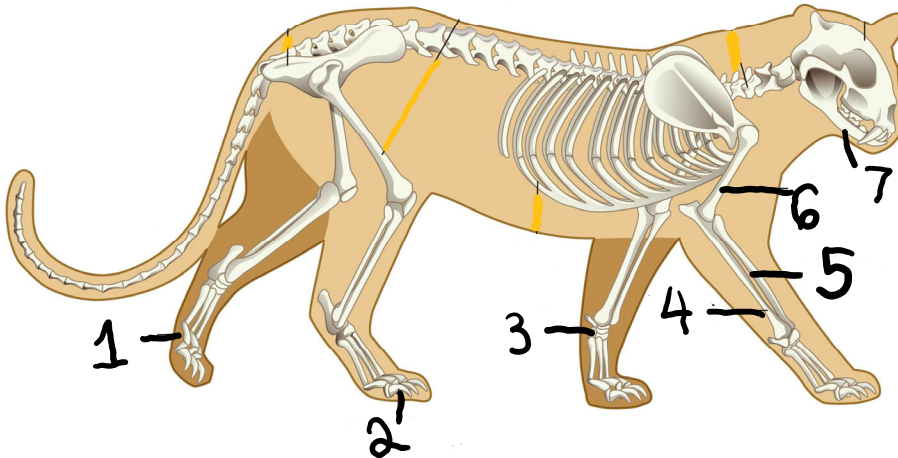


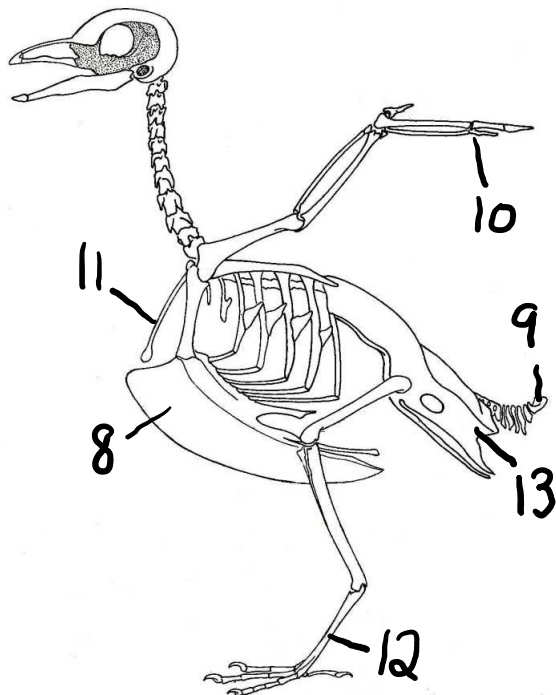
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Practicum 1: Anatomy



Mammal Skeletal



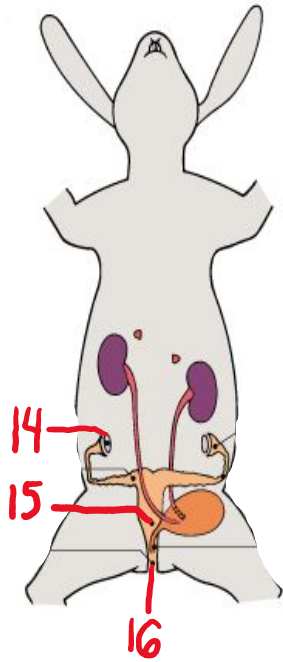
Avian Skeletal



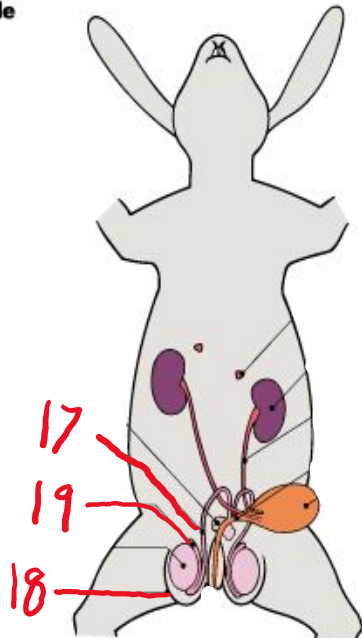
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**SCHOLARSHIP**  
**INVITATIONAL**

