even reduced breath sounds are consistent with lung consolidation, choice 3. Choices 1 and 2 are incorrect because these conditions are consistent with auscultation of rales and crepitus.
4. **The correct answer is 4.** The dog is experiencing a voracious, or increased, appetite. If the dog is losing, rather than gaining, weight after all the eating it is doing, it may have worms.As the owner didn’t tell the vet that the dog was eating unnatural items, choice 1, pica, is incorrect. She also didn’t say that the dog was eating its own feces, so choice 3, coprophagia, is incorrect as well. Finally, choice 2, polyuria, is incorrect because the dog hasn’t shown any signs of increased urine production.
5. **The correct answeris 1.** Cats are solitary animals. Whenremoved fromtheirenvironmentandplaced in a busy area such as a veterinary clinic, they feel stressed and are more than willing to attack anything unfamiliar to them. Choices 2, 3, and 4

are incorrect as these animals are less likely than cats to attack.

1. **The correct answer is 2.** An MRI (magnetic resonance imaging) uses a magnetic field, radio waves, and a computer to produce images of the inside of the body. Choices 1 and 3 are incorrect because X-rays and CAT scans do not use a magnetic field to produce images of the body. Choice 4 is incorrect because a biopsy is the surgical removal of tissue, cells, fluids, or masses from the body.
2. **The correct answeris 2.** To test the corneal reflex, touch the surface of the patient’s eye and wait for the patient to blink. This reflex is not present in the third stage of anesthesia. Choice 1 is incorrect because the palpebral reflex is tested by touching the corner of the eye. Choice 3 is incorrect because the pupillary reflex is tested with a light. Choice 4 is incorrect because a limb is pulled to test this reflex.
3. **The correct answer is 3.** Acyclovir is commonly used to treat Pacheco’s disease in birds. It can also be used to treat feline herpes infections. The other drugs in choices 1, 2, and 4 (fluconazole, metronidazole, and oseltamivir) would not be used for this purpose.
4. **The correct answer is 3.** A decrease in blood flow and oxygen delivery is always the underlying cause of shock. Although tachycardia, circulatory collapse, and dehydration are associated with shock, they don’t provoke the event; therefore, choices 1, 2, and 4 are incorrect.
5. **The correct answer is 4.** The dental formula—or the number of each type of tooth in the upper and lower arcade—for a grown cat is I6/6 C2/2 P6/4 M2/2. This means that the adult cat typically has 12 incisors, 4 canines, 10 premolars, and 4 molars. Choices 1 and 3 are incorrect because thelowercase letters indicate that they are the dental formulas for baby animals. Choice 2 is incorrect because it’s the dental formula for an adult pig.
6. **The correct answer is 4.** Ferrets have the ability to regurgitate. Rats, rabbits, and horses have a strongesophagealandstomachvalvethatprevents vomiting, so choices 1, 2, and 3 are incorrect.
7. **The correct answer is 2.** Once you’ve soaked the dirty glassware in disinfectant and then removed all debris, you should soak it in a fresh tub of detergent or an ultrasonic bath. After the bath, you would then rinse the glass in distilled water two to three times (choice 1). You’d drain the glassware (choice 3), and allow it to air dry or place it in a drying oven (choice 4).
8. **The correct answer is 3.** Feulgen stain is a type of staining method used to differentiate between chromosomal materials. Choice 1 is incorrect because Sudan 3 stain is used to differentiate between lipids. Choice 2 is incorrect because Van Gieson’s stain is used to differentiate between different types of connective tissue. Choice 4 is incorrect because Gram’s stain is used to differentiate between different types of bacteria.
9. **The correct answer is 3.** Cats become agitated if they don’t receive privacy; therefore, placing them in an area where they cannot be seen by other animals will aid them in recovery. If a cage cannot be repositioned, putting a blanket over the cage may help. Choice 1 is incorrect because technicians should be sure to keep noise levels to a minimum as sudden, loud noises aggravate and frighten patients. Choice 2 is incorrect because even though speaking softly is recommended, making direct eye contact with a dog may be considered threatening. Choice 4 is incorrect as many animals, such as dogs, don’t like to urinate or defecate in the area in which they are sleeping or spending time.
10. **The correct answer is 3.** The average gestation period for sheep is 147 days. Choices 1 and 2 are incorrect because the average gestation period is longer than 103 or 121 days. Choice 4 is incorrect because the average gestation period is shorter than 179 days.
11. **The correct answer is 4.** Optimum conditions for reading a radiograph include little to no glare around the periphery of the film. Choices 1, 2, and 3 are incorrect because optimum conditions also include a darkened room, bright lights, and dry films.
12. **The correct answer is 3.** The maximum weight of a surgical instrument pack being placed into an autoclave should be 5.5 kg. Loading heavier

instrument packs may prevent proper steam penetration. Choices 1 and 2 are below the maximum weight. Choice 4 exceeds the maximum weight.

