

Indiana FFA Veterinary Science CDE 2024

***TEAM ACTIVITY TOPIC- VESICULAR LESION INVESTIGATIONS IN SWINE, BOVINE, AND EQUINE**

***THEME OF CONTEST- TWO CASE-BASED SCENARIOS THAT BLEND GENERAL KNOWLEDGE,**

IDENTIFICATION, CLINICAL AND HANDLING/RESTRAINT PRACTICUMS, AND TEAM ACTIVITY.

THE TWO SCENARIOS WILL FOCUS ON:

- **VESICULAR LESION INVESTIGATIONS IN SWINE, BOVINE, AND EQUINE**
- **SMALL ANIMAL WELLNESS VISIT**

****FOCUS ON THE TWO TOPICS ABOVE AS YOU STUDY FOR ID, EXAMS, AND PRACTICUMS. THE CONTEST WILL BE RUNNING AS CLOSELY AS NATIONAL FFA RUNS THEIR CONTEST. THINGS BUILD AND CONNECT FROM ONE ACTIVITY TO THE NEXT.**

2023 Indiana FFA Veterinary Science

Written Exam (100pt)

1. Which compartment of the ruminant stomach is responsible for fermentation of feedstuffs?
 - a. Reticulum
 - b. Rumen
 - c. Omasum
 - d. Abomasum
2. What is the correct name for the region circled on this dog?

- a. Carpus
- b. Tarsus
- c. Stifle
- d. Thorax



3. Which mineral is of concern in cows with milk fever?
 - a. Manganese
 - b. Potassium
 - c. Calcium
 - d. Sodium
4. Which of the following vaccines are considered a core canine vaccine?
 - a. Distemper virus
 - b. Borrelia burgdorferi (Lyme disease)
 - c. Parainfluenza
 - d. Bordetella bronchiseptica

5. On the 9-point Body Condition Scale guide, a score of 8 is considered
 - a. Very thin
 - b. Ideal
 - c. Overweight
 - d. Obese

6. Veterinary Client Patient Relationship satisfies all of the following criteria except:
 - a. The veterinarian maintains medical records of the animals' treatments.
 - b. The veterinarian is able to board the animal whenever the owner is out of town.
 - c. The veterinarian is available for consultation
 - d. The veterinarian has assumed responsibility of the patients regarding health and veterinary treatment.

7. Rotation of an organ such as the stomach is defined as:
 - a. Volvulus
 - b. Diverticulum
 - c. Parenchyma
 - d. Intussusception

8. A _____ is used to look in a patient's eyes.
 - a. Ophthalmoscope
 - b. Otoscope
 - c. Stethoscope
 - d. Horoscope

9. Normal heart rate for a cat is
 - a. 22-44 beats/ min
 - b. 180-220 beats/ min
 - c. 80-120 beats/ min
 - d. 280-320 beats/ min

10. Bronchitis is inflammation of the

- a. Skin
- b. Muscle
- c. Intestines
- d. Bronchioles

11. If a patient is lying in right lateral recumbency, which side is laying on the table/ ground?

- a. Right
- b. Left
- c. Back
- d. Belly

12. Hypoglycemia means

- a. High glucose
- b. Normal glucose
- c. Low glucose
- d. Low sodium

13. Which of the following is considered a toy dog breed?

- a. Labrador retriever
- b. Boxer
- c. Yorkshire Terrier
- d. Australian Shepherd

14. All of the following species can be vaccinated for rabies except

- a. Horses
- b. Cattle
- c. Ferrets
- d. Rabbits

15. The portal vein is associated with which organ?
- The kidneys
 - The liver
 - The large intestines
 - The brain
16. An IM injection should be administered
- Intramuscularly
 - Intramammary
 - Intranasally
 - Intraabdominally
17. Bacteria present in four shapes. Which of the following are circular shaped?
- Staphylococci
 - Bacilli
 - Spirochetes
 - Pseudomonas
18. Length of gestation for a rabbit is approximately
- 30 days
 - 63 days
 - 285 days
 - 330 days
19. When intubating a patient for anesthesia, the endotracheal tube must be placed in which structure?
- Esophagus
 - Jugular vein
 - Nasal passages
 - Trachea

