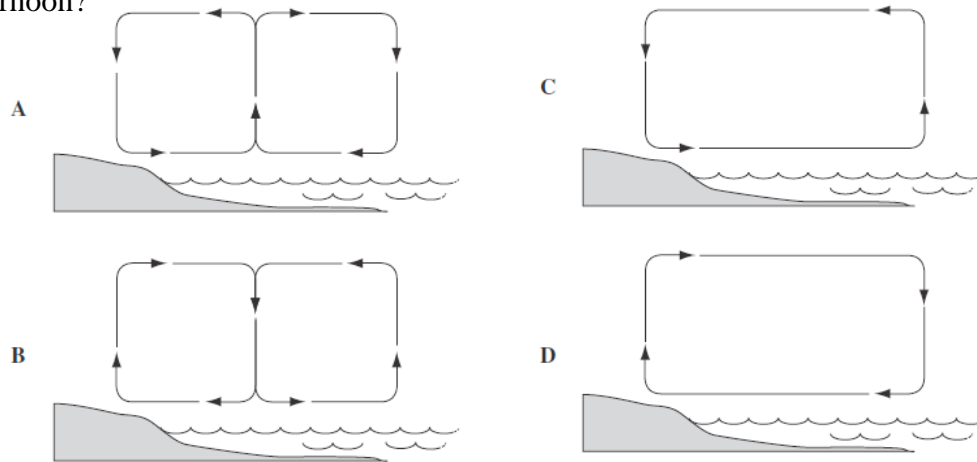


# 1<sup>st</sup> Semester Review

**\*\*Please do not write on this review\*\***

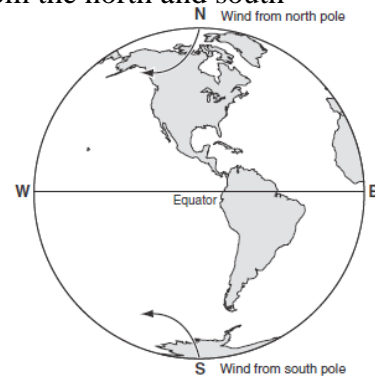
1. Only about 50% of the solar energy directed toward Earth penetrates directly to the surface. What happens to the rest of the radiation?
  - A. It is absorbed or reflected by the atmosphere
  - B. It loses energy traveling through space
  - C. It is reflected off the Moon and back into space
  - D. It loses energy overcoming the Sun's gravity
  
2. The heating of the lower layer of the atmosphere from radiation absorbed by certain heat-absorbing gases is called \_\_\_\_\_.
  - A. the adiabatic effect
  - B. the greenhouse effect
  - C. the photosynthesis effect
  - D. smog
  
3. Which of these could increase average global temperatures?
  - A. increased use of fossil fuels
  - B. increased ocean algal blooms
  - C. decreased carbon dioxide emissions
  - D. increased numbers of animal species
  
4. Permanent deforestation can contribute to potential global warming by
  - A. decreasing atmospheric CO<sub>2</sub> levels.
  - B. increasing atmospheric CO<sub>2</sub> levels.
  - C. decreasing atmospheric N<sub>2</sub> levels.
  - D. increasing atmospheric N<sub>2</sub> levels.
  
5. More solar energy reaches the equatorial regions than the polar regions because the equatorial regions
  - A. are covered by a greater area of land.
  - B. have more vegetation to absorb sunlight.
  - C. have days with more hours of light.
  - D. receive sun rays closest to vertical.
  
6. What class is this?
  - A. Life Science
  - B. Environmental Science
  - C. Earth Science
  - D. Weird Science

7. Which diagram below is the *best* model for the movement of coastal air during the afternoon?



8. In the diagram at right, what causes the wind deflection from the north and south poles?

- A. the rotation of Earth on its axis
- B. the oblate shape of Earth
- C. the tilt of Earth's axis relative to its orbital plane
- D. the difference in total land mass of the two hemispheres



9. Earth rotates in an easterly direction. Therefore, southward wind currents in the Northern Hemisphere appear to be deflected to the

- A. east.
- B. west.
- C. north.
- D. south.

