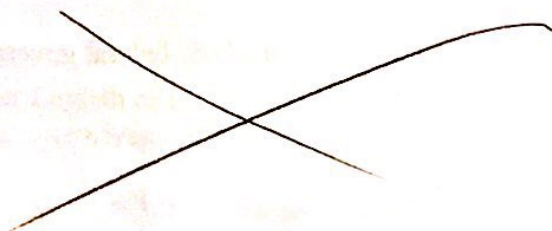


**Part 1 – Short Answer.** Answer 13 of the following 17 questions. Make sure to answer all parts of each question that you choose. Cross out the 4 questions that you do not wish to answer. **If you answer more than 13 questions, we will only grade the first 13, regardless of which answers are right or wrong.** Keep your answers as brief as possible. (4 pts. each)

1. Describe Aldo Leopold's land ethic in your own words in one or two sentences. How did Leopold demonstrate his land ethic on the property surrounding the Leopold Shack?



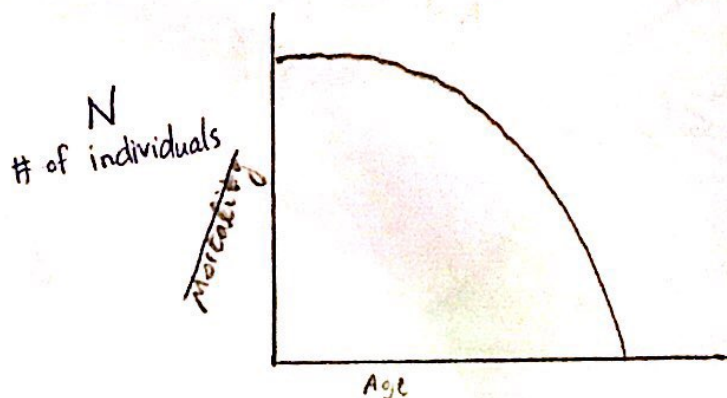
2. Briefly describe 2 types of situations in which exponential population growth may occur in nature. 4

Exponential population growth can occur when an invasive species is introduced to a new area, and also following a die-off where there is a lot of resources and not many competitors.

3. Explain the difference between utilitarian and dominionistic attitudes towards animals. 4

Utilitarian attitude is interested in animals as a resource like fur, food, and fiber. Dominionistic attitude is interested in animals as a way to show skill and prowess, like a matador.

4. On the graph below draw a type I survivorship curve. Label both axes. 3



-1

5. List and briefly describe 2 examples of citizen science programs that involve counting, observing, or monitoring wildlife.

6. List 2 groups of species or types of situations for which the U.S. federal government (as opposed to state governments) has management authority over wildlife. 4

The federal govt. has authority over the management of endangered species and they also have the authority over the marketplace for wildlife like with the Lacey Act.

7. What types of animals experienced high rates of extinction during the Pleistocene, and how does the timing of their extinction provide evidence that early humans were responsible? 4

"Megafauna" experienced high rates of extinction and it happened around the time humans crossed the land bridge to America.

8. Describe or draw and label the complete pathway that a breath of air follows through a bird's anatomy from inhalation to exhalation including the lungs and the anterior and posterior air sacs. 2



And the path that air follows?

-2



9. Compare the dentition pattern of a typical mammalian herbivore to that of a mammalian carnivore. Which types of teeth are more developed in herbivores versus carnivores, and which types of teeth are less developed or may be lacking all together?

Herbivores will have well developed premolars and molars, while not having very well developed incisors or canines.   
 Carnivores will have well developed canines and premolars while not having well developed ~~incisors~~ or molars.   
 (well developed in some herbivores (rodents))

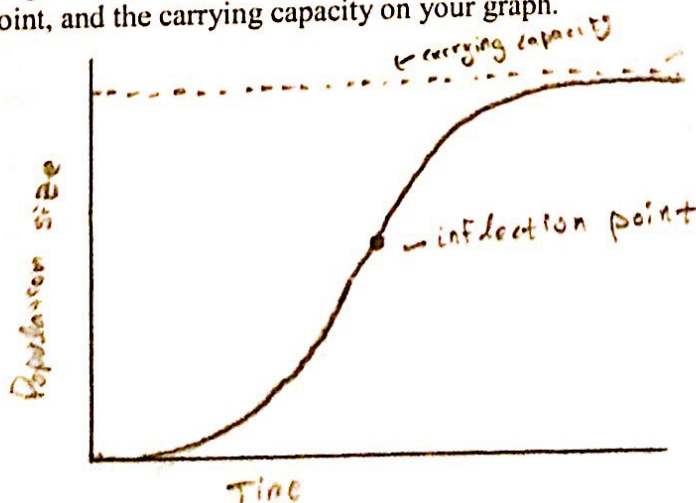
10. List 2 orders (either English or Latin names) of birds that occur in Wisconsin. Name one bird species in each order that is native to Wisconsin.