# Mammal Reproduction

Female

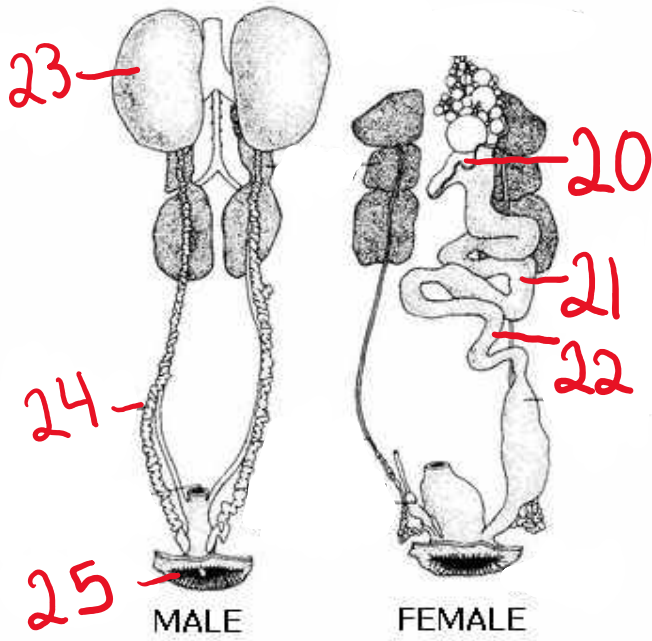


Male

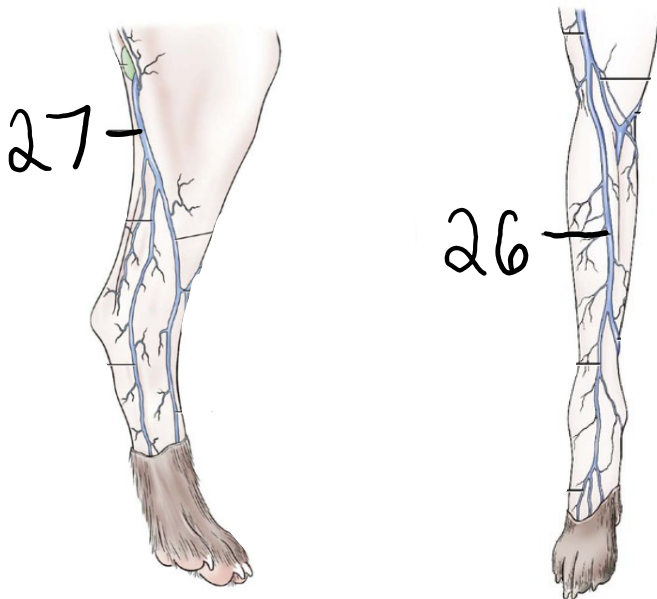


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Avian Reproduction

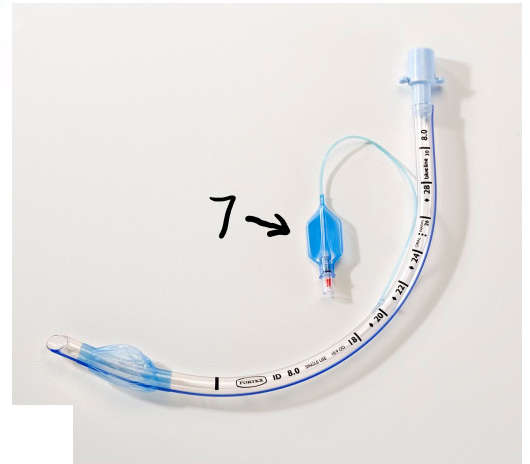
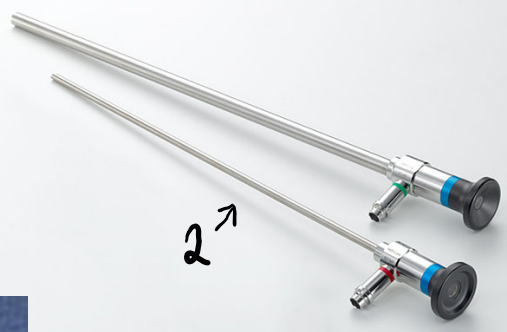
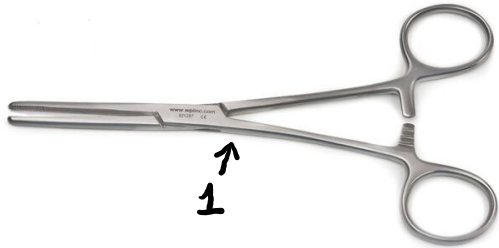