1. **The correct answer is 3.** The enamel is the outermost layer of an animal’s tooth. It covers the crown of the tooth and is the hardest tissue in the entire body. Choice 1 is incorrect because the apex is the root of the tooth. Choices 2 and 4 are incorrect because the dentin is just beneath the enamel but surrounds the pulp, which is the innermost layer of the tooth.
2. **The correct answer is 3.** Universal sterile containers, which are generally used to collect urine and fecal samples, are made of either plastic or glass. They typically hold about 30 ml of fluid, not 300 ml, so choice 4 is incorrect. They are also small, wide-mouthed bottles, not large, narrow- mouthed bottles, so choices 1 and 2 are incorrect.
3. **The correct answeris 1.** Nephritis, or inflammation of the kidney, is a condition in which polydipsia, or increased thirst, is a symptom. A common side effect of cystic calculi, prostatic enlargement, and obstruction of the urinary tract is dysuria, or painful or difficult urination. Choices 2, 3, and 4 are incorrect because polydipsia is not a symptom of these conditions.
4. **The correct answer is 3.** Norepinephrine activates α-vascular receptors and causes vasoconstriction, which means that peripheral resistance increases and renal and femoral blood flows decrease. Choices 1, 2, and 4 are incorrect because these combinations of effects do not occur during vasoconstriction.
5. **The correct answer is 2.** Isoproterenol is a myocardial stimulant that increases the strength of myocardial contractile forces and accelerates heart rate. Choice 1 is incorrect because it is independent of, rather than dependent on, changes in venous returns. Choice 3 is incorrect because it is 10–20, not 30–40, times more active in the heart than epinephrine. Choice 4 is incorrect because isoproterenol causes an increase in the rate of pressure changes in the ventricular chambers rather than a decrease.
6. **The correct answer is 3.** An ideal operating room would have a temperature of 70°F and a humidity level of approximately 50%. Choices 1 and 4 are incorrect because the temperatures are too cool, and choice 2 is incorrect because the humidity level is too high.
7. **The correct answer is 4.** An ideal antiseptic should cause little skin irritation or interference. It also has a low toxicity level, not a high toxicity level as indicated in choice 1. Choice 2 is incorrect because it should have high penetrability, not low penetrability. Choice 3 is incorrect because it should perform a broad spectrum of activities, rather than a narrow one.
8. **The correct answer is 2.** Although many people incorrectly identify this process as cold sterilization, choice 1, the correct name is immersion disinfection. The disinfectant the dog’s owner chooses to use should be EPA-registered and will kill most of the infected organisms left on the items. Choices 3 and 4 are incorrect because these processes don’t involve soaking small objects in disinfectant.
9. **The correct answer is 4.** Choices 1, 2, and 3 are incorrect because before a veterinarian examines the animal’s respiratory rate, breath sounds, or depth of breathing, he or she will observe the animal’s attitude, walk, and nutritional status.
10. **The correct answer is 4.** When using the coarse focus, you should adjust the focus knobs slowly to find the right focus. The coarse focus is more sensitive, so going slowly ensures that you will more easily find the correct focus. Choices 1, 2, and 3 are incorrect because those are true statements about microscopes.
11. **The correct answer is 2.** Cyclic vomiting is defined as reoccurring instances of vomiting. This type of vomiting occurs in four stages: symptom-free interval phase, prodrome phase, vomiting phase, and recovery phase. Bilious vomiting is vomiting of bile, while stercoraceous vomiting is the vomiting of feces. Since the cat’s vomit shows no signs of bile or feces, choices 1 and 4 are incorrect. Choice 3 is incorrect as the technicians didn’t indicate the cat was forcefully vomiting without first retching.
12. **The correct answer is 1.** A positive contrast cystography, or a cystogram, would be the most appropriate test to perform when evaluating bladder position and bladder wall integrity. Choices 2 and 4 are incorrect because negative contrast cystography, also known as pneumocystography, is least preferred because of a high risk of air embolism. Choice 3 is incorrect because double contrast cystographies are most helpful when assessing calculi or mural masses.
13. **The correct answer is 2.** Many veterinarians recommend pharmacological intervention in addition to behavior modification therapies to decrease compulsivity in domestic animals. This combination may also be used to decrease arousal and excitability and increase or promote behavioral calming, which makes choices 1, 3, and 4 incorrect.
14. **The correct answer is 2.** The liver metabolizes anesthetic drugs and produces both plasma proteins and coagulation factors.Animals with liver disease may experience blood thinning and longer effects of anesthetics. Choices 1, 3, and 4 are incorrect because the lungs, heart, and kidneys have different responsibilities.
15. **The correct answer is 4.** The presence of blood in an animal’s urine is called hematuria. Choice 1 is incorrect as anuria occurs when an animal is unable to pass urine. Choice 2 is incorrect because dysuria is painful or difficult urination. Choice 3, oliguria, is the passing of a decreased amount of urine.
16. **The correct answer is 4.** Phenothiazines, or sedatives, increase the risk of extrapyramidal symptoms such as rigidity, tremor, or akinesia. Choices 1 and 3 are incorrect because the ability to achieve arousal and coordinated motor skills are not typically affected by phenothiazine. This agent decreases spontaneous motor activity in animals, however, which makes choice 2 incorrect.
17. **The correct answer is 2.** The pelvic limb swing stops animals from bearing weight on their hind legs and allows animals to move their joints. This immobilizer is used most often to help bone fractures and joint damage heal. Choice 1 is incorrect because the immobilizers described in this choice are hobbles. Choices 3 and 4 are not