10. One of the most common outcomes of a temperature inversion is

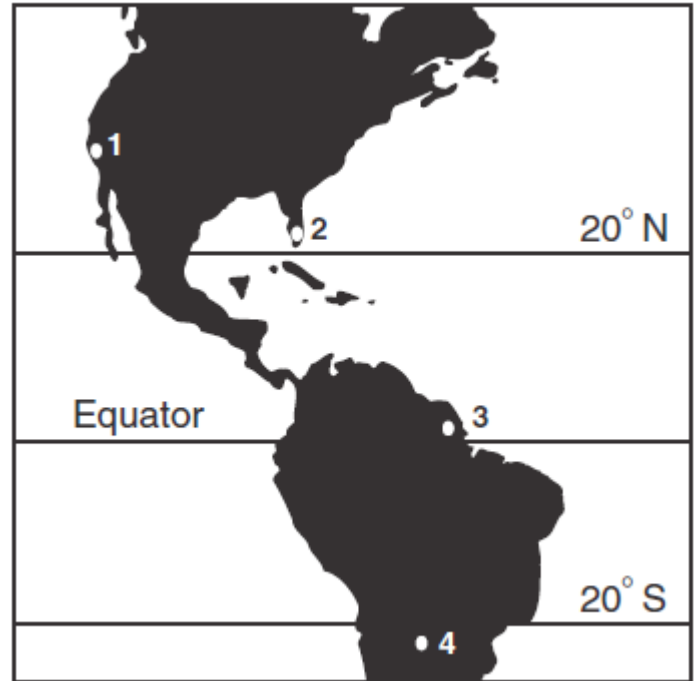
- A. increased pollution
- B. warmer air trapped below cold air
- C. instability of air
- D. increase in thunder and lightning

11. When a layer of cool air at the surface of Earth is found under a layer of warmer air above it, the result is known as

- A. the Coriolis effect.
- B. the greenhouse effect.
- C. a temperature inversion.
- D. an upwelling.

12. At which location on the map would a rain forest *most* likely be found?

- A. 1    B. 2    C. 3    D. 4



13. Which of these effects generally occurs as the result of a warm air mass and a cooler air mass converging at Earth's surface?

- A. The sky becomes clear.                      B. Winds die down.  
C. Cloud formation decreases.                D. Stormy weather patterns develop.

14. Snow on the ground prevents polar climates from gaining heat by what mechanism?

- A. heating by greenhouse gases              B. heat spread from the equator  
C. reflection of solar radiation                D. release of heat from Earth's core

15. When comparing temperatures of two California regions of the same latitude, students found that the nighttime temperature dropped significantly at the desert site but only slightly at the coastal site. This difference is mostly caused by

- A. lower wind speeds in the desert than at the coast.  
B. less water vapor in the desert than at the coast.  
C. lower carbon dioxide levels in the desert than at the coast.  
D. less vegetation in the desert than at the coast.

16. Why are temperatures at the equator higher than at the North and South pole?

- A. the equator has more land so it absorbs more heat  
B. more people live at the equator, creating more greenhouse gases  
C. that's how Mother Nature made it  
D. the equator receives more direct solar radiation and the poles more indirect solar radiation

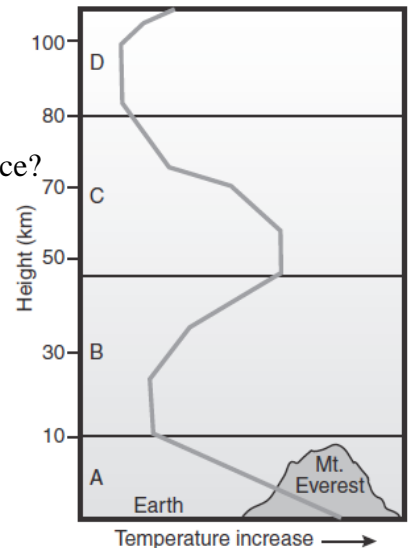
17. Earth's atmosphere is divided into layers that are based upon their

A. water content.      B. relative humidity.    C. gas content. D. temperature gradient.

18. The diagram to the right shows four layers of Earth's atmosphere.

Which of the following correctly labels the layers represented by A, B, C, and D (from Earth moving upward) in the correct sequence?

