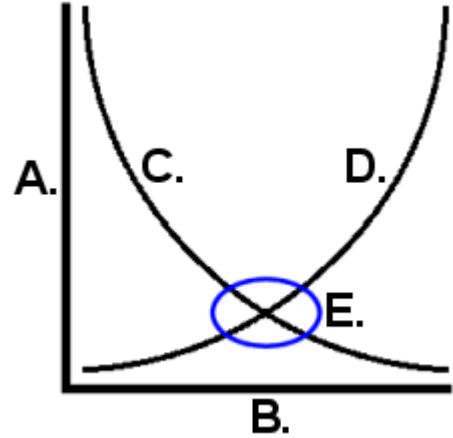


**ENTER YOUR NAME AND SECTION ABOVE AND USE THE “BUBBLE SHEET” TO ANSWER THE FOLLOWING QUESTIONS. ENTER YOUR NAME ON THE BUBBLE FORM AND FILL THE CIRCLES.** (be sure to mark "blank" between your first, middle, and last names)

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

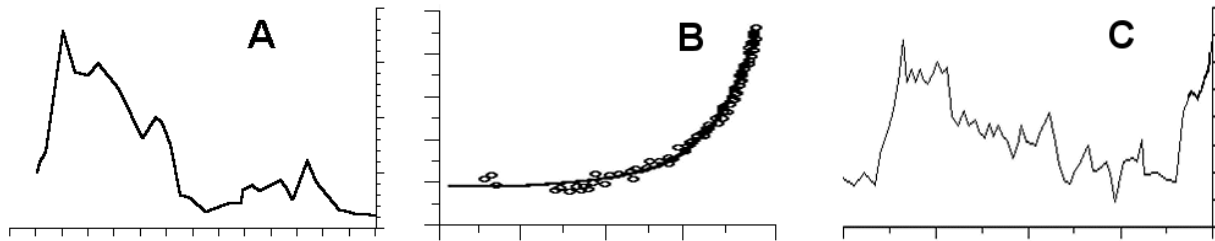
- a. equilibrium
- b. extinction
- c. number of species
- d. immigration
- e. rate

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

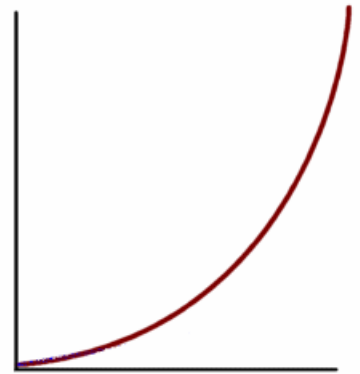
31. In the United States, most deaths are due to \_\_\_\_ diseases
- benign
  - nontransmissible
  - r-selected
  - teratogenic
  - transmissible
32. In urban areas human population growth rate is usually \_\_\_\_ than in rural areas
- less than
  - greater than
  - the same as
33. Most of the megafauna (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