correct because they describe a leg cast (choice 3) and a carpal flexion bandage (choice 4).

1. **The correct answer is 3.** Tubular bandages are frequently used to wrap tails and limbs. They are made of elasticized cotton or nylon and are applied using an applicator. Choice 4 is incorrect because crepe bandages are generally used on larger body areas such as the head and abdomen. Choice 1 is incorrect as these bandages are large, but don’t have the ability to conform to a specific area. Choice 2 is not correct because cohesive bandages are not generally used to bandage tails.
2. **The correct answer is 1.** Samantha is acting unethically as she is listing her membership in an organization of which she is no longer a member. Choice 2 is incorrect because technicians should work hard to continue their educations. Choice 3 is incorrect because it is ethical to share patient information when the public health is at risk. Choice 4 is incorrect because it is ethical for technicians to collaborate to ensure the best possible care for their patients.
3. **The correct answer is 1.** Catheterization is performed easily in male dogs and cats, but female cats rarely receive catheterization. If a catheter is required, female cats are sedated. Choices 2, 3, and 4 are incorrect because it’s more common for male dogs, female pigs, and male horses to receive catheterization than female cats.
4. **The correct answer is 3.** Polydioxanone is the suture material that takes the longest to absorb at 180 to 120 days. Choice 1 is incorrect because polyglactin 910 takes 56 to 70 days to absorb. Choice 2 is incorrect because polyglycolic acid takes 60 to 90 days to absorb. Choice 4 is incorrect because poliglecaprone 25 takes 90 to 120 days to absorb.
5. **The correct answeris 1.** The arm of the microscope connects the base with the stage. The rheostat (choice 2) for the light source adjusts the level of light. The illuminator (choice 3) is located on the base and is the microscope’s light source. The condenser (choice 4) is located above the light source, and it condenses the light into a small beam.
6. **The correct answer is 2.** Veterinary technicians prefer to take an animal’s temperature via its rectum. This process should take 1 to 2 minutes. If a technician cannot use this method, he or she should use the axilla (the area beneath the arm where the arm meets the shoulder) or the external ear canal. Choices 1, 3, and 4 are incorrect as these parts are acceptable, but not preferable, areas in which to take an animal’s temperature.
7. **The correct answer is 3.** Pyrexia, or increased body temperature, can be caused by infections, convulsions, and excitement, so choices 1, 2, and 4 are incorrect. Hypothermia is the word for decreased body temperature, so choice 3 is correct.
8. **The correct answer is 2.** Many behavioral drugs are made of water-soluble salts such as fluoxetine and buspirone because these salts allow for rapid dissolution in the gastrointestinal tract and good permeability in the intestine. Choices 1 and 4 are incorrect because these drugs allow for rapid, not slow, dissolution. Choice 3 is incorrect because they allow for good, not poor, permeability in the intestine.
9. **The correct answer is 3.** The horse has a complicated fracture, meaning the broken bone fragments have damaged the area surrounding the bone. Choices 1, 2, and 4 are incorrect because these fractures don’t result in additional damage to the surrounding areas. An incomplete fracture occurs when the bone breaks on one side, but doesn’t split into two pieces. Asimple fracture occurs when the bone breaks cleanly into two separate pieces. Had the horse broken his leg in two separate, distanced places, it would have sustained a multiple fracture.
10. **The correct answer is 2.** Ultrasounds have eliminated the need for many radiographic exams similar to venous portography, celiography, and esophagography. Ultrasounds allow veterinarians to inspect the same organs as these exams, but in a more efficient and safer ways. Although ultrasounds are quite popular, they cannot do the work of X-rays, computed tomographies (CTs), or MRIs; therefore, choices 1, 3, and 4 are incorrect.
11. **The correct answer is 1.** One common side effect of general anesthesia is low body temperature, so choice 1 is correct. Choices 2, 3, and 4 are incorrect because reduced body weight, infection,

