UNIT ONE HOMEWORK

1. The daily conditions in our surroundings, including temperature and rainfall is called:
A) climate
B) weather
C) biome
D) climate zone
E) zonation

2. The climate zone on either side of the equator between 30° north and 30° south latitude is the:
A) tropics
B) temperate zone
C) polar zone
D) arctic zone
E) taiga

3. These winds blow from northeast to southwest in the tropics, they are the:
A) westerlies
B) polar easterlies
C) tradewinds
D) jet stream
E) chinooks

4. About every 10 years the Humboldt current turns warm and creates heavy rain, rough seas and climatic changes. This weather pattern is called:
A) jet stream
B) global warming
C) rain shadow effect
D) El Niño
E) Coriolis Effect

5. The amount of moisture present in the air compared with the amount in fully saturated air at a particular temperature is the:
A) absolute humidity
B) relative humidity
C) vapor pressure
D) partial pressure
E) dew point

6. If the relative humidity is 100% the air is said to be:
A) condensed
B) saturated
C) at dew point
D) a cloud
E) a condensation nuclei

7. In the U.S., what fraction of the freshwater comes from surface water sources (lakes, streams, and rivers)?
A) one-fourth
B) one-third
C) one-half
D) three-fourths
E) all

8. This condition exists when rainfall is 70% below average for a period of 21 days or longer:
A) dry period
B) drought
C) doldrums
D) chinook
E) continental low

9. Water from toilets is called:
A) clear water
B) black water
C) gray water
D) brown water
E) potable water

10. One of the most promising and sustainable approaches to reduce flooding is:
A) streambed channelization
B) dams
C) watershed management
D) levees
E) removing wetlands

11. This law allows for the establishment of national marine sanctuaries:
A) Coastal Zone Management Act
B) National Wildlife Refuge System
C) Wilderness Act
D) Clean Water Act
E) Coastal Barrier Resources Act

12. This law provides protection of rivers from development:
A) Wilderness Act
B) Wild and Scenic Rivers Act
C) Clean Water Act
D) National Environmental Policy Act
E) Coastal Barrier Resources Act

13. About __% of the earth's surface is land.
A) 25
B) 29
C) 75
D) 80
E) 95

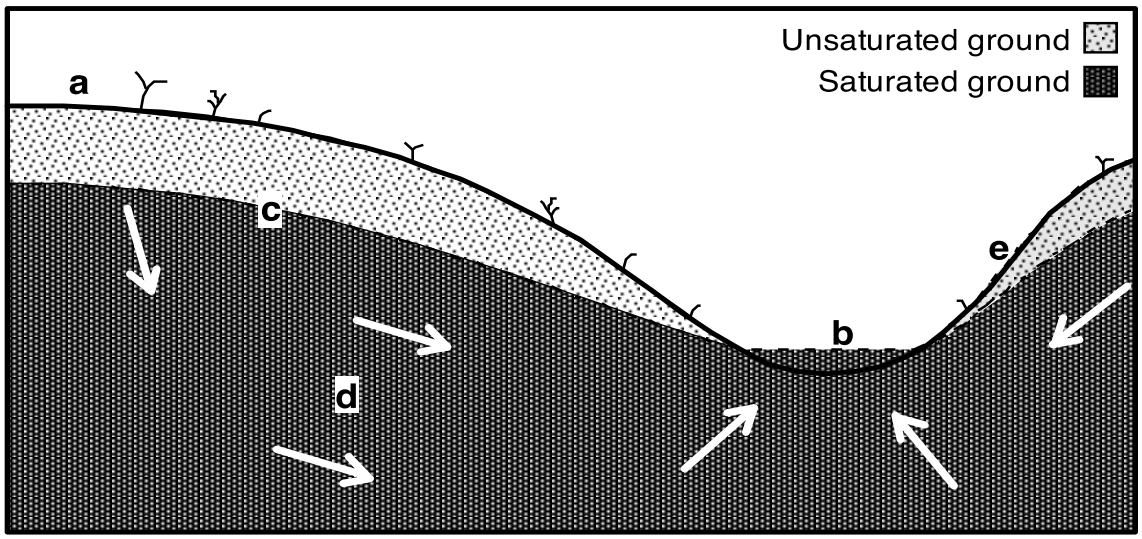
14. This oxygen containing molecule is one of the most prevalent chemicals in photochemical smog and is involved in absorption of ultraviolet radiation:
A) carbon dioxide
B) nitrous oxide
C) ozone
D) sulfuric acid
E) nitric acid

