

Meteorology Test

Name:

1. The sun's rays are strongest or most direct around the (1.) North Pole (2.) South Pole (3.) Equator (4.) Atlantic Ocean
2. Air currents develop when cool air sinks and forces (1.) other cool air to move (2.) warm air somewhere else to rise (3.) a high-pressure area to move (4.) a low-pressure area to move
3. The most violent kind of storm is a(n) (1.) thunderstorm (2.) fog (3.) tornado (4.) air current
4. Radiation from the sun is (1.) all reflected into space by the atmosphere (2.) all absorbed by the earth's surface (3.) all reflected into space by the earth's surface (4.) partially absorbed and partially reflected by both the atmosphere and the earth's surface
5. The main source of energy for the atmosphere is the (1.) the Sun (2.) tides (3.) the moon (4.) radioactivity
6. _____ is the transfer of heat due to density differences in air. (1.) Conduction (2.) Convection (3.) Reflection (4.) Reduction
7. The planetary wind system results from (1.) the rotation and uneven heating of the earth (2.) different climates in different regions (3.) the sun and tides (4.) local winds
8. Acid rain is chiefly due to the pollutants (sulfur and nitrogen oxides) combining in the atmosphere with (1.) carbon dioxide (2.) water vapor (3.) oxygen (4.) nitrogen
9. Ash and dust thick enough to block the sun's rays around the world can be added to the atmosphere by (1.) volcanic eruptions (2.) acid rain (3.) a nuclear reactor (4.) plant pollens
10. Oxygen is added to the atmosphere by (1.) respiration and burning (2.) respiration, only (3.) burning and photosynthesis (4.) photosynthesis, only
11. The ozone layer absorbs (1.) smog (2.) microwaves (3.) ultraviolet radiation (4.) infrared radiation
12. The atmosphere is made up mainly of (1.) nitrogen and carbon dioxide (2.) nitrogen and water vapor (3.) nitrogen and oxygen (4.) oxygen and argon
13. A barometer is an instrument that can be used to measure (1.) humidity (2.) air pressure (3.) temperature (4.) cloudiness

14. Which of the following statements about burning is **FALSE**? (1.) It adds oxygen to the atmosphere. (2.) It adds carbon dioxide to the atmosphere. (3.) It is the major source of air pollutants. (4.) It removes oxygen from the atmosphere.
15. Cool, dry weather is usually accompanied by (1.) low air pressure (2.) high air pressure (3.) high relative humidity (4.) precipitation
16. A drop in air pressure usually indicates that the (1.) approaching weather is cool and dry (2.) weather will remain unchanged (3.) approaching weather is cloudy or rainy (4.) air temperature is falling
17. With decreasing air pressure, air temperature usually (1.) remains the same (2.) decreases (3.) increases
18. A wind that comes from the east is a(n) (1.) east wind (2.) west wind (3.) south wind (4.) north wind
19. Wind speeds are affected by (1.) ocean waves (2.) relative humidity (3.) differences in air pressure from one place to another (4.) cloud types
20. Precipitation occurs when (1.) air pressure rises (2.) water drops in clouds grow large enough to fall (3.) there are southwest winds (4.) an air mass is in place
21. The amount of water vapor in the air is described in terms of (1.) relative humidity (2.) cloud cover (3.) atmospheric pressure (4.) temperature
22. Which is **NOT** used in **weather prediction**? (1.) weather maps (2.) radar (3.) satellite photographs (4.) air pollution levels
23. High pressure areas generally move across the United States from (1.) north to south (2.) west to east (3.) east to west (4.) south to north
24. The temperature and moisture of an air mass are determined by (1.) its size and shape (2.) its rate of movement (3.) the area over which it is formed (4.) its direction of movement
25. The boundary between two air masses is a(n) (1.) high-pressure area (2.) climate (3.) atmosphere (4.) front
26. The wind direction in a high pressure area is (1.) north to south (2.) east to west (3.) clockwise (4.) counterclockwise
27. Clear, cool weather is generally found (1.) in high pressure areas (2.) in low pressure areas (3.) at fronts (4.) in areas with no wind

