Questions 1-3 refer to the locations marked by the letters on the world map below

1. The location where new crust is being created at a divergent plate boundary
2. The location where one tectonic plate is being forced beneath another, creating a volcanic arc
3. The intraplate location where hot-spot volcanism is occurring

Questions 4-6 refer to the following
A. Safe Drinking Water Act
B. Clean Water Act
C. Comprehensive Environmental Response Compensation and Liability Act (CERCLA)
D. Resource Conservation and Recovery Act
E. Toxic Substances Control Act

4. Requires minimum safety standards for community water supplies
5. Mandates the restoration and maintenance of the chemical, physical, and biological integrity of the nation’s waters
6. Establishes cradle-to-grave tracking of hazardous waste

Questions 7-9 refer to the following regions of Earth’s atmosphere
A. Thermosphere
B. Exosphere
C. Troposphere
D. Mesosphere
E. Stratosphere

7. The phenomenon causing global warming occurs primarily in this region of the atmosphere
8. The beneficial ozone layer is in this region of the atmosphere
9. Most oxygen is found in this layer of the atmosphere

Question 10-13 refer to the substances listed
A. Asbestos
B. Radon
C. Lead
D. Carbon Monoxide
E. Formaldehyde

10. Found in old plumbing pipes and fixtures and some ceramic glazes
11. Composed of fibers known to cause lung disease
12. Emitted from most manufactured building materials and furniture
13. Colorless, odorless gas that is a naturally occurring decay product of uranium
14. The greatest amount of fresh water is found in which of the following?
   A. The atmosphere
   B. Estuaries
   C. Lakes
   D. Rivers and streams
   E. Polar ice caps and glaciers
15. Which of the following is true of carbon as it cycles in nature?
   A. Carbon dioxide is released during photosynthesis
   B. Carbon compounds rarely exist in the gaseous state
   C. Carbon sinks include forests and oceans
   D. The carbon dioxide concentration in the atmosphere is reduced by cutting trees
   E. Carbon is concentrated in igneous rocks
16. Which three sources supply the majority of commercial energy in the world today?
   A. Coal, oil, natural gas
   B. Solar, wind, and biomass
   C. Nuclear, hydropower and photovoltaics
   D. Wood, dung and charcoal
   E. Fuel cells, geothermal and tidal power
17. By the year 2050 world population is expected to approach 10 billion. If the current population trends continue, which region of the world will most likely experience the majority of growth?
   A. North and Central America
   B. Central and South America
   C. Eastern and Western Europe
   D. Africa and Asia
   E. Australia and New Zealand
18. Which of the following human activities is most closely associated with depletion of the stratospheric ozone layer?
   A. Mining of coal
   B. Disposal of refrigerators and air conditioners
   C. Heating of homes and factories
   D. Generation of electricity
   E. Agricultural irrigation
19. Overuse of groundwater in coastal areas would most likely result in which of the following?
   (A) Rise in water table
   (B) Increase in stream flow
   (C) Bacterial contamination of surface water
   (D) Saltwater intrusion
   (E) Decrease in eutrophication

20. Of the following countries, which has the largest proven reserves of strategic metals such as manganese, chromium, and platinum?
   (A) South Africa
   (B) Japan
   (C) Saudi Arabia
   (D) The United States
   (E) France

21. In 2007 in the United States there were approximately 480 cars for every 1,000 people. The total number of cars in the United States in 2007 was closest to
   (A) 150,000
   (B) 30,000,000
   (C) 150,000,000
   (D) 300,000,000
   (E) 3,000,000,000

22. Which of the following world regions contain the greatest area of rain forest?
   (A) Canada and the United States
   (B) Eastern and Western Europe
   (C) Russia and China
   (D) Australia and New Zealand
   (E) Brazil and Indonesia

23. Which of the following best exemplifies population momentum?
   (A) Continued growth of a population after fertility drops to replacement level
   (B) Continued growth of a population due to emigration
   (C) Decreased population due to increase in the death rate
   (D) Decreased population due to a reduced death rate and an increased fertility rate
   (E) Growth of a population after the fertility rate doubles

24. Of the following strategies to decrease the landfill volume of packaging material from food and other consumer products, the most energy efficient is
   (A) recovering plastic packaging material from the waste stream and recycling it
   (B) recovering metal packaging material from the waste stream and recycling it
   (C) limiting the size of individual beverage containers made from metal, glass, or plastic
   (D) using more packaging materials that are manufactured from raw materials that are renewable
   (E) promoting the use of reusable containers for consumer goods

25. An integrated pest-management approach to pest control emphasizes which of the following?
   (A) Eradication of the pest population
   (B) Reliance on spraying broad-spectrum pesticides
   (C) Reduction of crop damage to an economically tolerable level
   (D) Use of plant monocultures to simplify spraying
   (E) Elimination of the use of second-generation pesticides

26. Of the following, which is true of noise pollution?
   (A) Noise pollution is an insignificant occupational hazard.
   (B) Noise at 100 decibels has twice the energy of noise at 50 decibels.
   (C) Hearing damage occurs most quickly when the intensity level of the sound is low.
   (D) In urban areas, few individuals are exposed to noise pollution.
   (E) Sudden or persistent noise may lead to permanent hearing loss.