and hemorrhaging are not common side effects of general anesthesia.

1. **The correct answer is 3.** Aminoglycosides are thermodynamically stable within a vast range of pH values and temperatures. They also have excellent solubility in water, poor lipid solubility, and molecular weights of 400–500 g/mol, making choices 1, 2, and 4 incorrect.
2. **The correct answer is 2.** If technicians don’t plan on using serum or plasma samples immediately, they should clearly label the samples and place them in a freezer at –4°F, or –20°C. Choice 1 is incorrect because the temperature is too cold, and choices 3 and 4 are incorrect because the temperatures are too warm to store serum or plasma samples.
3. **The correct answer is 2.** Crypotorchidism is a procedure that involves the extraction of a testicle. Some horses are born before their testicles drop. This condition is called testicular retention. The severity of the retention, or where the testicle is located, predicts the type of cryptorchidism a surgeon must perform. Choices 1, 3, and 4 are incorrect because cryptorchidism doesn’t involve the amputation of limbs, the removal of tumors, or the resetting of bones.
4. **The correct answer is 2.** Atechnician would cut a rabbit’s molars, or cheek teeth, with molar cutters and smooth the ridges with a diamond burr. Choices 1 and 4 are incorrect because molar luxators and extraction forceps are used to remove, not trim, teeth. Choice 3 is incorrect because even though a soft tissue protector is part of a diamond burr, the technician also needs molar cutters to perform the task.
5. **The correct answeris 1.** Sufficient skin scrapings occur only when petechial bleeding has been achieved. This involves scraping off the top layer of skin only. Choice 2 is incorrect because a skin scraping down the hypodermis layer is unnecessary and painful. Choice 3 is incorrect because if the sample is not immediately tested, it’s placed in a container, scalpel and all. The technician should squeeze the skin and push the bacteria and parasites toward the surface of the skin to obtain a sample. Choice 4 is incorrect because the bacteria need a push toward the surface.
6. **The correct answer is 4.** If visiting the patient is necessary, consulting veterinarians examine the patient in the presence of the attending veterinarian. Although the consulting veterinarian may perform the assessment or recommend treatment, the attending veterinarian is still in charge of the veterinarian-client-patient relationship, so choice

3 is incorrect. Choice 1 is incorrect because consulting veterinarians sometimes don’t charge for their services at all. This differs from attending veterinarians, who almost always charge fees. Consulting veterinarians typically offer their expert opinions on lab results, test results, and diagnostic images. They rarely visit with the patient; therefore, theydon’tperform manyphysical examsorpatient observations, making choice 2 incorrect.

