

Unit 3 Study Guide

Chapter 6

1. Know the definitions of **species richness** and **species evenness**.
2. How could you determine if an area was negatively affected?
3. Know the definitions of **keystone species**, **specialist niche species**, and **generalist niche species** and be able to identify examples of each.
4. You also need to know the following: **biotic potential**, **carrying capacity**, and **environmental resistance**.
5. Be able to identify the shapes of **logistic** and **exponential growth curves**.
6. How do these categories affect the growth of future populations?
7. What is **intrinsic rate of increase (r)** and how do you calculate it? What is it also known as?
8. What would happen to a population if its **biotic potential** increased?
9. When does a **population crash** occur and how do **positive** and **negative feedback loops** figure into it all?
10. Be able to classify **population controls** as either **density-dependent** or **density-independent**.
11. Know what **r -strategists** and **K -strategists** are and be able to identify characteristics of each
(See Table 19.1 on page 201)
 - Which organisms represent each type of strategist?
 - Which shaped curve represents each?
 - Which is a **generalist**? A **specialist**?
12. Be familiar with the **survivorship curves** - **late loss**, **constant loss**, and **early loss** – and know which organisms are classified as each type.
13. Know what **resource partitioning** is and be able to recognize organisms which exemplify this process.
14. Be familiar with **mutualism**, **commensalism**, **competition**, **predation**, and **parasitism** and be able to match organisms to the correct relationships.
15. Know techniques which are used by **predators** (ex: speed and cunning) and **prey (mimicry)**.
16. Which relationship is best demonstrated by a **food chain**?
17. Be able to recognize an ecological service provided by **keystone species**.
18. Be very familiar with **primary succession** and **secondary succession** and be able to identify sample of each.
19. Know what a **pioneer species** is and which type of succession it is associated with.
20. Be familiar with the **intermediate disturbance hypothesis** and which conditions would result in the greatest biodiversity.
21. Be familiar with the **theory of island biogeography**, the relationship between **immigration** and **extinction rates** and large/near, large/far, small/near, and small/far islands.

Chapter 7

22. What has caused the human population to grow exponentially over the past 200 years?
23. How have humans extended the Earth's **carrying capacity**?
24. Know how to calculate **population change**. **BIDE!**
25. What is **crude death rate** and **crude birth rate** and where are they the highest?
26. What is the **Rule of 70**?
27. What is **total fertility rate** and **replacement-level fertility**?
28. What happens when the **total fertility rate** drops below the **replacement-level fertility**?
29. What is the **actual** average replacement-level rate for the whole world?
30. What are some of the **social factors** that affect both birth and fertility rates?
31. The rise in the size of the human population is primarily due to what factor?

32. Why have **death rates** declined?
33. Know exactly what **infant mortality rate** refers to.
34. What is the **age structure** of a population?
What do age structure diagrams show?
What 3 categories can they be divided into?
35. What is **ZPG**, and what is the shape of an **age structure diagram** of a country that has achieved it?
36. What are the shapes of an **age structure diagrams** of countries that are rapidly growing or declining in population?
37. What characteristic of a population implies the greatest built-in **momentum** for population growth?
38. What does **demographic transition** mean anyhow and what does it help explain?
39. Be very familiar with each **stage** of the demographic transition.
40. What is **IPAT**?
41. How could a **declining population** still have an **increasing impact**?
42. What are some characteristics of **urban areas**?
43. Read over section on **India** on page 247-248.

Now go quiz yourself with the questions on pages **221-223** and **250-254**!