Date:

Name:

3rd 9 Week Final Exam Study Guide Exam on Tuesday March 14th Chapter 8, Lesson 1 (page 285)

- 1. A <u>biome</u> is a group of ecosystems with similar climates and organisms.
- Biotic factors are the <u>living</u> part of the ecosystem. Biotic factors include animals, <u>plants</u>, algae, trees and <u>bacteria</u>.
- Abiotic factors are the <u>nonliving</u> part of the <u>ecosystem</u>? Abiotic factors for food production of plants and algae include Sunlight, <u>carbon dioxide</u> and <u>water.</u>
- List the ecological organization in order. (page 288). [OPCE]. Organism, population community and ecosystem

5. Define organism, population, communities, and ecosystems. (Give examples of each.)

Organism=an individual animal, plant, or single-celled life form

Population=A group of organisms of one species that interbreed and live in the same place at the same time (e.g. deer population).

Community=population of different species occupying a particular area, usually interacting with each other and their environment.

ecosystem= living (biotic) and non-living (abiotic) components and their interactions

Chapter 8, Lesson 2 (page 290)

- 6. A <u>niche</u> is the role of an organism in its environment. Give an example: a garden spider is a predator that hunts for prey among plants_____
- 7. What are limited factors? Examples of limiting factors include food, space and weather conditions
- 8. A species is known to be <u>extinct</u> if all its members disappear from the existence on earth.
- 9. <u>Adaptation</u> is the behavioral and physical characteristics that an organism has to survive <u>successfully</u> in a changing ecosystem.
- 10. Captive breeding is occurring when a bald eagle is made to mate in a wildlife reserve or zoo.
- 11. Define predator and prey. Give examples of each. A predator is an organism that eats another organism. The prey is the organism which the predator eats. Some examples of predator and prey are lion and zebra, bear and fish, and fox and rabbit.

12. Define the three types of symbiosis? Give examples of each not from the book.

Mutualism= A symbiotic relationship in which each of the organisms benefits. Commensalism=a type of symbiotic relationship between two species in which one species benefits while the other is not affected for either good or bad.

Parasitism=A symbiotic relationship in which one species, <u>the parasite</u>, benefits at the expense of the other, the host.

Chapter 8, Lesson 3 (page 296) ***Students use the Foldable we did in class as well

13. What are the six major biomes? 1. Desert Biome 2. Grassland Biome 3. Rain Forest Biome 4.

Deciduous Forest Biome 5. Taiga Biome 6. Tundra Biome.

14. Which two biomes are most similar in regard to rainfall? Tundra & desert

15.Which biome has permafrost? ____<mark>Tundra_____</mark>

16. Which biome do you live in? Deciduous forest, wetlands

17.Which biome turns "swampy" in the summer? <u>Boreal Forest (aka Taiga)</u>

18. Which biome would you find lions, giraffes, and elephants? grassland (savannah)

19. Which biome is near the equator where it is hot all year with heavy rain? There are many, many kinds of plants and animals there. Tropical Rain forest.

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20. The Sahara, Mojave and Gobi are examples of this biome? Desert

Chapter 9 Study Guide: pages are marked

- 21. Two ways population size can increase are <u>Immigration</u> and <u>birth</u> and <u>birth</u> and <u>birth</u> and <u>birth</u> and <u>birth</u> and <u>and</u> and <u>birth</u> birth bi
- 23. How do you calculate population density? For example suppose you counted 20 butterflies in a garden measuring 10 square meters. The population density is <u>20/10=2</u> (pg 324)
- 24. Limiting factors are environmental factors that cause a population to stop growing. Identify and describe the effects of 3 limiting factors. (pages 325-326)

Climate: can affect how well plants or animals can live in a certain area.

Space: without enough space animals are not able to build nests.

Food and Water: if there is not enough food, animals may have to emigrate (move out of an area) or they may die.

25. The largest population an area can support is carrying capacity

26. Biodiversity is the number of different species living in an area. (page 348)

27. Explain the 2 types of structural adaptations with an example for each:

Structural adaptations are physical features of an organism like the bill on a bird or the fur on a bear. 28. Explain the 2 types of behavioral adaptations with an example for each.