1. **The correct answer is 3.** Technicians can provide copies of records to clients without a court order. If the records are requested, the technician must fill out a written release to document the request. Choices 1, 2, and 4 are incorrect because these statements are true. The information in medical records should comply with state and federal standards, the information is confidential, and the records are considered the property of the practice or clinic in which they were composed.
2. **The correct answer is 1.** A computerized, mathematical cross-sectioned image of a cat’s brain can be obtained with a CT, or computed tomography. CTs send X-ray transmissions through slices of thin patient tissue to create images. Choices 2, 3, and 4 are incorrect because each of these processes assess different areas and don’t result in computerized, cross-sectional images.
3. **The correct answer is 3.** Epinephrine can be given to patients with anesthetic to make the anesthetic work for more time by decreasing blood flow. As the blood flow slows, the anesthetic moves more slowly around the body, so it works longer. Choices 1 and 2 are incorrect because epinephrine does not increase blood flow. Choice 4 is incorrect because epinephrine makes the anesthetic work for more, not less, time.
4. **The correct answer is 2.** Approximately 15–30 ml/kg of an animal’s total body water is eliminated due to insensible losses, such as evaporation, every day. Small animals or immature animals are at a

greater risk of insensible losses than larger, adult animals. Choice 1 is incorrect because the amount is too low and choices 3 and 4 are incorrectbecause the amounts are too high.

1. **The correct answer is 1.** One of the many names for a procedure involving an incision into the abdomen is *celiotomy*. Choice 2 is incorrect because this procedure involves the brain. Choice 3 is incorrect because cystotomy is a type of bladder surgery. Choice 4 is incorrect because this procedure involves kidney removal.
2. **The correct answer is 1.** Although not common, some species of lizards do grow teeth on their palates. Typically, though, lizards have sharp, tricuspid teeth that grow on their maxilla, dentary, and premaxilla bones. Choices 2, 3, and 4 are incorrect because technicians would expect to find teeth growing in these locations.
3. **The correct answer is 2.** Formalin, which consists of 40% formaldehyde, is used inmany laboratories to preserve valuable tissue samples by hardening, or fixing, them. Although choices 1, 3, and 4 are antiseptics or disinfectants, they don’t have the abilities that formalin does. Glutaraldehyde is effective in fighting a wide range of bacterial activity, but it doesn’t preserve tissue. Bleach is cheap and effective in eliminating fungi, spores, and viruses, but it also doesn’t fix tissue samples. Triclosan isn’t toxic, nor is it harsh on skin, but it also isn’t used in preserving tissue samples.
4. **The correct answer is 2.** After surgery, it’s important to take care when bandaging a patient’s head. Anesthesia can effect the respiration of a patient, so special care should be taken around the head, throat, and abdomen so no breathing complications arise. Since joints (choice 1), legs (choice 3), and paws (choice 4) have nothing to do with respiration, these choices are incorrect.
5. **The correct answer is 3.** Scientists have proven that using buspirone in felines regulates the state of high arousal and decreases the occurrence of feline urine spraying by 55%. Buspirone doesn’t affect cats’ memory or psychomotor skills, nor does it induce a panic-like state, so choices 2 and 4 are incorrect. Effects of buspirone are evident after several weeks of administrating the drug, so choice 1 is also incorrect.
6. **The correct answer is 3.** Aseptic techniques are techniques used to keep an operating room sterile. When people talk, their breath releases bacteria into the air. Therefore, keeping talking to a minimum will help keep the room sterile. Choices 1, 2, and 4 are incorrect because aseptic techniques have nothing to do with keeping the patient happy (choice 1), maintaining surgeons’ concentration (choice 2), or keeping the attention of the surgical team (choice 4).
7. **The correct answer is 2.** If a pet experiences an extreme buildup of plaque or tartar, this could lead to swollen and sore gums, a loss of teeth, and even infections in the liver, heart, kidneys, and lungs. Choices 1, 3, and 4 are incorrect answers because these events can easily occur if an animal’s mouth continues to grow bacteria. Choice 2 is the correct answer because a buildup of tartar will not lead to duplicate canine teeth. The development of duplicate canine teeth is a common genetic defect in cats, but it is inherited and not caused by plaque and tartar.
8. **The correct answer is 1.** Cats should be housed in areas that are at least 50°F, or 10°C, at all times. Environments in which dogs spend their sleeping hours should also never drop below 50°F. Choices 2, 3, and 4 are incorrect because these temperatures are too high.
9. **The correct answer is 1.** Patients that are very young and patients undergoing cardiovascular surgery sometimes receive hypothermia as a form of anesthesia, so choice 1 is correct. Choices 2, 3, and 4 are incorrect because patients undergoing dental, ophthalmological, and joint surgeries do not usually receive hypothermia as a form of anesthesia.
10. **The correct answer is 2.** Fluoxetine is used to treat dominance-related aggression, inter-dog aggression, and acral lick dermatitis in dogs. It is also recommended for compulsive disorders and canine separation anxiety. In humans, fluoxetine is used to treat obsessive-compulsive disorders, eating disorders, and generalized anxiety. Choice 1, dapoxetine, is not used to treat these behaviors in dogs, and choices 3 and 4 are incorrect because these SSRIs (zimelidine and indalpine) have been discontinued for many years.
11. **The correct answer is 2.** When you are preparing for surgery, your first step should be to change into a scrub suit. After you put on the suit, you can put on a cap and mask (choice 1), scrub for surgery (choice 3), put a sterile gown, and put on sterile gloves (choice 4).
12. **The correct answer is 1.** To avoid self-exposure to harmful toxins when anesthetizing animals, veterinary technicians should empty the rebreathing bags using the scavenging systems by opening the pressure release valve completely, not by detaching the bag from the cylinder. Emptying the bags this way may expose the technician to toxins. Choices 2, 3, and 4 are incorrect because these methods ensure the safety of veterinarians and technicians. To keep the environment safe for all, vaporizers should be placed outside of the operating area, the circuits should be examined for leaks regularly, and scavenging systems should be used.
13. **The correct answer is 2.** During dental polishing, you should keeptheprophy cupmovingatalltimes in order to avoid heating the tooth. This is the only key reason to keep the prophy cup moving, as overheating the tooth cancause damage. Choices 1, 3, and 4 are incorrect because constantly moving the cup will not help reach more of the tooth, remove more plaque, or minimize the required pressure.
14. **The correct answer is 1.** Synovial fluid, which is located in joints, is collected through a process called athrocentesis. This can be performed on an anesthetized or a conscious animal. Choice 2 is incorrect because thoracocentesis is the extraction of thoracic fluid, and choice 3 is incorrect because abdominocentesis involves extracting fluid from the abdominal cavity. Finally, pericardiocentesis is the process used to remove fluid from around the heart, so choice 4 is also incorrect.
15. **The correct answer is 2.** One way a technician can make a dog feel comfortable before restraining or handling him is to crouch down in front of him so the technician is at eye level with the animal. Choice 1 is incorrect, as direct eye contact with a frightened dog may appear threatening. Choice 3 is also incorrect because sitting on the ground in front of the dog makes the technician vulnerable. Choice 4 is incorrect because a technician who is