- A. troposphere, stratosphere, mesosphere, thermosphere
- B. thermosphere, mesosphere, stratosphere, troposphere
- C. troposphere, mesosphere, thermosphere, stratosphere
- D. mesosphere, troposphere, thermosphere, stratosphere



19. According to scientists, which of the following material categories is thought to be the primary cause for the depletion of the ozone layer?

- A. chlorofluorocarbons      B. coal-containing sulfur
- C. fossil fuels      D. hydrocarbons

20. The ozone layer is located in which of the following layers of the atmosphere?

- A. troposphere      B. stratosphere      C. Mesosphere      D. thermosphere

21. Which of the following is NOT a possible consequence of global warming?

- A. more frequent and intense hurricanes      C. reduction in secondary pollutants
- B. rising sea level      D. more frequent and intense droughts

22. Air and ocean currents moving from the poles toward the equator turn west. The primary cause of this global deflection is

- A. the shape and size of land masses.      C. changes in the magnetic field.
- B. larger cities surrounded by farmlands.      D. the rotation of the planet.

23. Because of the Coriolis effect, ocean currents in the Northern Hemisphere are deflected to the \_\_\_\_.

- A. right      B. left      C. north      D. south

24. When comparing temperatures of two California regions of the same latitude, students found that the nighttime temperature dropped significantly at the desert site but only slightly at the coastal site. This difference is mostly caused by

- A. lower wind speeds in the desert than at the coast.
- B. less water vapor in the desert than at the coast.
- C. lower carbon dioxide levels in the desert than at the coast.
- D. less vegetation in the desert than at the coast.

25. The rain shadow effect is associated with \_\_\_\_\_.

- A. oceans
- B. rivers
- C. latitude
- D. mountains

26. What is the relationship between elevation and climate?

- A. The higher the elevation is, the colder the climate.
- B. The lower the elevation is, the colder the climate.
- C. The higher the elevation is, the warmer the climate.
- D. There is no relationship between elevation and climate.

27. Which of the following best explains why temperature decreases as you go up in elevation in the troposphere?

- A. you are getting closer to the sun
- B. the ozone layer absorbs solar radiation
- C. there is less carbon dioxide and water vapor
- D. winds speeds get slower

28. Over the Earth's 4.6 billion year history, climate regions on Earth have changed as a result of

- A. increases and decreases in solar activity
- B. increased lunar gravitational pull
- C. expansion of Neanderthals
- D. the demise of dinosaurs

29. What is the purpose of graphs?

- A. To summarize different amounts of information into one picture.
- B. It's the main way scientists and people can represent numerical data.
- C. It can give a person an idea of how the different variables are affected by one another.
- D. All of the above

30. What can graphs show?

- A. Graphs can show trends
- B. Graphs can show how one thing affects another
- C. Graphs can show relationships and present and predict possibilities for the future.
- D. All of the above

31. Which one of these is not a type of graph?

- A. Bar
- B. Line
- C. Cake
- D. Pie

32.

Which age group watches the most T.V?



- A. 5-9
- B. 10-12
- C. 13-17
- D. None of these

33. If we wanted to view the trend of something which type of graph would make the most sense.

- A. Bar
- B. Line
- C. Pie
- D. Bubble

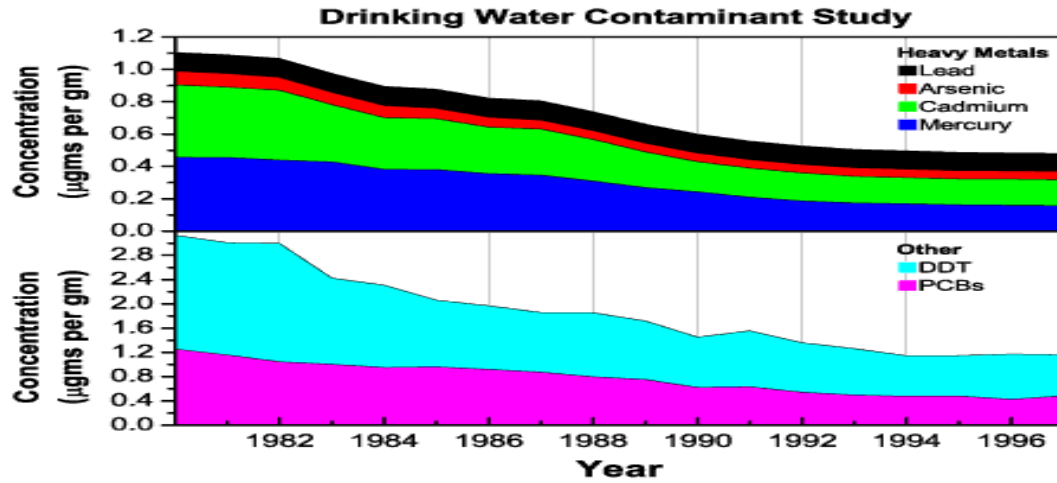
34. If we wanted to compare totals of multiple items which type graph would make the most sense?