Behavioral adaptations are the things organisms do to survive. For example, bird calls and migration are behavioral adaptations.

29. How does natural selection affect the survival of a population?

Imagine a bird species. One day a bird is born with a beak that is longer than the beak of other birds in the species. The longer beak helps the bird catch more food. Because the bird can catch more food, it is healthier than the other birds, lives longer and breeds more. The bird passes the gene for a longer beak on to its offspring. They also live longer and have more offspring and the gene continues to be inherited generation after generation. Over time, animals that are better adapted to their environment survive and breed (natural selection). Animals that are not well adapted to an environment may not survive.

30. Compare and contrast primary and secondary succession. List the possible causes of each. In primary succession, bare rock or sand is only available. Primary succession occurs in places that are the result of lava flows or where glaciers have retreated. Soil is not yet present, so no plants or animals can survive in such. Pioneer species such as lichens and moss, break down rock, turning it into soil for plants to put down roots.

Secondary succession happens where a natural disaster has devastated an area (such as a wild fire, tornado, hurricane, flood) but has left some life in place. Soil is already present, therefore it takes less time for plants and animals to occupy a certain area.

31. How can non-native species affect an ecosystem? Give two examples in Louisiana.

Nutria: is a non native species. It takes space and food away from native species. Proliferates very fast, and has very few predators. Also it is very destructive to Louisiana's wetlands as it eats the plants that anchor the soil for the wetlands.

<u>Water hyacinth</u> is another example of an non-native species: it grows very fast and covers wetlands, taking up space, nutrients and oxygen from other species in wetlands.

- 32. There are several examples of how human activities may harm the balance in an ecosystem? What happens to soil when grasses are overgrazed by cattle? <u>desertification</u>
- 33. Why is biodiversity important? Pg 349 Economical value: many resources come from tropical rain forest, one of the most biodiverse ecosystems. Ecological value: organisms in ecosystems are interdependent on each other.

34. What is extinction? What causes it? pg 353

Extinction is when a species ceases to exist altogether. Species go extinct if they are not able to adapt to changes to their environment, or compete effectively with other species. Also disease or over hunting may cause extinction.

35. Explain the differences among a threatened species, an endangered species, and an extinct species. Pg 353

Endangered - any species that is in danger of extinction.

Threatened - any species that is likely to become an endangered species

- 36. Habitat fragmentation contribute to extinction by <u>breaking</u> larger habitats into smaller, isolated fragments thereby depriving species of their basic needs. Pg 354
- 37. Illegal removal or killing of wildlife is called poaching. Pg 354

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- 38. Scientist Gregor Mendel, is the first to study how traits are passed down from parents to their offsprings which is called to <u>heredity</u>. This makes him earn the name, <u>father</u> of <u>genetics</u>
- 39. Understand and be able to apply all terminology in lesson 1:
- a) Heredity, trait, genetics, purebred, gene, homozygous, heterozygous, phenotype, genotype
- b) [T] is dominant for tall and [t] is a recessive allele for short, what is the phenotype of genotype '**Tt**'
- c) The passing on of traits from parents to offsprings is called <u>heredity</u>
- d) The physical characteristics that a species expresses is termed as Phenotype.
- e) <u>50 %</u> of a parent's alleles is contributed by a parent to their offspring.
- f) Alleles with **BB** represent a <u>purebred</u> or <u>homozygous dominant</u> trait
- g) In a punnett square a letter with a capital for allele represents a Dominant allele
- h) In a punnett square, genotype 'bb' represents a <u>purebred</u> or homozygous recessive allele
- In a punnett square, the alleles with **Bb** represent a <u>hybrid</u> or <u>heterozygous</u> <u>Note:</u>
- 40. Be able to construct a Punnett square and determine probability for phenotypes and genotypes.
- 41. Understand and be able to apply the terms homozygous and heterozygous.
- 42. Understand the main types of mutations.