restraining a dog should talk to the animal in calm, soothing tones, not high-pitched or excited tones.

1. **The correct answer is 1.** Anuria, or the inability to pass urine, is a result of shock. Anuria may also be caused by FUS, obstruction of the urinary tract, infection, or renal failure. Choices 2, 3, and 4 are incorrect because there’s no indication that shock may cause painful or difficult urination, increased urine production, or increased thirst in animals.
2. **The correct answer is 3.** Brachycephalic dogs are most likely to have airway blockages while they are under anesthesia because of the abnormal structure of their respiratory systems. Hypothermia (choice 1), cardiomyopathy (choice 2), and spinal instability (choice 4) are not related to the respiratory system, so they are not common complications of brachycephalic dogs.
3. **The correct answer is 4.** Splints are not a way to reduce dead space around wounds. Splints hold broken or injured body parts in place to help them heal, but they do not generally help reduce dead space around wounds. Compression bandages, drainage, and Robert Jones bandages, however, help eliminate dead space and help wounds heal. Therefore, choices 1, 2, and 3 are incorrect.
4. **The correct answer is 3.** Abdominocentesis is designed to detect an increase in the volume of peritoneal fluid in the abdomen. Synovial fluid is collected through a process called athrocentesis and is located within joints. Thoracocentesis is the extraction of thoracic fluid and cerebrospinal fluid is found in the spine, not the abdomen. Choices 1, 2, and 4 are incorrect.
5. **The correct answer is 4.** Stainless steel cages are very expensive to purchase. Depending on the size of the clinic, buying multiple cages could cost hundreds of dollars. Since these cages are easy to clean, are safe for many types of animals, and are indestructible, they might be worth the price. Alternative accommodations include brick kennels with tile floors and wooden kennels, but both may present various dangers to animals. Choices 1, 2, and 3 are incorrect because these facts are true.
6. **The correct answer is 3.** Ketoprofen is a nonsteroidal anti-inflammatory drug that is often used as an analgesia following surgery. Morphine,

fentanyl, and butorphanol are opioids—not NSAIDs—so choices 1, 2, and 4 are incorrect.