20. Below normal levels of carbon dioxide in an animal is known as
- Infarct
 - Hypoxia
 - Hypocapnia
 - Thrombus
21. The term meaning closer to the center of the body or the point of attachment is
- Distal
 - Proximal
 - Dorsal
 - Ventral
22. A tool called a snare is used to restrain which specie?
- Porcine
 - Bovine
 - Ovine
 - Caprine
23. An animal who is drinking excessive amounts of water is considered to be exhibiting
- Polyuria
 - Polydipsia
 - Polydactyl
 - Polyploidy
24. What color tube would you select if you needed serum to run a test?
- Purple
 - Yellow
 - Red
 - Blue

25. Blastomycosis is what type of pathogen?
- a. Fungus
 - b. Bacteria
 - c. Virus
 - d. Parasite
26. A common clinical sign of Strangles in horses is
- a. Swollen lymph nodes
 - b. Swollen tongue
 - c. Swollen airways
 - d. Swollen sinuses
27. How many roots does a canine tooth have?
- a. 1
 - b. 2
 - c. 3
 - d. 4
28. Cat owners should have how many litter boxes?
- a. One litter box for each cat
 - b. One litter box in the entire house
 - c. One litter box for each cat plus one extra
 - d. One litter box for each year the cat is old
29. Which breed goat is commonly bred for meat production?
- a. Boer
 - b. Nubian
 - c. Lamancha
 - d. Angora

30. In fish, where is the dorsal fin located?
- On the back
 - On the side
 - On the belly
 - On the tail
31. In cattle, a “bangs” vaccine protects them from what disease?
- Pink eye
 - Brucellosis
 - Bovine viral diarrhea virus
 - Bloat
32. Which of the follow poultry breeds is considered a hardy, dual-purpose breed and has brown eggs?
- Rhode Island Red Chicken
 - Cornish Chicken
 - Leghorn Chicken
 - Dutch Bantam Chicken
33. Which of the following is a list of fat soluble vitamins?
- Thiamin, riboflavin, cobalamin, folate
 - Vitamin B₁, vitamin C, Biotin, Choline
 - Vitamin A, Vitamin B₁₂, vitamin B₆, Vitamin B₂
 - Vitamin A, Vitamin D, Vitamin E, Vitamin K
34. Select the appropriate equation to calculate the resting energy requirement in companion animals
- $70 \times BW_{\text{kg}}^{0.75} \text{kcal/ day}$
 - $75 \times BW_{\text{kg}}^{0.70} \text{kcal/ day}$
 - $75 \times BW_{\text{lbs}}^{0.75} \text{kcal/day}$
 - 60kcal/kg/day

35. After a microhematocrit tube has been spun, what component lies in between the plasma and the packed red cell volume?
- Buffy coat
 - Serum
 - Protein layer
 - Lipid layer
36. In which species is it normal to find rouleaux on a routine blood smear?
- Llamas
 - Horses
 - Dogs
 - Rabbits
37. Which of the following parasite can be identified via it's oblong shape and bioperculated egg in a routine fecal flotation?
- Paragonimus kellicoti*
 - Dipylidium caninum*
 - Toxocara canis*
 - Trichuris vulpis*
38. Which of the following mites must be diagnosed with a deep skin scraping?
- Sarcoptes scabiei*
 - Demodex canis*
 - Cheyletiella*
 - Otodectes cynotis*
39. The following stain is used to help identify gram positive versus gram negative bacteria
- Gram stain
 - Acid Fast Stain
 - Wright's stain
 - Diff-Quik

40. Lateral saphenous venipuncture is performed
- on the back leg
 - on the front leg
 - on the neck
 - on the ear
41. Thoracocentesis may be performed to
- Remove fluid from the abdominal cavity
 - Remove fluid from the thoracic cavity
 - Remove air from the abdominal cavity
 - Remove fluid for the retroperitoneal cavity
42. Which of the following is an easy to access and common site to use to collect a blood sample on a bovine patient?
- Jugular vein
 - Coccygeal vein (tail vein)
 - Auricular vein
 - Subcutaneous abdominal vein (mammary vein)
43. The medial tarsal vein is a common location for venipuncture in which of the following species?
- Cattle
 - Pigs
 - Birds
 - Cats
44. Which of the following is a common nutritional deficiency in reptiles characterized by conjunctivitis, swelling around the eyelid, and stomatitis?
- Vitamin A
 - Vitamin D
 - Vitamin E
 - Vitamin C