| Order                   | Species          |
|-------------------------|------------------|
| ✓ Owls                  | Great Horned Owl |
| ✓ Diurnal Birds of Prey | Red-Tailed Hawk  |

11. According to the North American Model of wildlife conservation, wildlife should only be killed for legitimate purposes. List 2 legitimate purposes for which wildlife may be killed.

✓ - Food  
 - Self Defense/Protection

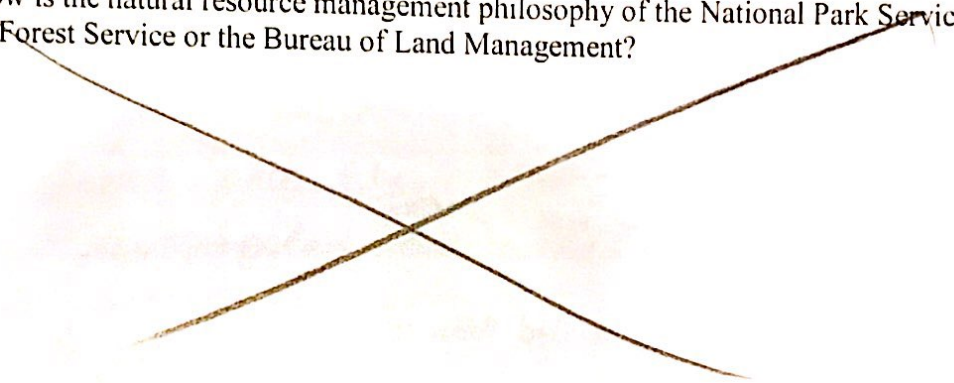
12. Draw a logistic population growth curve on the graph below. Label the x- and y-axis variables, the inflection point, and the carrying capacity on your graph.



13. On which 2 attitude types did you score highest on Kellert's "Survey of basic attitudes towards animals"? Why do you think you scored highest on those attitude types? What does that say about you?

✓ I scored highest on humanistic and moralistic. I think I scored this way because I grew up with pets. This says that I care about individual animals, like a pet, and that I care about animal's wellbeing and don't want them to be treated cruelly.

14. How is the natural resource management philosophy of the National Park Service different from that of the Forest Service or the Bureau of Land Management?



15. Explain the difference between primary and secondary succession.

✓ Primary succession occurs when there is no life present, i.e. side of a volcano that erupted.  
Secondary succession occurs when life is pushed back a stage of growth, i.e. going from shady trees to shrubs and non-shady trees.

16. List and briefly describe 2 reasons why amphibians are more vulnerable to environmental changes than reptiles, birds, and mammals.

✓ Amphibians are more vulnerable because of their permeable skin and their dependency on raising their young in water.



17. Briefly describe 2 advantages that citizen science has over purely academic research.

~~It is much cheaper to higher volunteers  
and you can get data over a greater  
geographic area~~

Already answered 13 questions (only crossed out 3)

**Part 2 - Multiple Choice.** Select one response to each of the following questions and mark your choice on the opscan form with a #2 or softer pencil. Turn in the opscan form along with the questions when you are done (2 pts. each).

1. Which of the following attitudes towards animals is decreasing in frequency in the U.S.?

- a. naturalistic
- ☒ b. utilitarian
- c. humanistic
- d. moralistic

2. "The earth and its resources belong of right to its people. Conservation means the wise use of the earth and its resources for the lasting good of men." This quote sums up the conservation philosophy of

- ☒ a. Gifford Pinchot
- b. Ding Darling
- c. John Muir
- d. Aldo Leopold

3. Which is not a core principle or "pillar" of the North American Model of wildlife conservation?

- ☒ a. wildlife management decisions should be based on science
- ☒ b. wildlife is an international resource that is shared between nations
- ☒ c. all people should have access to hunting opportunities
- ☒ d. the government cannot take away people's right to own wildlife

4. Replication is important in research because it provides a measure of the \_\_\_\_\_ of the data.

- a. accuracy
- b. bias
- ☒ c. variability
- d. magnitude

KPCO

5. Frogs and salamanders are in the same \_\_\_\_\_, but are in a different \_\_\_\_\_ from one another. Pick the two taxonomic levels that fit both blanks in the proper order.

