Ch 5 Answer Key: Chapter 5 book questions p. 135-136

1. C
2. C
3. B
4. B
5. B
6. A
7. B
8. A
9. D
10. A
11. Immigration is movement of individuals into a population. Emigration is movement of individuals out of a population.
12. Graph should look like the ones on page 121
13. Population growth rate slows or stops following a period of exponential growth, may slow down due to birth rate decreasing or death rate increasing or when both events occur at the same rate. Population growth also may slow down when the rate of immigration decreases, the rate of emigration increases, or both.
14. Carrying capacity represents the largest number of individuals that a given environment can support. Ie. Only enough resources for 150 so anything over 150 dies
15. Limiting nutrients added to a bond would likely cause an increase in carrying capacity for the species directly dependent on that nutrient ie. Algal bloom (algae needs nitrogen, nitrogen is its limiting nutrient, if introduced it grows)
16. 2 species compete for same resource, both under pressure to change in ways that decrease their competition. Over time the species may evolve to occupy separate niches.
17. Rise in popl of the prey would normally be followed by a rise in predator population. AS the pop. Of predators rises, the pop of prey declines, etc. The cycle continues and acts as a means of population control.
18. Parasites take nourishment from their hosts, often weakening them and causing disease or death.
19. DI factors have similar effects on all individuals in a population regardless of the pop’s density. Ie. Drought, killing frost, or flood
20. Human pop began growing more rapidly 500 years ago due to favorable growth conditions, agriculture and industry. More food, medicine, sanitation, healthcare, etc. less death and birth rates remained high
21. Demographic transition is prediction of pop changes based on analysis of changes in birthrate and death rate
22. Pops with nearly equal numbers of peeps in each age graph will have a slow but steady growth rate for the near future. Pops with many more young children than teens and many more teens than adults will grow at a fast rate.
23. A limited resource can affect the survival of a species if that species depends on the resource as part of its habitat. Ie. Panda habitat
24. Since the communicable virus is more likely to spread when people are crowded together, it is DD
25. In most cases, it will have a greater effect on the pop of a small ecosys. A small pop will be more susceptible to serious damage from a DI limiting factor such as a flood or storm.
26. b/c there are relatively small numbers of individuals in younger age groups, the population of Sweden is likely to stay about the same or even decline over the next 50 yrs.
27. The growth curve of a small town made up mostly of seniors would show a decline in pop. A growth curve of a small town made up of newly married couples would show an increase in pop.
28. The carrying capacity of a pop. Is affected by limiting factors such as competition, predation, parasitism, disease, climate, drought, and human disturbances. Likewise, the carrying capacity of a city’s roads depends on such limiting factors as the number and width of roads, the number of intersections, and the number of vehicles traveling on the road.
29. If there is a sudden increase in food for the prey, the pop of predators would probably increase as well. An increase in food for prey would allow for a greater number of prey. More predators would then be supported.
30. In parasitic and predator-prey relationships, one member of the relationship benefits, while the other is harmed or killed.
31. The population of fish would most likely decrease due to a decrease in the size of the ecosys. The decreased size would provide a smaller amount of resources
32. A demographer would ask questions such as: “have changes in society, such as access to healthcare and meds, lowered the death rate?” and “Does the birthrate remain high, or are there signs that the birthrate is falling?”
33. The fertilizer washing into the pond would increase the level of a limiting factor in the pond ecosystem – nitrogen. This would increase the carrying capacity of the pond and probably lead to rapid growth of the algae population.