External Anatomy



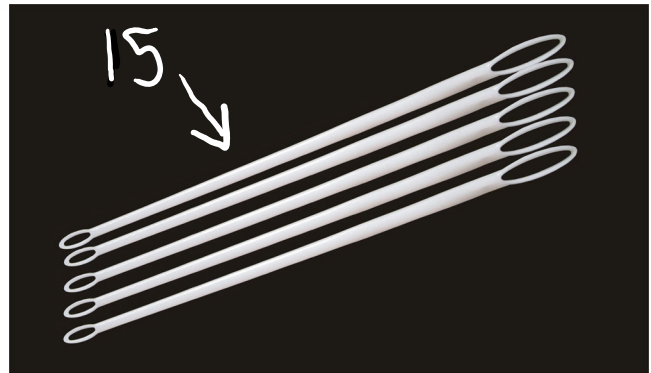
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Practicum 2: Tools and Equipment



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## 2024 SMSU AG Bowl Scholarship Invitational

### Practicum 3: Problem Solving

(15 multiple-choice questions)



1. The veterinarian prescribes IV fluids for a DSH kitten with diarrhea. She prescribes 180 mL per 12 hours using 60 drop/mL IV administration set. What is the drip rate in drops per minute?

- A. 18 drops
- B. 12 drops
- C. 6 drops
- D. 15 drops

2. A 66-pound Golden Retriever is prescribed metronidazole at 50 mg/kg PO SID for 5 days to treat for Giardiasis. How many mg will be needed per day?

- A. 250 mg
- B. 500 mg
- C. 1250 mg
- D. 1500 mg

3. A veterinarian offers a 5% discount to a client on all services for two or more pets. This discount does not apply to administered or dispensed medications or retail product purchases. Mrs. Alvarez brought in her four dogs for their annual physical examination and vaccinations. Before the discount, the total charges for services and dispensed medication are \$418. Mrs. Alvarez decided to take home 1 package of heartworm preventative today. The price of the dispensed package of 12 doses of a heartworm preventive drug is \$11 per dose. What is the total bill after the discount is applied?

- A. \$403.70
- B. \$407.12
- C. \$400.35
- D. \$400.75

4 The office manager at Sunrise Veterinary Clinic is ordering supplies for the clinic. He purchases a case of twelve slip-on leashes at \$6.00 each. How much total profit on all leashes will the clinic make with a 50 % mark-up?

- A. \$72.00
- B. \$108.00
- C. \$36.00
- D. \$3.00

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5. Mr. Shu brings his 15 kg tortoise into the clinic with an infection. The veterinarian instructs the technician to administer an injection of Baytril. Baytril's dosage is 10 mg/kg of body weight per day. How much Baytril should the technician administer, if the concentration of the drug is 50 mg/mL?

- A. 180 mg
- B. 3 mL
- C. 45 mg
- D. 13 mL

6. Dr. Keller suggests to Paxton to use Fish Mox 250mg to combat a bacterial infection on her Koi fish. Paxton owns a 250-gallon tank. How many capsules does Paxton need if each capsule is 250 mg and you need to dissolve one capsule per 10 gallons of water?

- A. 16
- B. 25
- C. 15
- D. 31

7. A Greyhound was on a 25 mg of prednisone per day dose last week, and then it was bumped to 75 mg per day. What percentage increase of dose is this?

- A. 100 %
- B. 200 %
- C. 300 %
- D. 75 %

8. Pedro, a 17-pound, 8-ounce Pug, is brought into the veterinary hospital. What is Pedro's weight in kilograms?

- A. 17.5 kg
- B. 7.9 kg
- C. 38.5 kg
- D. 3.95 kg

9. A 45-pound mix breed dog comes into your clinic and is prescribed Amoxicillin for an infection. The veterinarian instructs you to dispense the Amoxicillin based on a dosage of 9 mg per kg. How much Amoxicillin should the dog receive per dose?

- A. 0.184 mg
- B. 1.84 mg
- C. 18.4 mg
- D. 184 mg

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10. The veterinarian prescribes IV fluids for a German Shepherd. He prescribes 300 mL of IV fluid in 1 hour using 15 drops/mL IV administration set. What is the drip rate in drips per unit of time?