1. **The correct answer is 1.** After a technician performs a biopsy slated for histopathology, he or she will place the tissue sample in a solution composed of 10% formal saline. This solution is created by diluting formalin in a saline solution. Choices 2, 3, and 4 are incorrect because the percentage of formalin in the solutions is too high.
2. **The correct answer is 3.** The only time an animal should bedenied water is if heor she is consistently vomiting. Otherwise, quality drinking water should be available to all animals at all times. While many animals can survive the loss of at least half their body fat or proteins, they cannot survive without water. Any more than a 15% loss of body water can cause the death of an animal. Choices 1, 2, and 4 are incorrect because animals can survive on a loss of carbohydrates, proteins, and fats.
3. **The correct answer is 4.** Phenobarbital is a long-lasting barbiturate that is used in anesthesia. Pentobarbital (choice 1), thiopental (choice 2), and methohexital (choice 3) are all short-term barbiturates used as anesthesia, so those choices are incorrect.
4. **The correct answer is 3.** The use of alpha-2 adrenergic agonists on horses during the postoperative period slightly prolongs the recovery period. It also increases the quality of recovery and decreases the number of attempts the horse must make to stand after the operation, so choices 1 and 2 are incorrect. The horse is affected by this agonist; therefore, choice 4 is also incorrect.
5. **The correct answer is 1.** Orthopedic surgery could require you to immobilize a joint or a limb. Choices 2, 3, and 4 are incorrect because airway surgery, thoracic surgery (surgery on the chest), and ophthalmological surgery (surgery on the eye) do not affect the joints and limbs, and they do not require limb immobilization.
6. **The correct answer is 1.** Request forms don’t come attached with pictures of the animals from which the samples were taken. Other information identifying the animal will be included on the form, however. These details include the animal’s name, species, age, sex, and the animal’s clinical

history. Choices 2, 3, and 4 are incorrect because this information is typically included on every request form.

1. **The correct answer is 3.** Rabbits may respond to the emotions, moods, or attitudes of their caretakers. It’s important that any technician caring for rabbits remains calm. Rabbits respond to stress, and if a technician caring for a rabbit is stressed, the rabbit will become stressed. This trait makes choices 1 and 2 incorrect, as rabbits can easily become stressed in new environments, making it difficult to anesthetize them. Choice 4 is also incorrect as newspaper lining can cause sore hocks and stain rabbit coats.
2. **The correct answer is 4.** Ultrasounds send sound waves into the body of the animal and form images based on the echoes of sound energy that bounce off the tissues and organs. Although ultrasounds receive 99% of their information in the form of echoes, approximately 1% of the time they receive information from actual sound. This is not often enough tomake choice 3 correct, however. Choices 1 and 2 are incorrect because ultrasounds don’t detect shadows or lights.
3. **The correct answer is 3.** A patient that has a high fever and is severely malnourished would fit in category IV of the American Society of Anesthesiologists Classification of Physical Status. Category IV patients are patients that have life- threatening health problems and have a chance of surviving with medical attention. Choices 1, 2, and 4 are incorrect because they describe patients in category I (choice 1), category II (choice 2), and category V (choice 4) of the American Society of Anesthesiologists Classification of Physical Status.
4. **The correct answer is 2.** The technician in this scenario is most likely treating a horse. *Anoplocephala perfoliata* is a tapeworm most commonly found in horses, not pigs, cows, or poultry; therefore, choices 1, 3, and 4 are incorrect. The most effective way to treat this condition in horses is to administer pyrantel pamoate paste orally.
5. **The correct answer is 1.** You should count surgery tools such as swabs, needles, and sutures before and after surgery. Counting these instruments before surgery tells you the exact number of each

instrument. Countingtheinstruments after surgery helps you make sure noinstruments were left inside the patient during surgery. Choices 2 and 3 are not correct because you don’t need to count the instruments during surgery. Choice 4 is incorrect because you need to count the instruments before surgery, too.

