KEEP YOUR EARTH SCIENCE REFERENCE TABLES NEARBY AT ALL TIMES!

1.
When minerals are dissolved, how are the resulting ions carried by rivers?

A. by precipitation
B. by tumbling and rolling
C. in suspension
D. in solution

2.
One reason *Tetragraptus* is considered a good index fossil is that *Tetragraptus*

A. existed during a large part of the Paleozoic Era
B. has no living relatives found on Earth today
C. existed over a wide geographic area
D. has been found in New York State

3.
What is the origin of fine-grained igneous rock?

A. lava that cooled slowly on Earth's surface
B. lava that cooled quickly on Earth's surface
C. silt that settled slowly in ocean water
D. silt that settled quickly in ocean water

4.
The explosion associated with the Big Bang theory and the formation of the universe is inferred to have occurred how many billion years ago?

A. less than 1
B. 2.5
C. 4.6
D. over 10

5.
Which group of elements is listed in increasing order based on the percent by mass in Earth's crust?

A. aluminum, iron, calcium
B. aluminum, silicon, magnesium
C. magnesium, iron, aluminum
D. magnesium, silicon, calcium

6.
Which is a cyclic change?

A. the decay of a radioactive substance
B. the extinction of a species
C. the movement of Earth's crust during an earthquake.
D. Earth's daily rotation

7.
Which type of land surface would probably reflect the most incoming solar radiation?

A. light colored and smooth
B. light colored and rough
C. dark colored and smooth
D. dark colored and rough

8.
Which object in our solar system has the greatest density?

A. Jupiter
B. Earth
C. the Moon
D. the Sun

9.
The primary method of energy transfer by which Earth loses energy to outer space is

A. transpiration
B. radiation
C. convection
D. conduction

10.
Most rock gypsum is formed by the

A. heating of previously existing foliated bedrock
B. cooling and solidification of lava
C. compaction and cementation of shells and skeletal remains
D. chemical precipitation of minerals from seawater

11.
An air mass originating over north central Canada would most likely be

A. warm and dry
B. warm and moist
C. cold and dry
D. cold and moist

12.
The size of the mineral crystals found in an igneous rock is directly related to the

A. density of the minerals
B. color of the minerals
C. cooling time of the molten rock
D. amount of sediments cemented together

13.
A layer of volcanic ash may serve as a time marker because the ash is

A. generally deposited only on land
B. composed of index fossils
C. deposited rapidly over a large area
D. often a distinct color

14.
Which mineral is the major component of drywall?

A. talc
B. calcite
C. muscovite mica
D. selenite gypsum

15.
The apparent change in direction of a swinging Foucault pendulum is the result of the

A. rotation of Earth
B. revolution of Earth
C. tilt of Earth's axis
D. shape of Earth's orbit

16.
The Milky Way galaxy is best described as

A. a type of solar system
B. a constellation visible to everyone on Earth
C. a region in space between the orbits of Mars and Jupiter
D. a spiral-shaped formation composed of billions of stars

17.
Near the end of which era did the dinosaurs become extinct?

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

18.
Where is precipitation most likely to occur?

A. near the frontal surface between two air masses.
B. in descending air currents
C. on the leeward slopes of mountains
D. near the center of a high-pressure system

19.
Compared to an inland location, a location on an ocean shore at the same elevation and latitude is likely to have

A. cooler winters and cooler summers
B. cooler winters and warmer summers
C. warmer winters and cooler summers
D. warmer winters and warmer summers

20.
Approximately how many hours of daylight are received at the North Pole on June 21?

A. 0 C. 18
B. 12 D. 24

21.
The apparent rising and setting of the Sun, as viewed from Earth, is caused by

A. Earth's rotation
B. Earth's revolution
C. the Sun's rotation
D. the Sun's revolution

22.
A prediction about an event that is changing Earth's surface can best be made if

A. an instrument is used in making one observation
B. the event is noncyclic
C. observations have been made over a long period of time
D. the event has not occurred in the past

