**(AP) ENVIRONMENTAL SCIENCE 2022-23 October 27, 2022**

**Today’s Agenda (Day 45)**

1. Housekeeping Items

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1. Homework Check:

🡪 Chapter 5 Reading Guide

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1. Class Activity:

🡪**\*HALLOWEEN PARTY\***

🡪MONDAY: DAY 3: Chapter 5 PPT Review

1. Section 5.3 – Kinds of Organism Interactions
2. Section 5.4 – Community and Ecosystem Interactions

HOMEWORK:

* READ: Chapter 5 – Interaction: Environments & Organisms
* COMPLETE: Chapter 6 Vocabulary, Ch 6 Reading Guide Questions
* **STUDY**: Chapter 5 Test

CHAPTER 6 – Kinds of Ecosystems & Communities

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| Abyssal ecosystem | Alpine tundra | Benthic ecosystem | Biochemical oxygen demand | Biomes  | Boreal forest |
| Chaparral | Climax community | Coral reef ecosystem | Deserts | Emergent plants | Estuary |
| Euphotic zone | Eutrophic lake | Freshwater ecosystems | Limnetic zone | Littoral zone | Mangrove swamp ecosystem |
| Marine ecosystem | Marsh | Mediterranean shrublands |  Oligotrophic lake | Pelagic ecosystem | Periphyton  |
| Permafrost | Phytoplankton | Pioneer community | Plankton | Primary succession | Savanna |
| Secondary succession | Seral stage | Sere | Steppes | Submerged plants | Succession |
| Successional stage | Swamps | Taiga | Temperate deciduous forest | Temperate grasslands | Temperate rainforests |
| Tropical dry forest | Tropical rainforests | Tundra | Zooplankton |  |  |

REMINDERS

* **TEST: Ch 5 🡪 ~~Oct. 27~~ Nov. 1**
* Chapter 6 Vocabulary – Oct. 30
* Ch 6 Reading Guide – Nov. 2
* **QUIZ: Ch 6 Vocabulary 🡪 Nov. 3**
* **TEST: Ch 6 🡪 Nov. 8**

**(AP) ENVIRONMENTAL SCIENCE 2022-23 READING GUIDE**

**CHAPTER 5**

REVIEW QUESTIONS

1. List three abiotic and three biotic factors of your environment.

2. Describe a primary limiting factor for reptiles.

3. How is an organism’s niche different from its habitat?

4. Describe, in detail, the niche of a human.

5. How are the concepts of population and species similar?

6. Describe how genetic differences, number of offspring, and death are related to the concept of natural selection.

7. How is natural selection related to the concept of niche?

8. What is speciation and why does it occur?

9. Why does extinction occur?

10. Give an example of coevolution.

11. List five predators and their prey organisms.

12. Describe the difference between interspecific and intraspecific competition.

13. What do parasitism, mutualism, and commensalism have in common? How are they different?

14. How do the concepts of ecosystem and community differ?

15. What roles do producers, consumers, and decomposers fulfill in an ecosystem?

16. Give examples of organisms that are herbivores, carnivores, and omnivores.

17. What distinguishes a keystone species from other species in an ecosystem?

18. How is the concept of trophic levels related to energy flow in an ecosystem?

19. Describe a food chain and a food web.

20. Describe how each of the following is involved in the carbon cycle: carbon dioxide, producer, organic compounds, consumer, respiration, and decomposer.

21. List three changes to the carbon cycle caused by human activity.

22. Describe how each of the following is involved in the nitrogen cycle: atmospheric nitrogen, nitrogen-fixing bacteria, nitrifying bacteria, denitrifying bacteria, producer, protein, consumer, and decomposer.

23. List three ways humans have altered the nitrogen cycle.

24. Describe how each of the following is involved in the phosphorus cycle: phosphorus in rock, producer, consumer, animal waste, respiration, and decomposer.

CRITICAL THINKING QUESTIONS [for APES students only]

1. Many people in the world have very little protein in their diet. They are often able to grow crops to feed themselves but do not raise cattle or other sources of meat. Describe why these people are not likely to use some of the crops they raise to feed to cattle.

2. Some people predict that the available sources of phosphorus from mines will be exhausted in the next 50 years. Describe what changes are likely to occur in ecosystems if phosphorus is not available.

3. Polar bears hunt seals from ice and have been placed on the endangered species list due to warming temperatures. Why has the habitat of the polar bear changed?

**(AP) ENVIRONMENTAL SCIENCE 2022-23 READING GUIDE**

**CHAPTER 6**

REVIEW QUESTIONS

1. Describe the process of succession. How does primary succession differ from secondary succession?

2. How does a climax community differ from a successional community?

3. List two abiotic characteristics typical of each of the following biomes: tropical rainforest, desert, tundra, taiga, savanna, Mediterranean shrublands, tropical dry forest, temperate grassland, temperate rainforest, and temperate deciduous forest.

4. List two biotic characteristics typical of each of the following biomes: tropical rainforest, desert, tundra, taiga, savanna, Mediterranean shrublands, tropical dry forest, temperate grassland, temperate rainforest, and temperate deciduous forest.

5. What two primary factors determine the kind of terrestrial biome that will develop in an area?

6. How does height above sea level affect the kind of biome present?

7. What areas of the ocean are the most productive?

8. What is the role of each of the following organisms in a marine ecosystem: phytoplankton, zooplankton, algae, coral animals, and fish?

9. Which of the following organisms functions only in the euphotic zone: seaweed, crabs, phytoplankton, fish?

10. List three differences between freshwater and marine ecosystems. 11. What is an estuary? Why are estuaries important?

CRITICAL THINKING QUESTIONS [for APES students only]

1. Does the concept of a “climax community” make sense? Why or why not?

2. What do you think about restoring ecosystems that have been degraded by human activity? Should it be done or not? Why? Who should pay for this reconstruction?

3. Identify the biome in which you live. What environmental factors are instrumental in maintaining this biome? What is the current health of your biome? What are the current threats to its health? How might your biome have looked 100, 1,000, 10,000 years ago?

4. Imagine you are a conservation biologist who is being asked by local residents what the likely environmental outcomes of development would be in the tropical rainforest in which they live. What would you tell them? Why do you give them this evaluation? What evidence can you cite for your claims?

5. The text says that about half of the old-growth temperate rainforest in the Pacific Northwest has been logged. What to do with the remaining forest is still a question. Some say it should be logged, and others say it should be preserved. What values, beliefs, and perspectives are held by each side? What is your ethic regarding logging old-growth in this area? What values, beliefs, and perspectives do you hold regarding this issue?

6. Much of the old-growth forest in the United States has been logged, economic gains have been realized, and second-growth forests have become established. This is not the case in the tropical rainforests, although they are being lost at alarming rates. Should developed countries, which have already “cashed in” on their resources, have anything to say about what is happening in developing countries? Why do you think the way you do?