

**MINNESOTA STATE UNIVERSITY MOORHEAD IACUC  
RESPONSIBLE RESEARCH ANIMAL CARE AND USE EXAMINATION**

Name: \_\_\_\_\_ Department: \_\_\_\_\_

Address  
(home): \_\_\_\_\_

Social Security #: \_\_\_\_\_ Campus Phone: \_\_\_\_\_

Principal Investigator/Supervisor: \_\_\_\_\_

QUESTIONS: Circle the correct answer. There should be only one correct answer for each item. You can use the training material to assist you in making the correct selection. This exam is designed to “document” your training rather than as a test of your knowledge.

1. The Institutional Animal Care and Use Committee at each institution has the responsibility for:
  - a. choosing the project a faculty member works on.
  - b. providing an Assurance Statement to the USDA.
  - c. insuring the use of alternatives to animals in research on campus.
  - d. insuring that all research animals are provided for and used in accordance with the Animal Welfare act and other pertinent regulations.
  
2. Each institution must provide an ASSURANCE statement to \_\_\_\_\_ in order to be awarded federal funds to conduct research with animals.
  - a. State Department of Agriculture
  - b. USDA
  - c. NIH (OPRR)
  - d. FDA
  
3. The University and NIH policy and “guide” require that warm-blooded animals be observed:
  - a. every 6 hours.
  - b. every 36 hours.
  - c. every 24 hours.
  - d. every 48 hours.

4. According to the NIH Principles for Animal Use, experiments involving live vertebrate animals and the procurement of tissues from live animals for research must be performed by or under the supervision of a:
  - a. USDA official.
  - b. NIH qualified technician.
  - c. qualified biological, behavioral, or medical scientist.
  - d. Veterinarian.
  
5. According to the NIH Principles for Animal Use, research projects using animals should be such as to yield:
  - a. significant data.
  - b. fruitful results for the good of society and not random or unnecessary in nature.
  - c. results important from an intellectual curiosity viewpoint only.
  - d. results that will contribute to the use of alternatives in research.
  
6. According to the NIH Principles for Animal Use, \_\_\_\_\_ should be used when appropriate to complement animal experiments and to reduce the numbers of animals used.
  - a. human subjects.
  - b. in vitro biological systems.
  - c. in vivo biological systems.
  - d. speculation
  
7. In the event that an experiment protocol would require the death of an animal as an end point, and that this would result in distinct signs of pain and distress in that animal, what should the investigator do?
  - a. Don't do the experiment.
  - b. Finish the experiment quickly and then euthanize the animal.
  - c. Nothing, as the only end point is death.
  - d. Seek an alternative end point.
  
8. An organization that accredits laboratory animal facilities is:
  - a. ACLAM.
  - b. AAALAC.
  - c. AHA.
  - d. ASLAP.
  
9. Ventilation in animal rooms should provide for how many changes of air per hour?
  - a. 6-7
  - b. 16-18
  - c. 10-15
  - d. 20-22

10. All food used for research animals must be:
  - a. bought in heavy paper bags.
  - b. specifically mixed for your facility.
  - c. kept in closed containers after opening.
  - d. supplemented with extra vitamin C.
  
11. Different species of research animals (with the exception of rats and mice) should not be:
  - a. used in the same experiment.
  - b. housed in the same room.
  - c. fed at the same time.
  - d. used by any one investigator.
  
12. Multiple surgical procedures in a single animal:
  - a. are encouraged always.
  - b. are never permitted.
  - c. can be done if you want to.
  - d. can be done if there are sufficient grounds and they are permitted by institutional animal care policies.
  
13. After bringing a new animal into your research facility, you should:
  - a. put it immediately in with the others of its species for company.
  - b. hold food and water for 24 hours.
  - c. have it bathed.
  - d. consider a period of quarantine and conditioning.
  
14. The responsibility for enforcing the Animal Welfare Act lies with:
  - a. NIH.
  - b. USDA.
  - c. State Department of Agriculture.
  - d. FDA.
  