- A. 5 drips per minute
- B. 20 drips per minute
- C. 50 drips per minute
- D. 75 drips per minute

11. Gross pay for a veterinary assistant is \$515.75 for the pay period. If 6.2% is withheld for Social Security tax and 1.45% for Medicare tax, how much in total is withheld for these two taxes? (round to the nearest cent)

- A. 34.96
- B. 38.66
- C. 41.96
- D. 39.46

12. A veterinary technician is calculating the bill for hospital care for a kidney transplant in a cat. The bill for medical services and care was \$2,685. The owners paid \$1,389 when they picked up the cat. A few weeks later they paid another \$497. How much do they still owe?

- A. \$772.00
- B. \$790.00
- C. \$799.00
- D. \$817.00

13. A Belgian Malinois weighing 40 kg needs to be treated with a drug at a dose rate of 2 mg/lb/day. The solution available is 2%. Calculate the volume in ml of the daily injection to give the correct dose.

- A. 8.8 mL
- B. 10.6 mL
- C. 8.6 mL
- D. 10.2 mL

14. Riley, a pet rat, comes in for a routine checkup. Riley weighs 375g. You must convert her weight to pounds to enter into your clinic's electronic record keeping system. How much does Riley weigh in pounds?

- A. 0.83 lbs
- B. 0.37 lbs.
- C. 0.73 lbs
- D. 0.56 lbs.

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**SCHOLARSHIP**  
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15. A prescription reads “Give 2T q8h for 3 days. How many tablets will you dispense?

- A. 6
- B. 18
- C. 24
- D. 32

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Companion Animal Exam



1. What is the common name for the third phalanx of a horse?
  - a. Cannon bone
  - b. Pastern
  - c. Coffin bone
  - d. Frog
  
2. Ethylene glycol can cause severe damage to which organ?
  - a. Liver
  - b. Kidney
  - c. Pancreas
  - d. Ovary
  
3. What establishes the basic rhythm of the mammalian heart, also known as the pacemaker?
  - a. Papillary muscles
  - b. Bundle of his
  - c. Atrioventricular node
  - d. Sinoatrial node
  
4. Which nutrient can be added to increase palatability to a food?
  - a. Carbohydrate
  - b. Protein
  - c. Fat
  - d. Water
  
5. Which term means “urinating more frequently”?
  - a. Pyuria
  - b. Proteinuria
  - c. Polyuria
  - d. Pollakiuria

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**SCHOLARSHIP**  
**INVITATIONAL**

6. Cats need increased quantities of certain amino acids compared to dogs. Which of the following is not needed at an increased quantity?
- Taurine
  - Arginine
  - Methionine
  - Lysine
7. Which vitamin is not considered an antioxidant?
- Vitamin K
  - Vitamin E
  - Vitamin C
  - Vitamin A
8. What hormone stimulates "milk let-down"?
- Estrogen
  - Lactose
  - Oxytocin
  - Progesterone
9. What does pyometra mean?
- Infection with pus in the uterus
  - Abnormally formed uterus
  - Increased temperature of the uterus
  - Fluid in the uterus
10. If a heterozygous polled cow (Pp) is bred with a heterozygous polled bull (Pp), what fraction represents the offspring that will have horns?
- $\frac{1}{4}$
  - $\frac{1}{2}$
  - $\frac{3}{4}$
  - 0/4
11. Which anatomical site does not contain a cartilage joint?
- Growth plate of a long bone
  - Suture in the skull
  - Between the halves of the lower jaw
  - Between two vertebrae

12. Polioencephalomalacia occurs because of what deficiency?
- Cobalamin
  - Thiamine
  - Selenium
  - Calcium
13. Which is not a vector borne disease?
- Blackleg
  - Heartworm disease
  - Lyme disease
  - Pinkeye
14. What would you use to measure intraocular pressure?
- Goniometry
  - Slit lamp examination
  - Tonometry
  - Cycloplegics
15. What is the only class of immunoglobulins that can cross the placenta?
- IgA
  - IgE
  - IgG
  - IgM
16. What organ stimulates the pituitary gland to act?
- Hypothalamus
  - Neurohypophysis
  - Hypophysis
  - Hyperthalamus
17. Which toxin does not cause anemia in pets?
- Chocolate
  - Onions
  - Zinc
  - Lead