- A. Bar
- B. Line
- C. Pie
- D. Area

35. If we wanted to compare percentages which type of graph would make the most sense?

- A. Bar
- B. Line
- C. Pie
- D. Area

36. What kind of Graph is this?

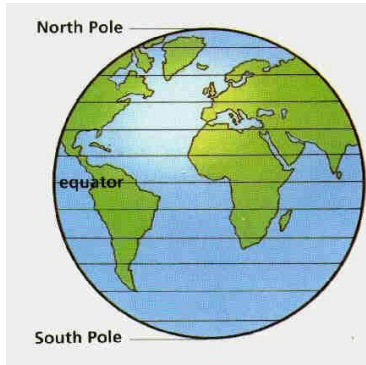


- A. Area                      B. Bar                      C. Pie                      D. Line

37. When interpreting a map what is the key to understanding the symbols on that map?

- A. Title                      B. Key/Legend                      C. Compass Rose                      D. None of these

38. What are the lines on this map called?



- A. Latitude                      B. Longitude                      C. Beatitude                      D. Attitude

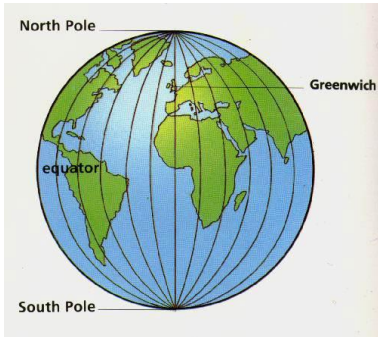
39.  $0^\circ$  Latitude is \_\_\_\_\_.

- A. At the top of the planet                      B. Around the middle of the planet  
C. the Equator                      D. Both B and C

40. What is the name of  $0^\circ$  Longitude called?

- A. Equator                      B. Prime Ticket                      C. Prime Meridian                      D. Prime Rib

41. What are these lines on the map called?



- A. Latitude      B. Longitude      C. Beatitude      D. Attitude

42. What are the coordinates of Phoenix Arizona?



- A. 40°N, 122°W      B. 34°N, 112°W      C. 39°N, 105°W      D. 34°S, 112°E

43. What city is at 36°N, 77°W?

- A. Raleigh      B. Niagara Falls      C. Boston      D. Denver

44. What city is South of 25°N latitude?

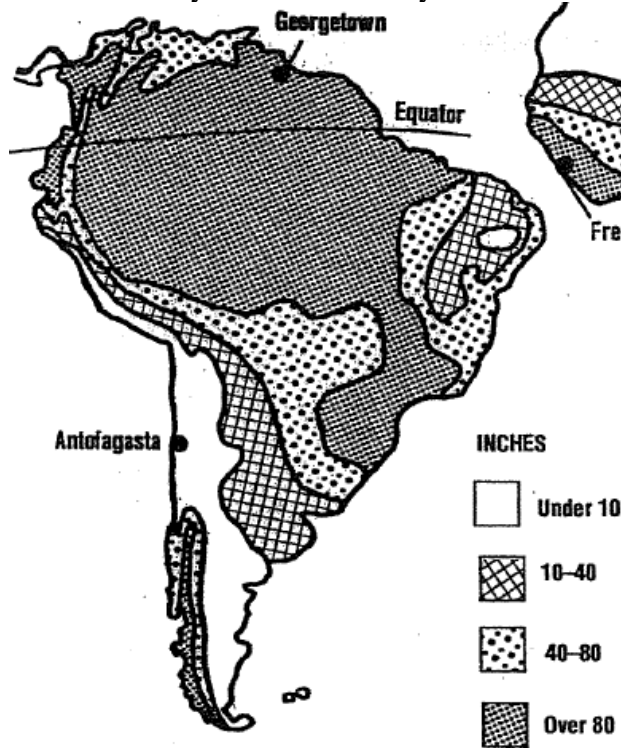
- A. Phoenix      B. Houston      C. Miami      D. Raleigh