23.
The cyclic rise and fall of ocean tides on Earth is primarily caused by Earth's rotation and the

A. temperature differences in ocean currents
B. revolution of Earth around the Sun
C. direction of Earth's planetary winds
D. gravitational attraction of the Moon and the Sun

24.
A map of the large-scale features of the entire continent of North America could best be obtained by using

A. a telescope in Ohio
B. a satellite image
C. a photograph from an airplane
D. land-based surveying instruments

25.
The best evidence that a sedimentary rock found on the eastern shore of Lake Erie is the same age as a rock found 500 miles east of Lake Erie would be their similarity in

A. mineral composition
B. index fossil content
C. color
D. grain size

26.
Which of the following sediment sizes can a stream flowing at a velocity of 5 centimeters per second transport?

A. clay, only
B. silt and clay, only
C. sand, silt, and clay, only
D. pebbles, sand, silt, and clay

27.
Which features are commonly formed at the plate boundaries where continental crust converges with oceanic crust?

A. large volcanic mountain ranges parallel to the coast at the center of the continents
B. a deep ocean trench and a continental volcanic mountain range near the coast
C. an underwater volcanic mountain range and rift valley on the ocean ridge near the coast
D. long chains of mid-ocean volcanic islands perpendicular to the coast

28.
Under which set of atmospheric conditions does water usually evaporate at the fastest rate?

A. warm temperatures, calm winds, and high humidity
B. warm temperatures, high winds, and low humidity
C. cold temperatures, calm winds, and low humidity
D. cold temperatures, high winds, and high humidity

29.
Which two gases in Earth's atmosphere are believed by scientists to be greenhouse gases that are major contributors to global warming?

A. carbon dioxide and methane
B. oxygen and nitrogen
C. hydrogen and helium
D. ozone and chlorine

30.
On which date does the maximum duration of insolation occur in the Northern Hemisphere?

A. March 21
B. June 21
C. September 23
D. December 21

31.
Most water vapor enters Earth's atmosphere by the processes of

A. condensation and precipitation
B. radiation and cementation
C. conduction and convection
D. evaporation and transpiration

32.
What is Earth's inferred interior pressure, in millions of atmospheres, at a depth of 3500 kilometers?

A. 1.9
B. 2.8
C. 5500
D. 6500

33.
Oxygen is the most abundant element by volume in Earth's

A. inner core
B. troposphere
C. hydrosphere
D. crust

34.
Based on the theory of plate tectonics, it is inferred that over the past 250 million years North America has moved toward the

A. northwest
B. southwest
C. southeast
D. northeast

35.
Which of these characteristics identify an Earth surface that is likely to be the best absorber of insolation?

A. light colored and smooth
B. light colored and rough
C. dark colored and smooth
D. dark colored and rough

36.
Earth's troposphere, hydrosphere, and lithosphere contain relatively large amounts of which element?

A. iron
B. oxygen
C. hydrogen
D. potassium

37.
Convection currents in the plastic mantle are believed to cause divergence of lithospheric plates at the

A. Peru-Chile Trench
B. Mariana Trench
C. Canary Islands Hot Spot
D. Iceland Hot Spot

38.

The relative hardness of a mineral can best be tested by

A. scratching the mineral across a glass plate

B. squeezing the mineral with calibrated pliers

C. determining the density of the mineral

D. breaking the mineral with a hammer

39.

Which ocean current transports warm water away from Earth's equatorial region?

A. Brazil Current

B. Guinea Current

C. Falkland Current

D. California Current

40.

Which statement best describes the age of our solar system and the universe?

A. The universe is at least twice as old as our solar system.

B. Our solar system is at least twice as old as the universe.

C. Our solar system and the universe are estimated to be 5 billion years old.

D. Our solar system and the universe are estimated to be 10 billion years old.

41.

Which event is the best example of erosion?

A. breaking apart of shale as a result of water freezing in a crack

B. dissolving of rock particles on a limestone gravestone by acid rain

C. the deepening of a stream bed by pebbles rolling along the bottom of the stream

D. crumbling of bedrock in one area to form soil

42.