28. Two forms of precipitation are (1.) rain and snow (2.) wind and sun (3.) wind and rain (4.) snow and wind
29. Weather occurs in the layer of the atmosphere (1.) closest to the earth's surface (2.) farthest from the earth's surface (3.) over the oceans (4.) over the continents
30. Molecules in hotter objects move _____ those in cooler objects.
(1.) more rapidly (2.) more slowly (3.) at the same rate as (4.) away from
31. Water vapor will condense from air when the air is (1.) humid (2.) temperate (3.) dry (4.) saturated
32. A large body of air that has the same properties as the area over which it formed is a(n) (1.) air mass (2.) station model (3.) front (4.) isotherm
- 33.. A cloud is made up of (1.) minerals (2.) drops of water (3.) water vapor (4.) gases
34. Which of the following processes releases energy back to the earth? (1.) melting (2.) vaporization (3.) evaporation (4.) condensation
35. Which is changed as air masses move across the earth's surface? (1.) seasons (2.) local conditions (3.) climate (4.) amount of daylight
36. A _____ is a large, swirling tropical storm. (1.) thunderstorm (2.) tornado (3.) hurricane (4.) monsoon
37. A(n) _____ is a boundary between air masses. (1.) isobar (2.) front (3.) station model (4.) wind shear
38. Water is returned to the earth's surface by (1.) evaporation (2.) precipitation (3.) sublimation (4.) wind
39. Which is NOT an element of weather? (1.) humidity (2.) season (3.) temperature (4.) air pressure
40. _____ forms most clouds and the precipitation that falls from them. (1.) Carbon dioxide (2.) Water vapor (3.) Humidity (4.) Relative humidity
41. Which statement best describes weather changes?
(1.) Weather changes are usually abrupt. (2.) Weather changes occur only in the morning. (3.) Weather changes tend to occur gradually because Highs are large and tend to move and change slowly. (4.) Weather changes occur only when the seasons change.
42. _____ refers to the present state of the atmosphere. (1.) Climate (2.) Weather (3.) Humidity (4.) Dew point

43. A(n) _____ front develops when a less dense, warm air mass slides over a departing cold air mass. (1.) warm (2.) cold (3.) occluded (4.) stationary
44. With which type of front is a narrow band of violent storms most often associated? (1.) warm (2.) cold (3.) occluded (4.) stationary
45. _____ occurs when a rapid uplift of air builds up electric charges in the clouds. (1.) Lightning (2.) Wind shear (3.) Tornadoes (4.) Hurricanes
46. Ocean waves are caused mainly by (1.) ships (2.) rain (3.) wind (4.) earthquakes
47. High pressure systems bring (1.) clear skies and fair weather (2.) rain (3.) heavy cloud cover (4.) violent storms
48. The process in which water moves between the earth's surface and the atmosphere is called (1.) the water cycle (2.) condensation (3.) weathering (4.) erosion
49. The change of substance state from water vapor to liquid water is called (1.) sublimation (2.) evaporation (3.) freezing (4.) condensation
50. The main greenhouse gas in our atmosphere is (1.) helium (2.) carbon dioxide (3.) hydrogen (4.) oxygen
51. Which is NOT used to describe climate? (1.) air temperature (2.) winds (3.) moisture (4.) energy use
52. The climate of a region describes the (1.) season-to-season weather (2.) day-to-day weather change (3.) storm tracks of the region (4.) wind patterns of the region
53. Which is NOT true of climatic regions? (1.) Large bodies of nearby water modify air temperatures. (2.) Nearby mountains act as barriers. (3.) Air temperatures tend to decrease with altitude. (4.) Air pressure rarely changes.
54. The latitude that receives the most direct rays of the sun throughout the year is (1.) 60°N (2.) 90°N or S (3.) 30°S (4.) 0°
55. _____ is an area's average weather over a long period. (1.) A season (2.) Temperature (3.) Climate (4.) A temperate zone
56. We help reduce the global warming problem when we (1.) conserve energy (2.) burn coal (3.) produce methane (4.) remove trees
57. Which can affect climate? (1.) mountains (2.) large bodies of water (3.) large cities (4.) All of the above choices are correct.

58. As you climb a mountain, the (1.) temperature tends to decrease
(2.) temperature tends to increase (3.) air pressure increases
(4.) air pressure remains constant

In the section of this examination which follows,
identify each of the following statements as being TRUE or FALSE.

1. Climate describes short term changes in the variables of the atmosphere.
2. Cold front are where a warm air mass moves in to replace a colder one.
3. Air masses play a very limited role in determining the weather of New York State.
4. Low pressure areas rarely form along fronts.
5. Changes in air pressure are important indicators of passing highs and lows.
6. Abrupt changes in weather elements rarely occur across fronts.
7. Warmer air holds less water vapor than colder air.
8. The only way water can enter the atmosphere is by leaving the leaves of plants.
(transpiration)
9. Cold air is more dense than warm air.
10. The uneven distribution of energy in our atmosphere is the primary cause of weather.
11. Condensation may result in the formation of clouds, fog, and dew.
12. Air masses cause no change in local conditions as they move over the earth's surface.
13. Weather elements include temperature, humidity, wind direction and speed, air pressure, solar radiation, cloudiness, and precipitation.
14. The chief goal of weather forecasting is to make an accurate prediction of future weather.
15. Low pressure areas often bring stormy weather.
16. Weather near a large body of water is warmer in the Summer and colder in the Winter than the surrounding land area.