

Name: _____

Date: _____

Period: ____

Atmosphere

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- ____ 1. Earth's atmosphere contains more ____ than any other substance.
a. hydrogen and nitrogen **c. nitrogen and oxygen**
b. helium and oxygen d. carbon and nitrogen
- ____ 2. ____ can act as a lid or trap, thus worsening air-pollution problems.
a. Temperature inversions c. Lifted condensation levels
b. Relative humidity d. Convection currents
- ____ 3. An air mass that has high ____ resists rising.
a. moisture **c. stability**
b. density d. heat
- ____ 4. Cloud droplets collide to form larger droplets in a process called ____.
a. coalescence c. condensation
b. convection d. composition
- ____ 5. What is the constant movement of water between the atmosphere and Earth's surface?
a. precipitation cycle c. cloud cycle
b. water cycle **d. atmosphere cycle**
- ____ 6. Low-pressure systems are usually associated with ____ weather.
a. cold and dry c. sunny and dry
b. cloudy and rainy d. warm and humid
- ____ 7. A(n) ____ forecast involves comparing current weather patterns to patterns that took place in the past.
a. real-time **c. analog**
b. digital d. comparative
- ____ 8. Whether the day will be rainy or dry can be predicted somewhat accurately by a long-term forecast at the ____ range.
a. one- to two-month **c. one- to three-day**
b. four- to seven-day d. one- to two-week
- ____ 9. A weather instrument that measures the height of clouds and estimates the amount of cloud cover is a(n) ____.
a. hygrometer **c. ceilometer**
b. anemometer d. barometer
- ____ 10. A balloon-borne package of sensors that gathers upper-level temperature, air pressure, and humidity is ____.
a. a radiosonde c. a hygrometer
b. a satellite d. Doppler radar
- ____ 11. Differences in thermal energy can be detected with ____.
a. ultraviolet imagery **c. infrared imagery**
b. visible light d. sonar imagery
- ____ 12. The exchange of heat or moisture with the surface over which an air mass travels is known as ____.
a. intertropical convergence c. occlusion
b. air mass modification d. air mass exchange
- ____ 13. A(n) ____ thunderstorm forms because of unequal heating of Earth's surface within one air mass.
a. frontal mass **c. air mass**
b. cold front d. air pressure

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- ____ 14. The rising, moist updrafts and the falling, cool downdrafts form a convection cell that produces the ____ associated with thunderstorms.
- a. temperatures
 - b. thunder
 - c. humidity
 - d. **gusty surface winds**
- ____ 15. Very severe thunderstorms can form when a ____ has a large continuous supply of warm air to lift and condense.
- a. **cold front**
 - b. warm air mass
 - c. warm front
 - d. tornado
- ____ 16. When friction between updrafts and downdrafts within a cumulonimbus cloud creates regions of air with opposite charges, ____ forms.
- a. warm air
 - b. **lightning**
 - c. precipitation
 - d. ozone
- ____ 17. ____ are often associated with very severe thunderstorms called supercells.
- a. **Tornadoes**
 - b. Sea breezes
 - c. Hurricanes
 - d. Heat waves
- ____ 18. A mound of water driven toward coastal areas by hurricane winds is called a ____.
- a. cyclone
 - b. supercell
 - c. **storm surge**
 - d. cold front
- ____ 19. An extended period of well-below-normal rainfall is a ____.
- a. flood
 - b. drought
 - c. heat wave
 - d. tropical cyclone
- ____ 20. The phenomenon in which the effects of cold air are worsened by wind is the ____.
- a. supercell
 - b. sea breeze
 - c. **wind chill factor**
 - d. cold wave
- ____ 21. In addition to average weather conditions, climatological data also describes annual variations and fluctuations of temperature, precipitation, ____, and other variables.
- a. cloud height
 - b. **wind speed**
 - c. ocean temperature
 - d. soil moisture
- ____ 22. The following are true about climatological normals EXCEPT:
- a. They represent the standard values for a location.
 - b. They are averaged on a monthly or annual basis.
 - c. **They describe normal weather conditions.**
 - d. The information applies only to the place where the data were collected.
- ____ 23. A widely used climate classification system is the ____ system.
- a. Maunden
 - b. Topographic
 - c. **Koepfen**
 - d. Korten
- ____ 24. Studies indicate that periods of low sunspot activity, like the ____, correspond to unusually cold climate conditions.
- a. **Maunder minimum**
 - b. Maunder ice age
 - c. Maunder divide
 - d. Maunder maximum
- ____ 25. The burning of fossil fuels releases large amounts of ____ into the atmosphere, which contributes to global warming.
- a. carbon monoxide
 - b. calcium carbonate
 - c. **carbon dioxide**
 - d. sulfur dioxide
- ____ 26. Types of climate data include annual variations in temperature, precipitation, and ____.
- a. air pollution
 - b. water cycle
 - c. **wind**
 - d. topography

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- ____ 27. When moist winds approach a mountain, they often drop rain as they rise over the mountain, and come down the other side of the mountain much ____.
- a. cooler and drier
 - b. cooler and wetter
 - c. **warmer and drier**
 - d. warmer and wetter
- ____ 28. The climatic zone that receives the least solar radiation and has the coldest climate is the ____.
- a. **polar zone**
 - b. tropical zone
 - c. equatorial zone
 - d. temperate zone
- ____ 29. Which group consists only of nonrenewable resources?
- a. carbon, sunlight, water, aluminum
 - b. coal, trees, water, carbon
 - c. phosphorus, soil, water, oxygen
 - d. **natural gas, peat, coal, oil**
- ____ 30. About 80 percent of the freshwater used for ____ is wasted.
- a. **irrigating crops**
 - b. cooking and cleaning
 - c. cooling power plants
 - d. industrial processing
- ____ 31. It can take almost 500 years to create 1 cm of ____.
- a. aggregate
 - b. **topsoil**
 - c. ore
 - d. bedrock
- ____ 32. The mixture of gravel, sand, and crushed stone called ____ is an extremely useful construction material.
- a. **aggregate**
 - b. bedrock
 - c. ore
 - d. topsoil
- ____ 33. Sand and gravel ____ remove impurities from water supplies.
- a. **filters**
 - b. concrete mixtures
 - c. crystals
 - d. ores
- ____ 34. Which of the following does NOT require the Sun's energy?
- a. the production of gasoline
 - b. photosynthesis
 - c. keeping warm in cold climates
 - d. **All of the above require the Sun's energy.**
- ____ 35. Coal-fired electric generation plants commonly lose more than ____ of their energy as wasted heat.
- a. one-third
 - b. one-half
 - c. one-fourth
 - d. **two-thirds**