The particles in a sand dune deposit are small and very well-sorted and have surface pits that give them a frosted appearance. This deposit most likely was transported by

A. ocean currents

B. glacial ice

C. gravity

D. wind

43.

How many days are required for the Moon to go from one full-Moon phase to the next full-Moon phase when viewed from Earth?

A. 24

B. 27.3

C. 29.5

D. 365

44.

Which characteristic exists at an erosional-depositional interface in a stream where equilibrium occurs?

A. The downstream profile is the same as the across stream profile.

B. The rate of deposition equals the rate of erosion.

C. The composition of the sediments deposited is the same as the composition of the sediments eroded.

D. The volume of streamflow equals the volume of deposition.

45.

Most New York State sandstone bedrock was formed

A. in Earth's interior where temperatures exceeded the melting point of quartz

B. on Earth's surface from the cooling of molten lava

C. in a delta from sand grains deposited, buried, and cemented together by minerals

D. in a desert when heat and metamorphic pressure caused quartz crystals to fuse together

46.

A soil sample with a large amount of space between the particles will have a

A. low permeability rate

B. low infiltration rate

C. high porosity

D. high capillarity

47.
Which factor has the least effect on the weathering of a rock?

A. climate conditions
B. composition of the rock
C. exposure of the rock to the atmosphere
D. the number of fossils found in the rock

48.
The best evidence that Earth spins on its axis is provided by

A. variations in atmospheric density
B. apparent shifts in the swing of a Foucault pendulum
C. changes in the position of sunspots on the Sun
D. eclipses of the Moon

49.
Which conclusion based on the analysis of seismic data supports the inference that Earth's outer core is liquid?

A. *S*-waves are not transmitted through the outer core.
B. *S*-waves are transmitted through the outer core.
C. *P*-waves are not transmitted through the outer core.
D. *P*-waves are transmitted through the outer core.

50.
During which phase change of water is the most energy released into the environment?

A. water freezing
B. ice melting
C. water evaporating
D. water vapor condensing

51.
Some nonsedimentary rocks are formed as a result of

A. solidification of molten material
B. evaporation and precipitation
C. cementation of particles
D. deposition of particles

52.
Which is true about isolines on a weather map?

A. They are of equal length.
B. They are evenly spaced.
C. They connect points with equal readings.
D. They are constant for 24 hours.

53.
The upward movement of air in the atmosphere generally causes the temperature of that air to

A. decrease and become closer to the dewpoint
B. decrease and become farther from the dewpoint
C. increase and become closer to the dewpoint
D. increase and become farther from the dewpoint

54.
The general direction of continental glacial advance in the United States was generally from

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

55.
Which process led to the formation of thick salt deposits found in the bedrock at some locations in New York State?

A. melting
B. runoff
C. condensation
D. evaporation

56.
Which event occurred earliest in geologic history?

A. appearance of the earliest grasses
B. appearance of the earliest birds
C. the Grenville Orogeny
D. the intrusion of the Palisades Sill

57.
What elevation and bedrock structure are generally found in the Catskills?

A. low elevation and horizontal sedimentary bedrock structure
B. high elevation and horizontal sedimentary bedrock structure
C. low elevation and folded metamorphic bedrock structure
D. high elevation and folded metamorphic bedrock structure

58.
Which process requires water to gain heat energy from the environment?

A. evaporation
C. infiltration
B. condensation
D. precipitation

59.
A gradual increase in atmospheric carbon dioxide would warm Earth's atmosphere because carbon dioxide is a

A. poor reflector of ultraviolet radiation
B. good reflector of ultraviolet radiation
C. poor absorber of infrared radiation
D. good absorber of infrared radiation

60.
The long, sandy islands along the south shore of Long Island are composed mostly of sand and rounded pebbles arranged in sorted layers. The agent of erosion that most likely shaped and sorted the sand and pebbles while transporting them to their island location was

A. glaciers
C. wind
B. landslides
D. ocean waves

61.
A strong west wind steadily blew over Lake Ontario picking up moisture. As this moist air flowed over the Tug Hill Plateau, the plateau received a 36-inch snowfall. This snow fell from clouds that formed when rising air was

A. cooled by expansion, causing water vapor to condense
B. cooled by compression, causing water vapor to condense
C. warmed by expansion, causing water vapor to evaporate
D. warmed by compression, causing water vapor to evaporate

62.
Which factor most likely causes two cities at the same elevation and latitude to have different yearly average temperature ranges?

