**ECOLOGY REVIEW**

(Use notes, assignments or text if needed)

1. The **BIOSPHERE** is made up of the parts of the planet including land, water or atmosphere in which all life exists.

2. The type of symbiosis in which both organisms benefit from living in close association is called **MUTUALISM**.

3. A **POPULATION** is a group of individuals that belong to the same species and live in the same area.

4. A group of organisms so similar to one another that they can breed and produce fertile offspring = **SPECIES**.

5. An **OMNIVORE** eats both plants and animals.

6. A symbiotic relationship in which one member of the benefits while the other is neither helped nor harmed = **COMMENSALISM**.

7. A primary CONSUMER is the **HERBIVORE**.

8. **ECOLOGY** is the science that studies the interactions of organisms with each other and with their environment.

9. Bacteria and **FUNGI** are decomposers, an important group of heterotrophs that break down organic matter.

10. An interaction in which one organism lives in a close association with another. **SYMBIOSIS**.

11. Type of symbiosis in which one organism benefits while the other is harmed. **PARASITISM**.

12. An organism’s **HABITAT** or “address” describes the area where it lives.

13. An organism’s “occupation” or **NICHE** describes the role or position it has.

14. All the different populations that live together in a certain area form a **COMMUNITY**.

15. Each trophic level in a food chain or food web loses about **TEN** percent of available energy.

16. Organisms that can make their own food are called **PRODUCERS** or **AUTOTROPHS**.

17. The network of complex interactions formed by linking together all the food chains in an ecosystem = **FOOD WEB**.

18. All the communities that live in a place together with their nonliving or physical environment =

**ECOSYSTEM**.

19. **ABIOTIC** factors are all the non-living factors that shape ecosystems such as climate, precipitation, wind, nutrient availability, soil type, and sunlight.

20. A **BIOME** is a larger level of organization than an ecosystem. Examples include tropical rainforest, deciduous forest, taiga, and tundra with **MARINE** being the largest on earth.

21. A **SCAVENGER** is an organism that lives upon dead animals and plants.

22. **PREDATION** involves one organism killing another to obtain energy.

23. **PREY** are often fitted with organs of escape of detection (Flying, Mimicry, Blending, Swimming, Running, special behavior patterns).

24. Each step in a food chain or web is called a **TROPHIC** level indicating energy transfer.

25. Ecologists call the amount of living organic material in an ecosystem the **BIOMASS**.

26. After volcanic eruptions or a severe fire, all vegetation was obliterated and a place is a barren habitat without life or soil. **PRIMARY SUCCESSION** begins with pioneer species that colonize.

27. **SECONDARY SUCCESSION** can be described as the colonization of a habitat that once supported plant and animal life but was abandoned due to ecological disturbance. Types of ecological disturbances such as hurricanes and floods can empty a habitat.

28. **CLIMAX COMMUNITY** is the result of succession in which plants and animals are stabilized.

29. Land biomes that contain forests are the **TROPICAL RAINFOREST**, containing the most species of plants and animals on earth; temperate **DECIDUOUS** forest, having four distinct seasons; and **TAIGA** or Boreal Forest, consisting of mainly conifers that block the forest floor.

30. Land biomes that do NOT contain forests are **DESERT** with the lowest rainfall; prairies or plains are part of **GRASSLANDS**; **SAVANNAS** can support trees, but not forests and have long rainy seasons and shorter drought conditions; and **TUNDRA**, having average temperatures of -12⁰ C with permafrost.