15. To be considered a _____, it must have sustained winds of at least 74 mph (119 km/hr).
    a) hurricane
    b) tsunami
    c) tornado
    d) paltroon
    e) wildfire

16. The Saffir-Simpson scale is a 1-5 rating of the intensity of a:
    a) earthquake
    b) tornado
    c) volcanic eruption
    d) drought
    e) hurricane

17. Local water-management strategy that may include surface water, groundwater, desalination, or other supplies, depending on present and future water needs:
    a) overdraft
    b) water budget
    c) influent streams
    d) variable-source approach
    e) wetlands

USE THE DIAGRAM BELOW TO ANSWER THE FOLLOWING QUESTIONS



18. In the figure above, which of the labeled points (a, b, c, d, or e) identifies the discharge zone?

a) a
b) b
c) c
d) d
e) e

19. The stream illustrated in the figure above is an example of:

a) an influent stream
b) an effluent stream
c) a perennial stream
d) instream use
e) an ephemeral stream

20. Which of the following effects can be associated with groundwater overdraft:

a) raising of the water table
b) uplift of the land surface
c) salt water intrusion
d) global warming
e) acid mine drainage

21. What is the most easily accessible supply of fresh water in most locations around the world?

a) surface water
b) groundwater
c) treated wastewater
d) ocean water
e) drinking water

22. How does air temperature change with altitude in the upper stratosphere and why?

a) it decreases due to the presence of water vapor
b) it decreases or increases, depending on the time of day
c) it increases, due to the destruction of ozone by ultraviolet light
d) it increases due to the greenhouse effect
e) it is isothermal, due to loss of earthshine to space

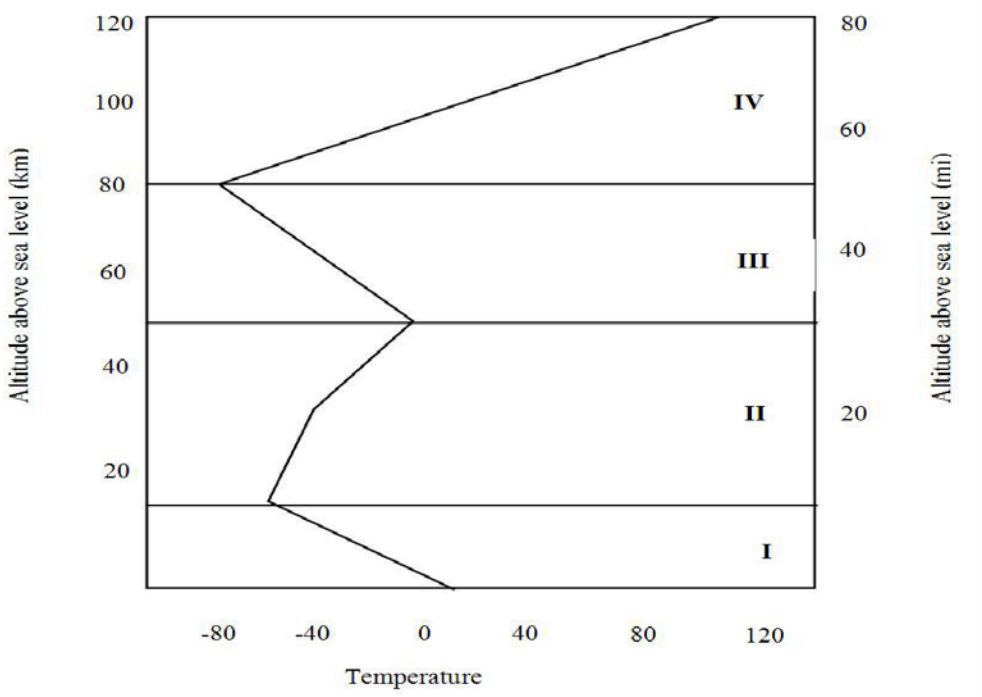
23. In the lower atmosphere, ozone is produced by:

a) photochemical reactions
b) emissions from coal plants
c) ultraviolet-B radiation
d) oxidation of CO_2
e) reduction of natural hydrocarbons

24. The two main gases making up the lower atmosphere are
A. helium and hydrogen.
B. carbon dioxide and nitrous oxide.
C. oxygen and methane.
D. nitrogen and oxygen.
E. oxygen and carbon dioxide

25. The different layers of the atmosphere are kept from mixing by
A. sharp temperature boundaries.
B. contrasting gas compositions.
C. the extreme stillness within each layer.
D. physical barriers composed of thick layers of atmospheric dust.
E. sharp density boundaries.