15. If left untreated, Snuffles, an upper respiratory infection in rabbits that produces symptoms of sneezing, coughing and mucus discharge from the nose and eyes, will do which of the following?
  - a. Make the rabbit resistant to future respiratory infections.
  - b. Go away eventually.
  - c. Make the rabbit infertile.
  - d. Result in death.
  
16. The proper procedure for reporting alleged violations of the Animal Welfare Act, NIH Principles or guidelines is:
  - a. contact NIH and file a complaint.
  - b. call the local newspaper.
  - c. submit a written complaint to IACUC immediately.
  - d. report first to your supervisor, then to the primary investigator, departmental chairman, and finally IACUC should you not get a response before.

17. All persons working with animals should have a current \_\_\_\_\_ immunization.
- typhoid.
  - diphtheria.
  - tetanus.
  - yellow fever.
18. If a rat is observed leaning its head to one side and showing marked twisting of its body when suspended by its tail, it should be euthanized and the colony housing should be steam cleaned or chemically disinfected because the rat is suffering from a contagious bacterial infection called:
- toxoplasmosis.
  - upper respiratory distress.
  - labyrinthitis.
  - rabies.
19. How often are the animal care facilities required to be inspected by the IACUC?
- once a year
  - once a quarter
  - once every six months
  - daily
20. Who is directly responsible for ensuring that personnel working with laboratory animals are properly trained?
- Institutional Animal Care and Use Committee
  - Department Chairperson
  - Dean of Social and Natural Sciences
  - Principal Investigator or Course Director/Instructor
21. How often should the bedding in rabbit cages be changed?
- daily
  - at least 2 to 3 times per week
  - once per week
  - 2 to 3 times per month
22. Rats are healthiest and most content when kept under
- 24 hour lighting
  - 24 hour darkness
  - 12 hours of light, 12 hours of dark
  - None of the above
23. When comparing adult male and female rats of the same strain they are
- About equal in weight
  - Males are heavier than females
  - Females are heavier than males
  - Females are twice as heavy as males

24. The safest and most humane way to pick up a rabbit is:
  - a. by the ears
  - b. with both hands just behind the front legs
  - c. with both hands around the middle of the body
  - d. by taking hold of loose skin over the shoulders and supporting the back legs in your other hand
  
25. The gestation period for both mice and rats is approximately:
  - a. Three weeks
  - b. Three months
  - c. Three days
  - d. Three years
  
26. Young mice and rats can be sexed by noting the relative distance between the anus and the genitals.
  - a. Females have a shorter distance between the anus and genitals
  - b. Males have a shorter distance between the anus and genitals
  - c. Females have a longer distance between the anus and genitals
  - d. Females have their anus and genitals overlapping each other
  
27. IACUC (Institutional Animal Care and Use Committee) membership, by federal regulation must include:
  - a. a veterinarian
  - b. an animal researcher
  - c. someone not affiliated with the institution
  - d. someone who does not do animal research
  - e. all of the above are correct.
  
28. If mice housed together are seen chewing their fur this is an indication
  - a. that they are overcrowded
  - b. that they are suffering from mites, fleas and/or lice
  - c. that they are deficient in calcium
  - d. that they are deficient in oils and other nutrients found in their fur.
  
29. According to NIH Guidelines (1984) rats should be housed in spacious, well ventilated and dry cages constructed from:
  - a. plastic.
  - b. stainless steel.
  - c. wood.
  - d. a or b is correct.
  
30. Acceptable labeling techniques to identify individual rats include:
  - a. a metal tag in the ear.
  - b. ear notching.
  - c. the use of dyes.
  - d. all of the above.