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**Answer the questions about the food web shown below.**



31. Which organism is a top predator?

 A. grasshopper **B. wolf** C. deer D. mouse

32. Which organisms would compete for food?

 **A. hawk and snake** C. mouse and hawk

B. deer and snake D. wolf and mouse

33. What would most likely happen if mouse and grasshopper populations decreased rapidly?

 A. snake has more prey

B. hawk population rises

**C. snake population decreases**

34. The producer would be the:

 A. butterfly **B. plants** C. grasshopper D. wolf

35. Primary consumers would be:

 A. deer and hawk **C. mouse and butterfly**

B. wolf and grasshopper D. snake & mouse

36. Secondary consumers would be:

 A. deer and hawk C. mouse and butterfly

B. wolf and grasshopper **D. snake & hawk**

**True or False**

*Decide whether each statement below is T (true) or F (false). If false, change the underlined word to make it true by writing the correct choice on the line after each statement.*

\_\_F\_\_37. Where an organism lives is called its niche. **Habitat**

\_\_T\_\_38. If an insect eats a plant and a bird eats the insect, then the bird is a secondary consumer. **True**

\_\_F\_\_39. All food chains or webs begin with consumers. **Producers**

\_\_T\_\_40. A single gray wolf is an organism. Many gray wolves living together is called a population. **True**

\_\_T\_\_41. An example of a decomposer would be fungi. **True**

\_\_F\_\_42. Animals that can eat both plants and animals is called a(n) herbivore. **Omnivore**

\_\_T\_\_43. Competition occurs when organisms attempt to use the same resource at the same place and at the same time. **True**

\_\_F\_\_44. The number of individuals per unit area is called population growth. **Density**

\_\_T\_\_45. An ecological footprint is an estimate of the amount of land required to provide the raw materials an individual or nation consumes (food, fuel, housing). **True**

**Drawing/Labeling**

Label the ecological (energy) pyramid using all the words in the list shown.

**Tertiary consumers**

**Least Energy Available**

**Smallest population, Eagle**

**Secondary Consumers**

**Carnivores**

**Owl**

**Primary Consumers**

**Herbivores**

**Mouse**

**Producers, plants**

**Largest Population**

**Autotrophs, Most available energy**

- autotrophs

- carnivores

- eagle

- herbivores

- largest population

- least available energy

- most available energy

- mouse

- owl

- plants

- primary consumers

- producers

- smallest population

- secondary consumers

- tertiary consumers

**Read the statements below and decide which relationship it is describing.**

*Write “C” – commensalism, “M” – mutualism, “P” – parasitism, or “P/P” – predator/prey*

**C** 46. Birds build nests in trees to keep their eggs away from predators, the tree isn’t affected.

**M** 47. Bacteria in your intestines get food and water from you and they, in turn, help you digest your food. **Both organisms benefit.**

**P/P** 48. Charlie the tuna gets caught in a net and made into tuna fish sandwiches.

**C** 49. Orchids grow high in trees so they can get rainwater and sunlight. The tree gets nothing in return. **One organism benefits, the other is unaffected.**

**P** 50. “Ouch”, yelled Mike as a mosquito bit his arm. **One organism benefits, the other is harmed.**

**M** 51. Some birds ride on the back of buffalo. The birds eat annoying insects off the buffalo and they also get a free ride.

**M** 52. Fungi and algae can live together as lichens. The algae provide food through photosynthesis and the fungi provide water and minerals.

**P/P** 53. The lion grabbed the gazelle by the neck and delivered a crushing blow with its teeth.

**P** 54. Chad’s dog had to take medicine to get rid of the worms in his stomach.

**M** 55. Tiny protists living in the stomach of termites get food when the termite eats. The protists also help the termites digest wood.

56. All the examples above describe relationships between organisms. What word is used to describe relationships between organisms? **Symbiosis**

57. Which curve shows a population that has few offspring with good parental care?



**I. High death rate in older organisms (humans).**

58. Which curve shows a population that produces large numbers of offspring with little to no care?

**III. Fish, plants, high infantile death rate.**

59. Population growth that will reach carrying capacity has what shape curve over time?

**“S” shaped (logistic or restricted) curve, beginning with exponential growth and leveling off.**

60. Habitat preservation, limited harvest, biotechnology all help to conserve \_\_\_?

**Biodiversity.**