26. The "ozone hole" that causes concern among scientists and the public is an ozone depletion in the
A. troposphere.
B. stratosphere.
C. thermosphere.
D. mesosphere.
E. tropopause.



27. Heat in the atmosphere comes from
A. radioactive decay of gas particles.
B. radioactive decay of elements in the Earth.
C. gravitational pressure on air molecules.
D. solar radiation.
E. friction of the gas particles moving against each other.

28. Eventually all the energy that reaches the Earth's surfaces is
A. absorbed into the Earth.
B. turned into biomass.
C. used in heating.
D. reflected or radiated back to space.
E. dissipated within the Earth's atmosphere

29. Much of the ultraviolet light from the sun is absorbed by _____ as it passes through the atmosphere.
A. carbon dioxide
B. water vapor
C. nitrogen gas
D. ozone
E. green house gases

30. When an area of the Earth's surface becomes very hot, the air above it
A. condenses and cools.
B. warms, expands, and rises.
C. warms, condenses, and releases rain.
D. expands and sinks.
E. condenses and sinks

31. When cool, dry air sinks from the upper atmosphere toward the Earth's surface, it is
A. compressed and cooled further.
B. allowed to expand and become warmer.
C. compressed and becomes warmer.
D. forced to release any remaining moisture.
E. going to hold more water because there is more water vapor closer to the Earth's surface.

32. Monsoons occur over India when air heated over the Indian subcontinent and the Indian Ocean
A. is forced to rise because of convection.
B. is forced to rise when it meets the Himalayas.
C. begins to sink as summer approaches.
D. cools in the winter and therefore sinks.
E. is forced out over the Indian Ocean.

33. A westward flowing wind is called a(n) _____ due to the direction _____.
A. east wind, it is blowing
B. east wind, from which it originates
C. west wind, it is blowing
D. west wind, from which it originates
E. west wind, it blows things

34. Hurricanes are powered by
A. the hydrologic cycle.
B. rising air masses.
C. sinking air masses.
D. heat released from condensing water vapor.
E. subtropical jet streams coupled with convection currents.

35. When El Niño occurs every three to seven years, a mass of warm Pacific water that is usually pushed westward by trade winds
A. surges back eastward toward South America.
B. becomes much warmer than usual, strengthening trade winds.
C. cools dramatically.
D. sinks and therefore cools substantially.
E. surges northward toward Japan.

36._____ ozone is harmful, damaging plants and human health while ozone at the _____ level screens out mutagenic ultraviolet radiation.
A. Stratospheric; troposphere
B. Thermospheric; mesosphere
C. Tropospheric; stratosphere
D. Mesospheric; thermosphere
E. Stratospheric; mesosphere

37. The total amount of water on the Earth _____ from year to year and the hydrologic cycle_____.
A. stays about the same; moves it from one place to another place
B. increases; captures it from the incoming solar radiation
C. increases; gains water from the Earth's interior
D. decreases; moves it from one place to another place
E. decreases; loses water to the atmosphere

38. Transpiration is the way plants
A. return large amounts of water to the atmosphere.
B. absorb water from the atmosphere.
C. absorb water from the ground.
D. return large amounts of water from the atmosphere to the ground.
E. respire using water.

39. Evaporation is
A. the way plants absorb water.
B. liquid water turning to vapor well below boiling temperature.
C. liquid water boiling to produce water vapor.
D. the way water seeps into the ground.
E. the process of water becoming a liquid at a lower temperature.

40. The process of _____ explains why your ice cubes shrink when they have been left in the freezer for a long time.
A. evapotranspiration.
B. evaporation.
C. disintegration.
D. sublimation.
E. transpiration

41. The amount of water vapor that air can hold _____. Warm air is able to hold _____ humidity when compared to _____ air.
A. varies greatly; more; cold
B. varies greatly; more; hot
C. changes sometimes; less; cold
D. stays about the same; the same; cold
E. stays about the same; the same; hot

