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**Earth and Space Science Questions #1**

**TOSS-UP**

EARTH AND SPACE Multiple Choice: Approximately how many different minerals exist?

1. W. about 100
2. X. about 2,000
3. Y. about 3,500
4. Z. over 10,000

ANSWER: Y. about 3,500

**BONUS**

EARTH AND SPACE Short Answer: The atmosphere is composed mostly of which two gases?

ANSWER:oxygen and nitrogen

**TOSS-UP**

EARTH AND SPACE Multiple Choice: Which geologic theory describes that geologic change occurs over long periods of time, by a sequence of almost imperceptible events?

1. W. catastrophism
2. X. law of superposition
3. Y. uniformitarianism
4. Z. principle of lateral continuity

ANSWER: Y. uniformitarianism

**BONUS**

EARTH AND SPACE Multiple Choice: Approximately how old is the earth?

1. W. 8008 years
2. X. 3.4 million years
3. Y. 158 millions years
4. Z. 4.6 billion years

ANSWER: Z. 4.6 billion years

**TOSS-UP**

EARTH AND SPACE Multiple Choice: In which of the following periods did the first flowering plants emerge?

1. W. Cretaceous
2. X. Paleogene
3. Y. Neogene
4. Z. Quaternary

ANSWER: W. Cretaceous

**BONUS**

EARTH AND SPACE Short Answer: Order the following units of geologic time in order from smallest to largest: eon, epoch, period, era

ANSWER: epoch, period, era, eon

**TOSS-UP**

EARTH AND SPACE Multiple Choice: In an infrared picture taken from space, what color would healthy green vegetation appear?

1. W. green
2. X. blue
3. Y. violet
4. Z. red

ANSWER: Z. red

**BONUS**

EARTH AND SPACE Multiple Choice: Which of the following stars is the closest to our solar system?

1. W. Arcturus
2. X. Alpha Centauri
3. Y. Anteres
4. Z. Altair

ANSWER: X. Alpha Centauri

**TOSS-UP**

EARTH AND SPACE Multiple Choice: Which of the following is an asterism?

1. W. Ursa Major
2. X. Scropius
3. Y. Pegasus
4. Z. Big Dipper

ANSWER: Z. Big Dipper

**BONUS**

EARTH AND SPACE Short Answer: From what language do most star names come from?

ANSWER:(Ancient) Arabic

**TOSS-UP**

EARTH AND SPACE Multiple Choice: What two elements make up most of Earth’s core?

1. W. hydrogen and helium
2. X. aluminum and zinc
3. Y. iron and nickel
4. Z. phosphorus and arsenic

ANSWER: Y. iron and nickel

**BONUS**

EARTH AND SPACE Multiple Choice: Which of the following geologists came up with the theory of continental drift?

1. W. Alfred Wegener
2. X. Niles Eldredge
3. Y. Georges Cuvier
4. Z. Samuel Warren Carey

ANSWER: W. Alfred Wegener

**TOSS-UP**

EARTH AND SPACE Multiple Choice: Which of the following is the brightest star in the night sky?

1. W. Vega
2. X. Polaris
3. Y. Sirius
4. Z. Spica

ANSWER: Y. Sirius

**BONUS**

EARTH AND SPACE Short Answer: Suppose the difference in magnitudes between Sirius and Polaris is about 3 magnitudes, what is the intensity ratio between the two stars?

ANSWER:IA/IB= (2.5)^3 = 15.6 ± 2.0

**TOSS-UP**

EARTH AND SPACE Short Answer: What concept describes the lithosphere floating on the asthenosphere in equilibrium?

ANSWER: D. isostasy

**BONUS**

EARTH AND SPACE Multiple Choice: 4800 years ago, which star was the North Star?

1. W. Vega
2. X. Polaris
3. Y. Thuban
4. Z. Spica

ANSWER: Y. Thuban

**TOSS-UP**

EARTH AND SPACE Multiple Choice: Which is the brightest planet in the sky?

1. W. Venus
2. X. Mars
3. Y. Jupiter
4. Z. Saturn

ANSWER: W. Venus

**BONUS**

EARTH AND SPACE Short Answer: What is the characteristic shape of a mineral and the manner in which aggregates of crystals grow called?

ANSWER:(crystal) habit

**TOSS-UP**

EARTH AND SPACE Multiple Choice: What type of fracture is characteristic to glass?

1. W. fibrous
2. X. conchoidal
3. Y. splintery
4. Z. irregular

ANSWER: X. conchoidal

**BONUS**

EARTH AND SPACE Short Answer: A pocketknife is about what value on the Mohs hardness scale?

ANSWER:5

**TOSS-UP**

EARTH AND SPACE Multiple Choice: The best type of coal in terms of purity is:

1. W. Lignite
2. X. Anthracite
3. Y. Bituminous
4. Z. Subbituminous

ANSWER: X. Anthracite

**BONUS**

EARTH AND SPACE Short Answer: What is the chemical composition of hematite?

ANSWER:Fe2O3

**TOSS-UP**

EARTH AND SPACE Multiple Choice: Coal liquefaction refers to the process of:

1. W. Washing coal to remove impurities
2. X. Turning coal into natural gas
3. Y. Turning coal into syncrude
4. Z. Changing the form of coal

ANSWER: Y. Turning coal into syncrude

**BONUS**

EARTH AND SPACE Short Answer: Which phase of the moon is most commonly seen during the day?