A. rotation of Earth
B. duration of insolation
C. distance from a large body of water
D. direction of prevailing winds

63.
Which two gases have been added to Earth's atmosphere in large amounts and are believed to have increased global warming by absorbing infrared radiation?

A. neon and argon
B. chlorine and nitrogen
C. hydrogen and helium
D. methane and carbon dioxide

64.
If wastewater from a nuclear power plant raises the temperature of a nearby body of water, the concentration of biologic pollutants in the water will most likely

A. decrease
B. increase
C. remain the same

65.
According to tectonic plate maps, New York State is presently located

A. at a convergent plate boundary
B. above a mantle hot spot
C. above a mid-ocean ridge
D. near the center of a large plate

66.
Which component of Earth's atmosphere is classified as a greenhouse gas?

A. oxygen
C. helium
B. carbon dioxide
D. hydrogen

67.
The well-defined boundaries of New York State's several distinct landscape regions are based on

A. differences in bedrock composition and structure
B. extreme differences in climate
C. varieties of vegetation
D. rate of sediment deposition

68.
Active volcanoes are most abundant along the

A. edges of tectonic plates
B. eastern coastline of continents
C. 23.5° N and 23.5° S parallels of latitude
D. equatorial ocean floor

69.
Which characteristic is most common in sedimentary rocks?

A. foliation
B. layering
C. intergrown crystals
D. glassy texture

70.
Surface ocean currents located at 40° south latitude, 90° west longitude generally flow toward the

A. northeast
B. southeast
C. southwest
D. west

71.
The path of a Foucault pendulum provides evidence that Earth

A. rotates on its axis
B. revolves in its orbit
C. is tilted on its axis
D. has an elliptical orbit

72.
Which rock is sedimentary in origin and formed as a result of chemical processes?

A. granite
B. shale
C. breccia
D. dolostone

73.
Compared to the surface temperature and luminosity of massive stars in the Main Sequence, the smaller stars in the Main Sequence are

A. hotter and less luminous
B. hotter and more luminous
C. cooler and less luminous
D. cooler and more luminous

74.
The best evidence of crustal movement would be provided by

A. dinosaur tracks found in the surface bedrock
B. marine fossils found on a mountaintop
C. weathered bedrock found at the bottom of a cliff
D. ripple marks found in sandy sediment

75.
A Foucault pendulum appears to change its direction of swing over a period of several hours because of Earth's

A. rotation
B. revolution
C. tilted axis
D. gravity

76.
Which gas in the atmosphere has the most influence on day-to-day weather changes?

A. ozone
B. oxygen
C. water vapor
D. carbon dioxide

77.
Daily weather forecasts are based primarily on

A. ocean currents
B. seismic data
C. phases of the moon
D. air-mass movements

78.
Which group of organisms, some of which were preserved as fossils in early Paleozoic rocks, is still in existence today?

A. brachiopods
B. eurypterids
C. graptolites
D. trilobites

79.
Which evidence could be used to help classify a landscape region as a plateau?

A. rounded peaks
B. trellis drainage pattern
C. V-shaped river valleys
D. horizontal rock structure

80.
Characteristics such as composition, porosity, permeability, and particle size are used to describe different types of

A. hillslopes
B. stream drainage patterns
C. soils
D. landscapes

81.
Which statement most accurately describes Earth's atmosphere?

A. The atmosphere is layered, with each layer possessing distinct characteristics.
B. The atmosphere is a shell of gases surrounding most of Earth.
C. The atmosphere's altitude is less than the depth of the ocean.
D. The atmosphere is more dense than the hydrosphere but less dense than the lithosphere.