45. Which city is west of 120°W longitude?

- A. Denver      B. Portland      C. Miami      D. Boston



46. How many inches of rain a year falls on Georgetown?



A. 40-80 in.      B. Over 80 in.      C. 10-40 in.      D. Under 10 in.

47. Which city receives less than 10 inches of precipitation a year?

A. Equator      B. Georgetown      C. Buenos Aires      D. Antefagasta

48. When citing material on a research assignment which format do you use?

A. MLA      B. PLO      C. CIA      D. FBI

49. When researching using the internet which of these should you not consider?

- A. Using big search engines like Google and Yahoo
- B. Using specific key words in your search
- C. Using educational and professional websites that end in .edu, .gov, or .org
- D. Using a website with broken links and misspelled words

50. What is it called when you use somebody's work but you did not cite it?

A. Burglary      B. Larceny      C. Plagiarism      D. Arson

51. What does the letter stand for in the image below?

Carbon
6
C
12.011

A. Atomic Number    B. Atomic Mass    C. Name    D. Number of Protons

52. What element is represented up above?

A. Corundum    B. Chrome    C. Cobalt    D. Carbon

53. If a substance has high density what statement is most likely if you know the following equation (density=mass/Volume)?

A. The mass would be high    B. The volume would be high  
C. The mass would be low    D. None of these

54. What is the density of a globe if the mass is 20 grams and the volume is 5 cm<sup>3</sup>?

A. 4 g/cm<sup>3</sup>    B. 5 g/cm<sup>3</sup>    C. 10 g/cm<sup>3</sup>    D. 100 g/cm<sup>3</sup>

55. Which unit was not part of the first semester?

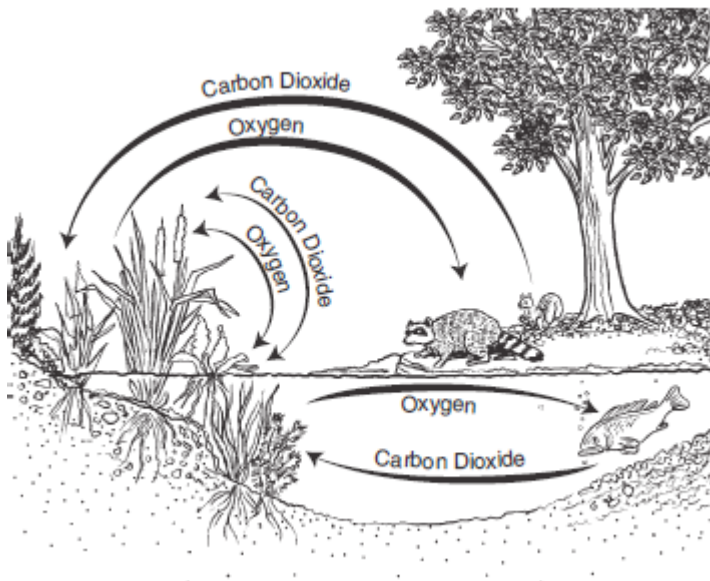
A. Astronomy    B. Climatology    C. Skills    D. Carbon in the Spheres

56. The table below lists the gases coming from a modern Hawaiian volcano. If ancient volcanoes gave off the same gases, which gas would have been *most* helpful in the development of early life-forms that could carry out photosynthesis?