45. Which of the following is a condition commonly seen in rabbits that affects the eyes and respiratory tract?
- Encephalitozoon cuniculi*
 - Eimeria sp. (coccidiosis)*
 - Pasteurella multocida (snuffles)*
 - Clostridium difficile*
46. Which of the following is a common clinical sign in guinea pigs with cystic ovaries?
- Alopecia (hair loss)
 - Anemia (low red cell count)
 - Footpad dermatitis (bumblefoot)
 - Weight gain
47. Cross-matching is a useful tool to determine
- A desirable breeding sire
 - A compatible donor for a blood transfusion
 - An effective antibiotic for the bacterial infection present
 - An appropriate anesthesia protocol
48. In which of the following types of shock are fluids contraindicated?
- Hypovolemic shock
 - Distributive Shock
 - Septic shock
 - Cardiac shock
49. Which of the following is a critical point for applying a bandage to a limb?
- Ensure the initial layer of material is as smooth as possible to prevent pressure sores
 - Always include the joint above and below the injury in the bandage
 - The middle two toes should be visible to assess swelling when applicable
 - All of the above

50. Which of the following species is more likely to have hyperthyroidism than hypothyroidism?

- a. Cats
- b. Dogs
- c. Horses
- d. Rodents

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Math Applications (100)

Please show your work in the space provided and clearly circle your final answer. You will not get credit if we cannot clearly tell what your final answer is. Please include units of measurement in all answers where applicable.

1. Phoebe is a 2 year old, spayed, mixed breed dog who presents to you for her annual wellness check. She weighs 22 pounds today. What is her weight in kilograms? (4pts)

2. Phoebe receives an injection annually containing the drug moxidectin to protect her from heartworm disease and intestinal parasites. The dose for the medication is 0.5 milligram per kilogram.
 - a. How many milligrams of medication does Phoebe need to receive? (4pts)

 - b. If the concentration of the medication is 10mg/ml, how many milliliters of medication should Phoebe receive? (5pts)

3. Phoebe receives a monthly tablet to protect her from fleas and ticks. The veterinary clinic participates in a rebate program if clients purchase one year of flea and tick prevention at one time. Phoebe's owner decides to purchase 12 doses. If each tablet costs \$10 and the rebate gives the owner 10% off her purchase, what will the total cost be for a year of flea and tick prevention for Phoebe? (8pts)

4. You read through Phoebe's record in preparation for her visit today. You see that she was at the clinic 6 months ago to be spayed. Your colleague's medical notes say that she received a surgery rate of intravenous fluids at 10ml/kg/hr during surgery.
- What was Phoebe's hourly intravenous fluid rate? (6pts)
 - Your clinic has 15 drop/ml drip sets. What would Phoebe's drip rate have been in drops/second? (8pts)
5. Phoebe went home from surgery with an anti-inflammatory medication called carprofen. Her prescribed dosage was 4.4 mg/ kg by mouth once a day.
- How many milligrams of medication was her dose? (4pts)
 - This medication is usually dose in either whole tablets, half tablets, or a combination thereof. The tablet sizes available in your clinic are 25 mg, 75 mg, and 100 mg. Which tablet size would you choose to send home with Phoebe to get the closest to her therapeutic dose and send home the least number of tablets? (4pts)
 - How many tablets would you send home if Phoebe needed to receive medication for 6 days after surgery? (4pts)

6. After Phoebe you have a small puppy present for lethargy. When you check her glucose, she is hypoglycemic. You decide to start her on a 2% dextrose solution IV. If you have 500ml of Lactated Ringers Solution and 50% dextrose, how many milliliters of dextrose would you add to the 500ml of fluids to get a 2% solution? (8pts)

7. A cattle producer comes in the clinic to purchase medication. Your clinic offers a 5% discount on large animal products when paid in full at time of pick up. If the client's total cost of medication was \$120, what is their total after the discount? (6pts)

8. A 30kg dog presents to you for with vomiting and diarrhea. You need to start this patient on intravenous fluids to sustain her hydration needs and replace her deficit.
 - a. What will her maintenance fluid rate be in milliliters per hour? Maintenance is 60ml/kg/day. (6pts)

 - b. If she is 5% dehydrated, what will her fluid rate be in milliliters per hour to overcome this deficit? (7pts)



- c. You start this patient on Cerenia for vomiting (label pictured above). Her dose is 1mg/kg administered IV q24 hrs. How many milliliters will she receive in a 24 hour period? (8pts)
9. Please complete the following conversions (3pts each)
- 1 gram = _____ milligrams
 - 1.5 L = _____ milliliters
 - 2% = _____ mg/ml
 - 20kg = _____ lbs
 - 0.1kg = _____ mg
 - 500mg/ml = _____ %

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Identification (100pts)

Please identify the organism, breed, or object shown in the pictures using the list of possible answers provided

1. _____

2. _____

3. _____

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