18. An infestation of which parasite may lead to “wry neck” in rabbits?
- Fur mites
  - Ear mites
  - Ringworm
  - Pinworm
19. Which term is not based on science?
- Animal husbandry
  - Animal welfare
  - Animal nutrition
  - Animal rights
20. Which task does not help prevent ammonia from reaching harmful levels in an aquarium?
- Changing filters regularly
  - Avoiding overpopulation
  - Avoiding changing the water
  - Feeding only what the fish will eat daily
21. Which is not a physiological response to pain?
- Elevated blood sugar
  - Dilated pupils
  - Shallow breathing
  - Muscle rigidity
22. Which bacterium is the causative agent for foot rot?
- Actinobacillus lignieresii
  - Mannheimia haemolytica
  - Mycobacterium paratuberculosis
  - Fusobacterium necrophorum
23. Which disease is zoonotic and transmitted via direct contact of contaminated water and soil?
- Leptospirosis
  - Q fever
  - Canine parvo
  - Plague



24. Which is a disadvantage of using a killed vaccine compared to a modified live vaccine?
- Has to be reconstituted
  - Shorter duration of protection
  - Easily inactivated with sunlight
  - Not safe in pregnant animals
25. Even if not sterilized right away surgical instruments should be washed within what time to avoid corrosion and staining?
- 10
  - 20
  - 30
  - 40
26. What is the primary gas resulting from fish and food waste in an aquarium?
- Ammonia
  - Oxygen
  - Carbon dioxide
  - Hydrogen
27. What is the most common place to find a tick on a dog?
- Lower abdomen
  - Head
  - Lower back
  - Shoulder
28. What cage shape should finches be kept in?
- Circular
  - Square
  - Rectangle
  - The shape does not matter
29. The average cat weights \_\_\_\_\_ pounds
- 4-6
  - 5-10
  - 6-12
  - 7-14

30. What is the average temperature of a dog?
- 98.6F
  - 96.6F
  - 101F
  - 99.8F
31. Most fish have at least one vertical \_\_\_\_\_ fin along their back.
- Dorsal
  - Caudal
  - Adipose
  - Anal
32. Vocal sounds of a cat are produced by \_\_\_\_\_
- Air expanding the larynx
  - Contracting the diaphragm
  - Vibrating the uvula
  - Changes in tension of muscles
33. Fish have taste buds located on or on top up to how many body parts?
- 4
  - 5
  - 6
  - 7
34. Swelling of the thyroid gland is a sign of?
- Goiter
  - Pasteurellosis
  - Infectious canine hepatitis
  - Ulcer
35. If there is a bacterial infection under the skin, what is likely to develop?
- Abscess
  - Dystocia
  - Stroke
  - Colic

36. *Aeromonas* and *Pseudomonas* are bacteria that cause infection in a reptile?
- Digestive system
  - Skin
  - Nervous system
  - Circulatory system
37. What disease is the most common cause of death in rabbits?
- Snuffles
  - Mastitis
  - Enteritis
  - Weepy eye
38. Birds suffer from the following mites except \_\_\_\_.
- Nest mites
  - Feather mites
  - Red mites
  - Scaly face and leg mites
39. What is the basic unit of heredity?
- Sperm
  - Genes
  - Ova
  - Mutation
40. What type of animal has Amniotic eggs?
- Mammal
  - Bird
  - Fish
  - Amphibians
41. What is the average gestation period of a dog?
- 58-68 days
  - 30-32 days
  - 50-55 days
  - 71-80 days

42. With fish, what is the release of eggs by females and fertilization with sperm released by the male called?
- Gestation
  - Ovulation
  - Spawning
  - Fertilization
43. \_\_\_\_\_ is the nutrient needed to grow tissue and repair old tissue.
- Calcium
  - Protein
  - Sulfur
  - Vitamin D
44. Which of the following vitamins is important for successful reproduction?
- A
  - B
  - D
  - E
45. Due to the ability of a cat to synthesize these vitamins, they are not required in a cat's diet.
- B and C
  - A and D
  - C and K
  - A and K
46. This breed of cat is unable to store body fat and needs to eat frequently to maintain its body temperature.
- Sphynx
  - Oriental shorthair
  - Colorpoint shorthair
  - None of the above
47. The following supplement provides the most usable calcium in a dog's diet.
- Yeast
  - Milk
  - Bone meal
  - Cod liver oil

48. All of the following are macrominerals except
- a. Calcium
  - b. Phosphorus
  - c. Sulfur
  - d. Zinc
49. What organ stimulates the pituitary gland to act?
- a. Hypothalamus
  - b. Neurohypophysis
  - c. Hypophysis
  - d. Hypothalamus
50. Which should be avoided when choosing treats for rabbits?
- a. Lettuce
  - b. Carrots
  - c. Apple
  - d. Grass hay