1. **The correct answer is 3.** The most appropriate and comfortable bedding for an iguana is alfalfa pellets. This bedding is not only suitable because it is comfortable for sleeping, but it is also suitable because iguanas consume the pellets. Choices 1, 2, and 4 are incorrect because sand, gravel, and wood shavings can injure aniguana. These materials may lead to impaction or even gastric obstruction.
2. **The correct answer is 3.** The only animal that wouldn’t be at risk during an MRI is the pregnant ferret suffering from a broken leg. MRIs are magnetic; therefore, it’s highly recommended that any patients with some sort of metal within their body are not placed within an MRI. Choices 1, 2, and 4 are incorrect because bullets, paperclips, and staples are magnetic and may be pulled out of the animal’s body when the technician turns on the machine.
3. **The correct answer is 1.** Rat poisons contain chemicals that act as anticoagulants, which alter the performance of Vitamin K. Vitamin K is responsible for blood clotting. K2, or menaquinone, has the ability to block the blood-thinning effects of many anticoagulants. Choices 2, 3, and 4 are used for issues other than thickening blood. For example, Vitamin K3 may produce anticancer effects in humans and some animals.
4. **The correct answer is 1.** Testing a patient’s blood urea nitrogen (BUN) is usually used to check the patient’s renal function. If the patient has a high BUN level, it could indicate problems with the renal system. Choices 2, 3, and 4 are incorrect because urea (the protein that is tested) is not an indicator of respiratory, cardiac, or muscular functions.
5. **The correct answer is 3.** Technicians use an autoclave to sterilize drapes and gowns, not ethylene oxide. To sterilize drills, endoscopes, and plastic and rubber instruments, however, technicians expose these instruments to ethylene

oxide for approximately 12 hours and then ventilate the items for another 24 hours. Choices 1, 2, and 4 are incorrect because technicians commonly use a chemical gas such as ethylene oxide to sterilize these instruments.

1. **The correct answer is 1.** Since the ability to smell is closely linked to the ability to taste, cats will most likely eat less when their nasal passages are congested. The congestion affects their olfactory function and minimizes their ability to taste what they’re eating. Choices 2, 3, and 4 are incorrect because a congested nasal passage will affect a cat’s willingness to eat more than its willingness to sleep, play, or climb.
2. **The correct answer is 1.** Microvascular instruments are made of stainless steel or titanium to decrease the chances of magnetization. Surgeons don’t want their instruments magnetized, so they attempt to keep them away from other metal objects whenever possible. Choices 2, 3, and 4 are incorrect answers because they are all characteristics of microvascular instruments.
3. **The correct answer is 3.** The technician will most likely recommend root canal therapy to treat the dog’s fractured tooth. Typically, technicians and veterinarians avoid recommending tooth extraction as it takes weeks for the wound tohealproperlyand the dog is left without tooth function, so choice 4 is incorrect. Since the fracture exposed the tooth’s pulp cavity, applying fluoride sealant (choice 2) or ice (choice 1) would not be preferred treatments.
4. **The correct answer is 4.** Veterinarians use a combination of tricyclic antidepressants and benzodiazepines to treat such behavioral conditions as thunderstorm phobia and separation anxiety in dogs. Choices 1, 2, and 3 are incorrect because these combinations of drugs aren’t used to treat these issues in dogs.
5. **The correct answer is 4.** Forced-air heating units threaten aseptic techniques and should not be installed in operating rooms. The air from the heating unit can carry dust and microbes that can contaminate the operating room. Choices 1, 2, and 3 are incorrect because these elements help maintain aseptic techniques in operating rooms.
6. **The correct answer is 4.** A veterinary technician placing new items in front of old items on storage

shelves is an example of poor inventory-control techniques. When placing new items on the shelves, you should put them behind the older products so that older products are used first. Reading labels to find storage information (choice 1), checking and marking inventory sheets (choice 2), and making notes about supplies that are running low (choice

3) are all examples of proper inventory-control techniques. Therefore, choices 1, 2, and 3 are incorrect.

1. **The correct answer is 2.** When an animal has been penetrated by a foreign body and the object is protruding from the animal, the object should be cut close to the wound. It shouldn’t be removed before transporting the patient, however, so choice 4 is not correct. Choice 1 is incorrect because wounds should never be dressed using cotton or wool gauze, as the fabric may stick to the open wound. Choice 3 is incorrect because wounds should only be cleaned with antiseptic ointments that are soluble in water.