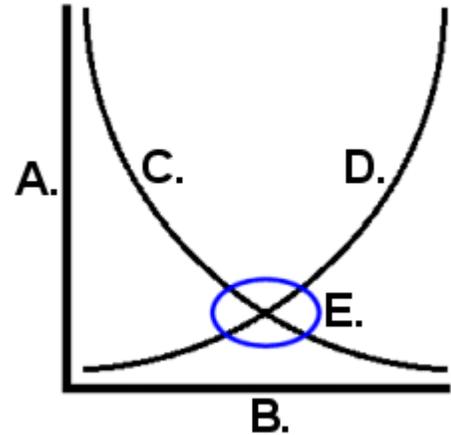


ENTER YOUR NAME AND SECTION ABOVE AND USE THE “BUBBLE SHEET” TO ANSWER THE FOLLOWING QUESTIONS. ENTER YOUR NAME ON THE BUBBLE FORM AND FILL THE CIRCLES. (be sure to mark "blank" between your first, middle, and last names)

Each answer is worth 2 points.

The following 5 questions referring to the figure to the right treat the Theory of Island Biogeography.



1. Referring to the figure to the right, axis “A” should be labeled

- a. equilibrium
- b. extinction
- c. number of species
- d. immigration
- e. rate

2. Referring to the figure above, right, curve “D” should be labeled

- a. equilibrium
- b. extinction
- c. number of species
- d. immigration
- e. rate

3. Referring to the figure above, right, the encircled area “E” should be labeled

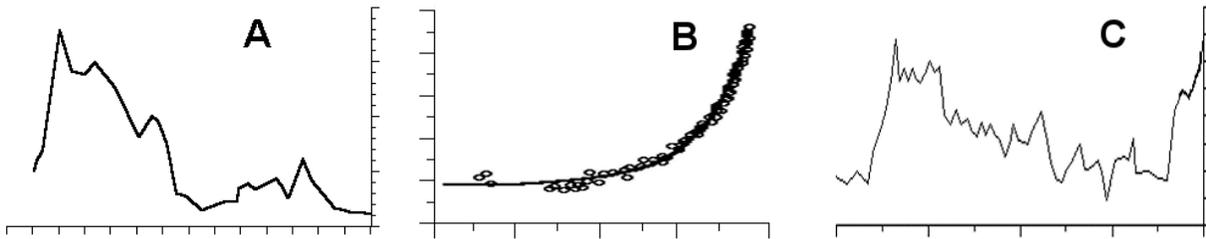
- a. equilibrium
- b. extinction
- c. number of species
- d. immigration
- e. rate

4. Referring to the figure above, right, the labeled item most closely associated with island area is

- a. **A.**
- b. **B.**
- c. **C.**
- d. **D.**
- e. **E.**

5. Referring to the figure above, right, the labeled item most closely associated with biodiversity is

- a. **A.**
- b. **B.**
- c. **C.**
- d. **D.**
- e. **E.**



Questions 6, 7 & 8 refer to the above 3 figures. For each graph, the x-axis is time from older (left) to today (right) and the y-axis is concentration from low (bottom) to high (top).

6. Graph "A" best matches the history of the atmospheric concentration of carbon dioxide
- during the last 15 years
 - during the last 200 years
 - during the last 100,000 years
 - during the last 1,000,000 years
 - during the last 1,000,000,000 years
7. Graph "B" best matches the history of the atmospheric concentration of carbon dioxide
- during the last 15 years
 - during the last 200 years
 - during the last 100,000 years
 - during the last 1,000,000 years
 - during the last 1,000,000,000 years
8. The graph showing the smallest total change in carbon dioxide or oxygen is
- A**
 - B**
 - C**

For each **number** (left), match the species-interaction term with the **letter** of the most suitable "help-or-hurt (+1 -1)" summary (right)

- | | |
|-----------------|-----------|
| 9. Commensalism | a. -1, -1 |
| 10. Competition | b. -1, +1 |
| 11. Mutualism | c. 0, 0 |
| 12. Parasitism | d. 0, +1 |
| 13. Predation | e. +1, +1 |

14. All of the following are important kinds (categories) of hazards **EXCEPT** _____

- Aerial
- Biological
- Chemical
- Cultural
- Physical

15. _____ is the leading cause of death in developing countries

- Alzheimer's dementia
- Bacterial infections
- Diabetes
- Emphysema
- Heart Disease

16. _____ is an example of a viral disease spread by air
- Acne
 - Bubonic plague
 - Diphtheria
 - Smallpox
 - Tuberculosis
17. Among educated women the population growth rate is usually ___ than among uneducated women
- less than
 - greater than
 - the same as
18. During the ___ the Vikings colonized Greenland and Earth's temperature was warmer than during the following ___ when that colony collapsed.
- Eocene – Last Glacial Maximum
 - Medieval Warm Period – Little Ice Age
 - Mesozoic – Neoglacial
 - Mid-Holocene optimum – Illinoisan glaciation
 - Paleozoic – Mesozoic
19. The epidemic that caused the greatest number of deaths in the United States was the ___ epidemic
- AIDS
 - Bubonic Plague
 - Polio
 - Spanish Flu
 - Tuberculosis
20. A measure of how harmful a substance is
- Bioaccumulation
 - Biomagnification
 - Hazard
 - Risk
 - Toxicity
21. As primary and secondary succession proceed, soil nutrients generally
- decrease
 - increase
 - stay the same
22. A substance or environmental factor that causes birth defects is a
- carcinogen
 - hazard
 - mutagen
 - risk
 - teratogen
23. A substance or environmental factor that causes harm is a
- carcinogen
 - hazard
 - mutagen
 - risk
 - teratogen