A. N<sub>2</sub>    B. SO<sub>2</sub>    C. CO<sub>2</sub>    D. C<sub>12</sub>

### Analysis of Gases From a Hawaiian Volcano

Gas	Amount
H <sub>2</sub> O (steam)	79%
CO <sub>2</sub>	12%
SO <sub>2</sub>	6.5%
N <sub>2</sub>	1.5%
H <sub>2</sub> , CO, Cl <sub>2</sub> , and Ar	trace



57. Which of these statements is *best* illustrated by this diagram?

- A. Animals under water eat plants.
- B. Land animals exhale oxygen into water.
- C. Water-dwelling animals breathe carbon dioxide.
- D. Plants take in carbon dioxide from air or water.

58. From Earth's atmosphere, carbon dioxide is used by plants, algae, and cyanobacteria during the process of

- A. photosynthesis.
- B. respiration.
- C. decomposition.
- D. nitrogen fixation.

59. Carbon in the atmosphere is *most* often found as which of the following compounds?

- A. stratospheric ozone
- B. fossil fuel
- C. carbon monoxide
- D. carbon dioxide

60. Which of the following processes puts carbon from a forest floor back into the atmosphere?

- A. combustion      B. photosynthesis      C. evaporation      D. transpiration

61. The release of carbon from limestone reservoirs into the atmosphere is *most* often accomplished

- A. by the formation of limestone in shallow seas.  
B. by the destruction of limestone by lichens.  
C. by the formation of stalagmites and stalactites in limestone caves.  
D. by the chemical reaction between limestone and rainwater.

62. Geothermal energy, a possible energy resource, is based on which phenomenon?

- A. There are concentrations of heat in parts of Earth's crust.  
B. Earth's internal energy heats its surface more than the Sun.  
C. Heat energy from the Sun penetrates deep into Earth.  
D. Human activity is the largest source of heat energy on Earth.

63. The burning of fossil fuels would cause which of the following

- A. depletion of the ozone layer      C. a decrease in water pollution  
B. a decrease in atmospheric CO<sub>2</sub>      D. an increase in air quality

64. Which of the following energy sources is *most* likely to be abundant in California due to its position on a plate boundary?

- A. wind      B. nuclear      C. solar      D. geothermal

65. Hydroelectric power is produced by \_\_\_\_.

- A. falling water that turns a turbine  
B. tides that pour through a dam barrier  
C. hot water that comes from deep underground  
D. electric current that flows across a dam

66. Solar energy is clean and sustainable energy, but a major drawback is

- A. sunlight is abundant      C. it's non-renewable  
B. technology and installation are expensive      D. it produces toxic pollution

67. Which of the following gases was NOT part of Earth's original atmosphere?

- A. Nitrogen      B. Carbon dioxide      C. Oxygen      D. Water vapor

68. Evidence suggests that Earth is about 4.6 billion years old, even though no Earth rocks have been found that can be dated at more than 4 billion years old. This discrepancy is *most* likely caused by Earth's original crust being

- A. difficult to date so precisely.
- B. subject to extensive erosion.
- C. blasted away during Earth's formation.
- D. destroyed by solar radiation.

69. Which span of geologic time span covers about 88 percent of Earth's history?

- A. Precambrian
- B. Cenozoic
- C. Mesozoic
- D. Paleozoic

70. What event may have triggered the great Paleozoic extinction (Not the Dinosaurs)?

- A. changes in Earth's orbit
- B. heightened solar activity
- C. meteorite strike
- D. climatic change

71. Most of the molecular oxygen in the early atmosphere of Earth resulted from

- A. photosynthesis in primitive plants.
- B. decaying primitive plants and animals.
- C. volcanic eruptions.
- D. lightning striking Earth.

72. The first atmosphere that formed above Earth was *most* likely due to what process?

- A. eruption of volcanoes
- B. movement of water
- C. development of land plants
- D. occurrence of violent storms

73. What is a feedback of increased amounts of greenhouse gasses in the atmosphere?

- A. Rising Temperatures
- B. Lower Temperatures
- C. Less solar energy reaching the surface
- D. Higher Albedo

74. What is **NOT** a feedback of higher temperatures?

- A. Melting of Sea Ice
- B. Receding glaciers
- C. Increase in CO<sub>2</sub>
- D. More evaporation

75. What is a feedback of melting ice?

- A. Increase in CO<sub>2</sub>
- B. Rising Sea Level
- C. Higher temperatures
- D. Increase of severe droughts