ANSWER:gibbous moon

**TOSS-UP**

EARTH AND SPACE Multiple Choice: Which layer of the sun has prominences and is a thin layer of gas?

1. W. chromosphere
2. X. corona
3. Y. photosphere
4. Z. core

ANSWER: W. chromosphere

**BONUS**

EARTH AND SPACE Short Answer: How long is one saros cycle, the pattern of eclipses?

ANSWER:18 years and 11 days

**TOSS-UP**

EARTH AND SPACE Multiple Choice: Which of the following pairs both igneous rocks?

1. W. sandstone and shale
2. X. mica and limestone
3. Y. granite and basalt
4. Z. pumice and breccia

ANSWER: Y. granite and basalt

**BONUS**

EARTH AND SPACE Short Answer: What is the study of the astronomy of ancient peoples called?

ANSWER:archaeoastronomy

**TOSS-UP**

EARTH AND SPACE Short Answer: What is the geologically active region surrounding the Pacific Ocean called?

ANSWER: The “Ring of Fire”

**BONUS**

EARTH AND SPACE Short Answer: What is a volcanically active spot directly above a mantle plume called?

ANSWER:Hot spot

**TOSS-UP**

EARTH AND SPACE Multiple Choice: In geology, a dome shaped intrusion is called a:

1. W. volcanic neck
2. X. laccolith
3. Y. nuee ardente
4. Z. caldera

ANSWER: X. laccolith

**BONUS**

EARTH AND SPACE Short Answer: Crater Lake in Oregon was formed as a result of:

ANSWER:caldera, blown up volcano

**TOSS-UP**

EARTH AND SPACE Multiple Choice: Which of the following energy sources does not originally come from the sun?

1. W. wind
2. X. ocean thermal energy conversion
3. Y. geothermal
4. Z. hydroelectric

ANSWER: Y. geothermal

**BONUS**

EARTH AND SPACE Short Answer: What is the term used to measure the intensity of solar radiation and is equal to 1 gram calorie per square centimeter per minute?

ANSWER:Langley

**TOSS-UP**

EARTH AND SPACE Multiple Choice: Which of the following names is used to describe the 0 degree longitudinal line?

1. W. Great Circle
2. X. Principal Line
3. Y. Equator
4. Z. Prime Meridian

ANSWER: Z. Prime Meridian

**BONUS**

EARTH AND SPACE Short Answer: What is the name of for a distinctive fossil that existed over a relatively large part of the earth during a short period of time?

ANSWER:Index Fossil

**TOSS-UP**

EARTH AND SPACE Multiple Choice: The fossil archaeopteryx is the earliest known example of:

W. mammal

1. X. bird
2. Y. dinosaur
3. Z. flower

ANSWER: X. bird

**BONUS**

EARTH AND SPACE Short Answer: The ---------- refers to the emission, or ejection, of electrons from the surface of a metal in response to light.

ANSWER:Photoelectric effect

**TOSS-UP**

EARTH AND SPACE Multiple Choice: Large streams that enter another body of water produce what at their mouths?

W. load casts

1. X. deltas
2. Y. anticlines
3. Z. sinkholes

ANSWER: X. deltas

**BONUS**

EARTH AND SPACE Short Answer: What are cells that convert solar energy into electricity called?

ANSWER: Photovoltaic cells

**TOSS-UP**

EARTH AND SPACE Short Answer: To the nearest half degree, the Arctic Circle is at what latitude?

ANSWER: 66.5 degrees (north)

**BONUS**

EARTH AND SPACE Short Answer: What is the closest point of earth to the sun called?

ANSWER: perihelion

**TOSS-UP**

EARTH AND SPACE Multiple Choice: Valleys formed by glaciers always have which of the following characteristics?

1. W. U-shaped cross-sections
2. X. straight courses
3. Y. uniform slopes
4. Z. bedrock floors

ANSWER: W. U-shaped cross-sections

**BONUS**

EARTH AND SPACE Short Answer: Which type of wave has the highest frequency and lowest wavelength?

ANSWER: Gamma rays

**TOSS-UP**

EARTH AND SPACE Multiple Choice: What are the flat, moveable mirrors used in solar power towers called?

1. Heliostats
2. Photostats
3. Solstats
4. Lightstats

ANSWER: A. Heliostats

**BONUS**

EARTH AND SPACE Short Answer: Which is the most successful full space telescope to orbit around earth?

ANSWER: Hubble Space Telescope

**TOSS-UP**

EARTH AND SPACE Multiple Choice: When does the air cool most rapidly?

1. W. a cloudy day
2. X. a cloudy night
3. Y. a sunny day
4. Z. a clear night

ANSWER: Z. a clear night

**BONUS**

EARTH AND SPACE Short Answer: List the 7 major spectral classes still used today

ANSWER: O, B, A, F, G, K, M

**TOSS-UP**

EARTH AND SPACE Multiple Choice: Sunspots appear on which layer of the sun?

1. W. corona
2. X. photosphere
3. Y. chromosphere
4. Z. core

ANSWER: X. photosphere

**BONUS**

EARTH AND SPACE Multiple Choice: Who discovered the solar energy?

1. W. Auguste Mouchout
2. X. Nicolas Carnot
3. Y. James Joule
4. Z. James Watt

ANSWER: A. Auguste Mouchout