82.
The primary source of most of the moisture for the Earth's atmosphere is

A. soil-moisture storage
B. rivers and lakes
C. melting glaciers
D. oceans

83.
Most of the Gulf Stream Ocean Current is

A. warm water that flows southwestward
B. warm water that flows northeastward
C. cool water that flows southwestward
D. cool water that flows northeastward

84.
An object that is a good radiator of electromagnetic waves is also a good

A. insulator from heat
B. reflector of heat
C. absorber of electromagnetic energy
D. refractor of electromagnetic energy

85.
Which element is most abundant in Earth's lithosphere?

A. oxygen C. hydrogen
B. silicon D. nitrogen

86.
Which statement best describes the general relationship between stream velocity and the size of the sediment particles transported by the stream?

A. As the stream velocity decreases, the diameter of the sediments transported increases.
B. As the stream velocity decreases, the diameter of the sediments transported remains the same.
C. As the stream velocity increases, the diameter of the sediments being transported decreases
D. As the stream velocity increases, the diameter of the sediments being transported increases.

87.
Which planet has vast amounts of liquid water at its surface?

A. Venus C. Jupiter
B. Mars D. Earth

88.
As viewed from Earth, most stars appear to move across the sky each night because

A. Earth revolves around the Sun
B. Earth rotates on its axis
C. stars orbit around Earth
D. stars revolve around the center of the galaxy

89.
Which observation provides the best evidence that Earth revolves around the Sun?

A. The constellation Orion is only visible in the night sky for part of the year.
B. The North Star, *Polaris*, is located above the North Pole for the entire year.
C. The Sun appears to move across Earth's sky at a rate of 15°/hr.
D. The Coriolis effect causes Northern Hemisphere winds to curve to the right.

90.
With respect to one another, galaxies have been found to be

A. moving closer together
B. moving farther apart
C. moving in random directions
D. stationary

91.
A stream with a velocity of 100 centimeters per second flows into a lake. Which sediment-size particles would the stream most likely deposit first as it enters the lake?

A. boulders C. pebbles
B. cobbles D. sand

92.
Most water vapor enters the atmosphere by the processes of

A. convection and radiation
B. condensation and precipitation
C. evaporation and transpiration
D. erosion and conduction

93.
Scientists have inferred the structure of Earth's interior mainly by analyzing

A. the Moon's interior
B. the Moon's composition
C. Earth's surface features
D. Earth's seismic data

94.
A high air-pressure, dry-climate belt is located at which Earth latitude?

A. 0°
B. 15° N
C. 30° N
D. 60° N

95.
The largest particles that a stream deposits as it enters a pond are 8 centimeters in diameter. The minimum velocity of the stream needed to transport these particles is approximately

A. 100 cm/s
B. 200 cm/s
C. 300 cm/s
D. 400 cm/s

96.
Water will infiltrate surface material if the material is

A. impermeable and unsaturated
B. impermeable and saturated
C. permeable and unsaturated
D. permeable and saturated

97.
Which mineral has a metallic luster, a black streak, and is an ore of iron?

A. galena
B. magnetite
C. pyroxene
D. graphite

98.
Which evidence supports the theory of seafloor spreading?

A. The rocks of the ocean floor and the continents have similar origins.
B. In the ocean floor, rocks near the mid-ocean ridge are cooler than rocks near the continents.
C. The pattern of magnetic orientation of rocks is similar on both sides of the mid-ocean ridge.
D. The density of oceanic crust is greater than the density of continental crust.

99.
At the end of the last period of glaciation, the natural environment of New York State probably looked like the present environment in

A. Alaska
B. North Carolina
C. Texas
D. Ohio

100.
The Coriolis effect provides evidence that Earth

A. rotates on its axis
B. revolves around the Sun
C. undergoes cyclic tidal changes
D. has a slightly eccentric orbit