27. If a country has a crude birth rate of 24 per 1,000 and a crude death rate of 8 per 1,000, the natural annual percent increase of its population is
   (A) 0.6%
   (B) 1.6%
   (C) 3%
   (D) 16%
   (E) 32%
28. Which of the following shows the approximate concentration of $CO_2$, $N_2$, and $O_2$ in dry air?

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<tr>
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<th>$CO_2$</th>
<th>$N_2$</th>
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<td>78%</td>
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<td>(E)</td>
<td>&lt;1%</td>
<td>78%</td>
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29. Which of the following best illustrates an abiotic component of the environment affecting a biotic component of the environment?

(A) Composted manure is added to agricultural soil during spring tilling.
(B) Coral reefs modify the direction of an ocean current.
(C) Plants release $O_2$ into the atmosphere during photosynthesis.
(D) Low phosphorus content in soil limits the growth of vegetation.
(E) A thick planting of ground cover reduces soil erosion on a hillside.

30. Of the following cities, which regularly experiences the worst levels of photochemical smog that is enhanced by thermal inversions?

(A) New York City, New York
(B) Los Angeles, California
(C) Portland, Oregon
(D) Atlanta, Georgia
(E) Philadelphia, Pennsylvania

31. Which of the following best describes the first law of thermodynamics?

(A) Energy always changes from a more useful, more concentrated form to a less useful, less concentrated form.
(B) In a closed system of constant mass, the energy involved in any physical or chemical change is neither created nor destroyed, but merely changed from one form to another.
(C) Heat always flows from a hot body to a cold body.
(D) Entropy of a system increases as the state of disorganization in the system increases.
(E) In a reversible process, the entropy of the system is constant, whereas in an irreversible process, the entropy of the system increases.

32. What two main factors would best indicate the quality of life of a country's population?

(A) The total fertility rate and the death rate
(B) The crude birth rate and crude death rate
(C) The birth rate and the infant mortality rate
(D) The replacement-level fertility rate and the total fertility rate
(E) The life expectancy and the infant mortality rate

33. Rachel Carson's contributions to the environmental movement include which of the following?

(A) Alerting the public to the hazardous waste problem at Love Canal
(B) Increasing public awareness of the risks of using pesticides
(C) Starting the first Earth Day in 1970
(D) Discovering the thinning of the ozone layer in polar regions
(E) Being the first female administrator of the EPA

34. In a typical forest ecosystem, dead trees and fallen trees are most important because of their role in which of the following?

(A) Providing a valuable source of timber
(B) Providing habitats for wildlife
(C) Contributing to soil erosion
(D) Increasing water runoff
(E) Removing carbon dioxide from the air

35. Possible effects of a warmer atmosphere include which of the following?

I. Expanded ranges of tropical diseases
II. More intense hurricanes and typhoons
III. Increased crop damage from pests and diseases

(A) I only
(B) II only
(C) I and III only
(D) II and III only
(E) I, II, and III

36. When a rain forest is slashed and burned, the local concentration of carbon dioxide in the atmosphere increases. This is primarily due to

(A) changes in the local climate
(B) oxidation of carbon compounds
(C) cellular respiration of rain-forest plants
(D) erosion of exposed soil
(E) carbon dioxide being released by anaerobic organisms
37. Pollution is considered an external cost when
(A) it has harmful effects borne only by the people who purchase the products that cause the pollution
(B) the cost to the environment is not reflected in the price of the products that produce the pollution
(C) it has a significant impact on the consumer’s decision to buy a product that pollutes
(D) it is a hidden cost that would result in a greater demand for the product if the consumer were aware of the hidden cost
(E) it is produced in the external environment by a malfunction in the operation of the product

38. A sustainable society would emphasize
(A) maintaining the current rates of energy flow and resource use
(B) converting the world’s high-quality energy resources to low-quality heat
(C) recycling both matter and high-quality energy
(D) using energy efficiently and reusing and recycling matter
(E) quickly expanding nuclear power, because it is a renewable resource

39. A large forested area is fragmented into small forest tracts separated by agricultural areas. This change will most likely lead to
(A) an increase in the population of top carnivores
(B) an improvement in the dispersal mechanisms of forest species
(C) a more stable regional climate
(D) a decrease in the amount of edge habitat
(E) a decrease in the gene flow within species of the original forest

40. Which of the following is a greenhouse gas that is produced by domestic livestock?
(A) NO₂
(B) CH₄
(C) O₃
(D) CO
(E) SO₂

41. At the 1997 rate of consumption, about how long will the estimated 2,000 billion barrels of oil last?
(A) 25 years
(B) 50 years
(C) 75 years
(D) 200 years
(E) 500 years

42. What was the approximate percent increase in consumption from 1986 to 1997?
(A) 10%
(B) 20%
(C) 30%
(D) 50%
(E) 80%

In 1997 the World Resources Institute estimated the world’s proven oil reserves to be 1,000 billion barrels and the ultimately recoverable reserves to be 2,000 billion barrels. The table below shows the world consumption of oil from 1986 to 1997.

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Skinny Test #1 [AP Multiple Choice 2008]

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