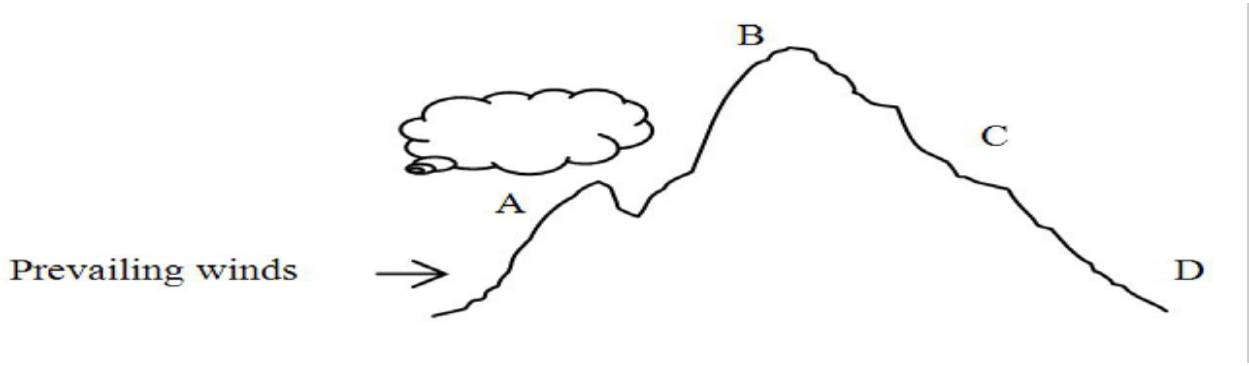
42. Saturation point is the maximum amount of water vapor that
A. can be added to a certain volume of air.
B. air at a certain temperature can hold.
C. air can give up if it cools 5 degrees.
D. a certain amount of solar heat can evaporate.
E. air can give up if it cools 5 degrees.

43. Relative humidity is a measure of water vapor in air compared to the
A. maximum vapor air can hold.
B. average vapor that air holds.
C. maximum vapor air can hold at that temperature.
D. maximum vapor that volume of air can hold.
E. minimum vapor air can hold at that temperature.

44. Condensation is the process of water molecules
A. aggregating when the saturation point is exceeded.
B. aggregating when temperatures rise.
C. aggregating from solid to gaseous form.
D. disaggregating with an input of solar heat.
E. disaggregating from solid to gaseous form.

45. The dew point is
A. another word for relative humidity.
B. the temperature at which a certain concentration of water vapor will begin to condense.
C. the temperature at which rain will turn to snow.
D. the humidity level that a certain temperature of air can hold without producing condensation.
E. the temperature at which snow will turn to rain.

46. Condensation nuclei such as smoke or dust can make water vapor
A. less dense.
B. evaporate more easily.
C. reach dew point more slowly.
D. condense more easily.
E. condense less easily.



47. Air moving in the direction indicated in the diagram above will become warmer as it moves from
A. B to D.
B. A to B.
C. C to A.
D. D to A.
E. B to A.

48. Air moving in the direction indicated in the diagram above will become dryer as it moves from
A. B to D.
B. A to B.
C. C to A.
D. D to A.
E. B to A.

49. Water enters groundwater by
A. infiltration.
B. entering the runoff stream.
C. transpiration.
D. interception.
E. sublimation.

50. The zone of saturation is the portion of groundwater where
A. water vapor turns to liquid.
B. an aquifer is deepest.
C. all soil or rock pore spaces are filled with water.
D. all soil or rock pore spaces are filled with air.
E. the water table ends.

51. The amount of water in aquifers in the United States is
A. nearly as great as the amount of surface water in the United States.
B. higher than all the Great Lakes together.
C. only a small portion of surface water in the United States.
D. over thirty times greater than all surface water in the United States.
E. about the same amount as all surface water in the United States.

52. Which of the following factors is the most important factor in determining whether a country is "water rich" or "water poor"?
A. Population density
B. Country size
C. Humid climate
D. Rivers running through the country
E. Renewable water supplies

53. The United States has a drought cycle that brings dry periods about every ____ years.
A. 100
B. 60
C. 30
D. 10
E. 5

54. Withdrawal is the total amount of water
A. lost in transmission, due to evaporation or leakage.
B. taken from rivers, lakes or aquifers.
C. used in manufacturing or agriculture.
D. altered or polluted in human activities.
E. lost due to chemical transformation because of human use.

55. Technically speaking, when water is consumed it
A. has been used.
B. is no longer suitable for any other purpose.
C. is no longer available for other purposes.
D. is lost to evaporation or leakage.
E. is available for other uses.

56. In general, water use in poor countries is dominated by
A. agricultural use.
B. domestic needs.
C. industrial activities.
D. use as drinking water.
E. nuclear power.