31. The abdomen of a pregnant female rat is distinctly swollen at 13 days of gestation. This is most easily observed by:
- suspending the rat vertically by the tail.
  - placing the rat on its back.
  - placing the rat on its side.
  - placing the rat on its feet and pulling on its tail while holding it firmly by the shoulders.
32. Which of the following is not true
- An adult rabbit (8lbs.-12lbs.) requires at least one square yard (1 sq meter) of floor space.
  - Rabbits can tolerate cold much better than they can heat thus their cages should be protected from the sun.
  - All rabbits eat some of their droppings. This serves an important function in their nutrition.
  - Rabbits are born with their eyes opened.
33. If rabbits are allowed to overeat on greens that they are not accustomed to they can have:
- Ear mites.
  - Diarrhea.
  - Pregnancy toxemia.
  - Respiratory infections.
34. Buck tooth or malocclusion occurs in rabbits if they are:
- not fed green leafy vegetables.
  - not given salt blocks to lick.
  - not given anything to chew on.
  - all of the above.
35. Female mice are old enough to breed at:
- two months.
  - two weeks.
  - two years.
  - six months.
36. An average mouse weighs less than an ounce (30 grams) and can live up to:
- one year.
  - nine months.
  - ten years.
  - three years.

37. Fighting male mice and overcrowded female mice will bite each other and such wounds can be treated with a small amount of antibiotic ointment. However, if they are injected with the antibiotic streptomycin,
- It will heal their wounds faster.
  - It will prevent them from inflicting bite wounds on each other.
  - It will kill them.
  - It will make them sexually aggressive.
38. Mice can develop diarrhea from:
- improper diet.
  - spoiled food.
  - internal parasites.
  - all of the above.
39. If a mouse is seen sitting in a corner with ungroomed fur, nasal discharge and making chattering noises, he/she most likely has:
- respiratory infection.
  - pneumonia.
  - both a and b.
  - neither of the above. He/she could simply be depressed.
40. If a rat in a colony develops bad upper respiratory disease, the best treatment to prevent the other animals in the colony from developing the disease is to:
- place antibiotics in the water of all of the rats.
  - inject all of the rats with streptomycin.
  - turn up the temperature in the colony and they will sweat out the infection.
  - euthanize the infected rat and steam or chemically disinfect the colony cages.
41. What is the recommended practice to ensure high water quality in lab aquaria?
- 50% water exchange daily
  - 10% water exchange daily
  - 50% water exchange weekly
  - 10% water exchange weekly
  - Top up evaporation weekly
42. Algae growing on the glass is a sign of poor water quality
- True
  - False
43. To minimize the possibility of electric shock, all electrical appliances in an aquarium room (pumps, filters, heaters, lights, etc) should be connected to
- A very long extension cord
  - A battery
  - A back-up generator in case of a power outage
  - A ground-fault interrupter circuit
  - A grounded outlet

44. Daily visual checks of all fish and amphibia are conducted to:
- Check on proper functioning of filtration
  - Check on deportment and general health of animals
  - Rescue victims of aggression
  - Check on water quality
  - All of the above
45. When diseased aquatic animals are discovered, the best response is to:
- Isolate and treat the infected animal in quarantine
  - Euthanize and dispose of the diseased animal
  - Increase the frequency and percent volume of water exchanges
  - Any of the above, depending on the nature of the ailment
46. What is the best source of water for housing aquatic animals?
- Unaltered tap water from the municipal supply
  - Dechlorinated tap water from the municipal supply
  - Deionized water
  - Distilled water
47. What role do the bacteria *Nitrosomonas* and *Nitrobacter* play?
- They are important disease organisms
  - They oxidize ammonia to nitrite and nitrate
  - They respond to photoperiod
  - Build up to toxic levels when fish are held in crowded conditions
48. What use is a gravel vacuum?
- For removing imbedded feces and uneaten food from gravel
  - For removing gravel from a clogged drain
  - For removing gravel from a tank without removing the water
  - A vacuum that uses gravel as a filter medium
49. Photoperiod:
- Lights should be on all the time
  - Lights should be on only when fish are being observed to reduce stress
  - Lights should be on a timer for a 12:12 or ranging from 6:18 to 18:6, L:D.
  - Lighting is not important because fish do not need sleep
50. Holding animals at high density causes:
- Increased stress
  - Decreased water quality
  - Increased rate of transmission of disease pathogens
  - Increased aggression
  - All of the above