24. Diseases such as tuberculosis that are spread from person to person are
- benign
 - nontransmissible
 - r-selected
 - teratogenic
 - transmissible
25. During the last 150 years plant and animal range displacements have generally been
- northward and to higher elevation
 - northward and to lower elevation
 - southward and to higher elevation
 - southward and to lower elevation
 - southward and northward
26. The Earth's atmosphere is about 21%
- Argon
 - Carbon Dioxide
 - Nitrogen
 - Oxygen
 - Water Vapor
27. The effect of the ozone hole is _____ at the surface of the earth
- increased cosmic radiation
 - increased infrared radiation
 - increased ultraviolet radiation
 - increased visible radiation
 - increased X-radiation
28. The biological warfare agent used most recently (2001) in attacking USA citizens was
- Aflatoxin
 - Anthrax
 - Botulinum
 - Salmonella
 - Tularemia
29. Globally, the hottest and driest period of the last 12,000 years occurred about
- 500 years ago
 - 1000 years ago
 - 2000 years ago
 - 5000 years ago
 - 10,000 years ago
30. In general, biodiversity in the tropics is ____ biodiversity at the poles
- equal to
 - greater than
 - less than

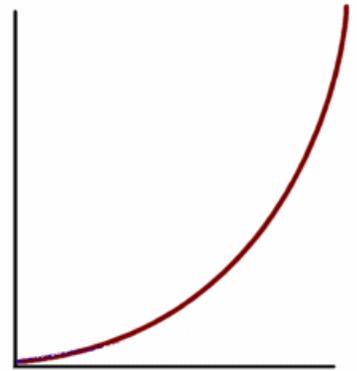
31. In the United States, most deaths are due to ____ diseases
- benign
 - nontransmissible
 - r-selected
 - teratogenic
 - transmissible
32. In urban areas human population growth rate is usually ____ than in rural areas
- less than
 - greater than
 - the same as
33. Most of the megafauna (mastodons, mammoths, camels, etc.) of North America became extinct about
- 500,000 years ago
 - 250,000 years ago
 - 100,000 years ago
 - 50,000 years ago
 - 10,000 years ago
34. Over the last 150 years, the average temperature of the Earth's surface has
- increased by over 5 °C
 - increased by less than 1 °C
 - not changed
 - decreased by less than 1 °C
 - decreased by over 5 °C
35. Over the last 150 years, the average sea level of the Earth's oceans has
- risen by over 1 foot
 - risen by less than 1 foot
 - not changed
 - fallen by less than 1 foot
 - fallen by over 1 foot
36. Heating of the Earth and other planets due to solar energy absorbed in the atmosphere is
- Bioaccumulation
 - Competition
 - Nitrification
 - the Greenhouse Effect
 - the Ozone Hole
37. The innermost layer of the Earth's atmosphere is the ____
- hydrosphere
 - mesosphere
 - stratosphere
 - thermosphere
 - troposphere

38. The most common indoor pollutant to cause human injury is
- carbon monoxide
 - chloroform
 - nitrogen oxides
 - radon 222
 - trichloroethylene
39. The birth rate is influenced by all of the following **EXCEPT**
- Age of Marriage (first birth)
 - Education
 - Epidemics
 - Infant mortality
 - Urbanization
40. The life zone with the greatest diversity of agave family (Agavaceae) is the
- Canadian
 - Hudsonian
 - Lower Sonoran
 - Transisition
 - Upper Sonoran
41. The ozone hole is in the
- hydrosphere
 - mesosphere
 - stratosphere
 - thermosphere
 - troposphere
42. The plant species most characteristic of the Lower Sonoran life zone is
- Arizona gray oak *Quercus grisea*
 - Chihuahua pine *Pinus chihuahuana*
 - Creosotebush *Larrea tridentata*
 - Douglasfir *Pseudotsuga menziesii*
 - Ponderosa pine *Pinus ponderosa*
43. The vegetation type characteristic of the Upper Sonoran life zone
- Chaparral (sclerophyllous leaves)
 - Desertscrub (sparse spiny plants)
 - Riparian (streams and washes)
 - Woodland (low trees and shrubs)
 - Weeds (disturbance community)
44. The "r" in "r-selected" refers to
- competition
 - equilibrium population size
 - intrinsic rate of growth
 - optimal population structure
 - predator/prey ratio
45. The Total Fertility Rate (TFR) is
- about two for a zero population growth
 - a result of the death rate

- c. greater in developed countries than in developing countries
- d. the number of daughters in a family
- e. the total number of persons born per year

46. Organisms with "J-shaped" (see figure at right) population growth curves are characterized by

- a. long lifespans
- b. having few offspring
- c. slow body growth
- d. large body size
- e. poor competitive ability



47. What has been the history of global climate over the last million years?

- a. alternation between icebox and greenhouse climate with overall cooling
- b. alternation between icebox and greenhouse climate with overall warming
- c. alternation between icebox and greenhouse climate with increasing amplitude
- d. uniform (smooth) gradual cooling
- e. uniform (smooth) gradual warming

48. Ozone depletion is caused by ____, and requires extreme ____

- a. albedo - shortwave radiation
- b. carbon dioxide - pressure
- c. chloroflorocarbons - cold
- d. ozone - ultraviolet radiation
- e. PAN's - pollution

49. Without the greenhouse effect, the surface of Earth would be an average of about

- a. 30 °C colder
- b. 15 °C colder
- c. no different
- d. 15 °C warmer
- e. 30 °C warmer

50. The process harming vegetation, destroying statues, and harming the human respiratory system is

- a. acid deposition
- b. acid ophilous
- c. acid ozone
- d. acid reflux
- e. acid rock