- a. phylum, class
- b. kingdom, phylum
- c. order, family
- ☒ d. class, order

-0

6. Which order of mammals has the greatest number of species worldwide?
- bats
  - carnivores
  - ☒ rodents
  - even-toed ungulates
7. Which of the following events happened first in Aldo Leopold's life?
- hired as a professor at the University of Wisconsin
  - ☒ worked for the U.S. Forest Service in the Southwest
  - bought an abandoned farm (along with "the Shack") and began to restore it
  - wrote the textbook *Game Management*
8. Which act of legislation authorized the federal government to levy an excise tax on guns and ammunition to fund wildlife management activities?
- National Environmental Policy Act
  - Dingell Johnson Act
  - ☒ Pitman Robertson Act
  - Lacey Act
9. Which feature is used most to classify mammals to taxonomic order?
- ☒ number and types of teeth
  - number and position of mammary glands
  - how they walk on their feet
  - types of food that they eat
10. Which of the following would most likely have a density independent effect on a population?
- a sharp increase in the number of predators
  - emigration of a large number of individuals to a new area
  - a new highly lethal contagious disease
  - ☒ a hurricane that destroys much of the habitat
11. As a population increases towards its carrying capacity, which of the following decreases?
- ☒ natality
  - mortality
  - population size ↑
  - population density ↑
12. What distinguishes monotremes from all other members of their taxonomic class?
- they have a four-chambered heart
  - they have a single pair of incisors
  - ☒ they lay eggs
  - they have hooves
13. Which is most characteristic of K-selected species?
- ☒ stable population size
  - high mortality
  - small body size
  - little or no parental care



14. What is the primary motive that birds have for building a nest?
- a. it provides a place for them to rest and sleep
  - ☒ b. it helps to protect their eggs and young from predators
  - c. it makes them more attractive to a potential mate
  - d. it helps to keep them warm at night in winter
15. Which of the following characteristics do all modern reptiles and amphibians share in common?
- ☒ a. amniotic eggs
  - b. scales
  - c. external fertilization
  - ☒ d. ectothermy
16. People who form close bonds with their pets would most likely hold which of the following types of attitudes towards animals?
- a. aesthetic
  - ☒ b. humanistic
  - c. naturalistic
  - d. utilitarian
17. Which adaptation of birds helps to lighten their bodies for flight?
- a. keeled sternum
  - b. 4-chambered heart
  - ☒ c. uric acid excretion
  - d. endothermy
18. The *Martin v. Waddell* Supreme Court case concerned
- ☒ a. ownership of wildlife
  - b. endangered species protection
  - c. funding for wildlife conservation
  - d. transport of wildlife across state borders
19. Which of the following is true when a population is stable?
- ☒ a.  $r = 1$
  - ☒ b.  $K = 0$
  - ☒ c.  $dN/dt = 0$
  - ☒ d.  $\lambda = 0$
- $\lambda = 1 \quad r = 0$
20. Which citizen science project has been running for the longest time?
- a. Great Backyard Bird Count
  - ☒ b. Christmas Bird Count
  - c. Wisconsin Frog and Toad Survey
  - d. North American Breeding Bird Survey
21. Wildlife research is the primary function of which federal agency?
- a. Environmental Protection Agency
  - ☒ b. U.S. Fish and Wildlife Service
  - c. Natural Resources Conservation Service
  - d. USGS Biological Resources Division

22. Much of the wildlife research that was conducted before the 1980s was considered to be primarily descriptive because there was no

- ☒ a. experimentation
- b. application
- c. hypothesis
- d. replication

23. A relative abundance pattern compares the abundances of different

- ~~a.~~ species in the same genus
- ☒ b. communities across the biosphere
- ~~c.~~ individuals in the same species
- d. species in the same community

24. Aldo Leopold's lifespan overlapped with each of the following eras of wildlife conservation except

- ~~a.~~ era of protection
- ☒ b. era of environmental management
- ~~c.~~ era of game management
- ~~d.~~ era of exploitation

SA: 48

MC: 44

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Total: 92