1. The ice sheet that covered northeastern United States came from which of the following locations?

w) Labrador center in eastern Canada

x) Keewatin center in central Canada

y) Cordilleran center in the Rocky Mountains

z) Greenland

**ANSWER**: W -- LABRADOR CENTER IN EASTERN CANADA

1. A volcano which is composed of lava flows and pyroclastic material and which is Steep-sided and very tall is known as:

w) Syncline x) Composite cone y) Anticline z) none of these

ANSWER: X -- COMPOSITE CONE

1. The solidified lava of a volcano belongs to which rock family? Is it:

w) Igneous x) metamorphic y) sedimentary z) fossilized

ANSWER: W – IGNEOUS

1. In geological studies, a dome shaped intrusion is called a:

w) Volcanic neck x) laccolith y) nuee ardent z) caldera

ANSWER: X -- LACCOLITH

1. Iceland has a great deal of volcanic activity. The reason for this is:

w) It was formed above a mid-ocean rift.

x) It is part of the "Ring of Fire".

y) Two tectonic plates are rubbing against each other under Iceland.

z) The American plate is diving under the European plate in this region.

ANSWER: W -- IT WAS FORMED ABOVE A MID-OCEAN RIFT.

1. Of the following, the rock that is most resistant to both chemical and mechanical weathering is:

w) shale x) limestone y) marble z) quartzite

ANSWER: Z -- QUARTZITE

1. There is a specific term used by geologists to describe rock weathering in which shells or plates are broken away from a rock leaving it rounded in appearance. What is this term?

ANSWER: EXFOLIATION

1. Biosphere describes the earth realm where life occurs. What describes the entire solid earth realm and is composed of mineral matter?

ANSWER: LITHOSPHERE

1. Which of the following energy sources does NOT originally come from the Sun?

w) Wind x) Ocean thermal energy conversion y) geothermal z) hydroelectric

ANSWER: Y – GEOTHERMAL

1. What is the name of the atmosphere layer of upwardly diminishing temperature situated above the stratosphere and topped by the mesopause?

ANSWER: MESOSPHERE

1. What is the term used to measure the intensity of solar radiation and is equal to one gram calorie per square centimeter per minute?

ANSWER: LANGLEY

1. What percentage of the earth's atmosphere does O2 comprise?

w) 75% x) 50% y) 21% z) 32%

ANSWER: Y -- 21%

1. What gas makes up the majority of our atmosphere?

ANSWER: NITROGEN

1. The tanning rays of the sun are called:

w) Infrared rays x) visible light y) ultraviolet rays z) gamma rays

ANSWER: Y -- ULTRAVIOLET RAYS

1. What is the relative humidity when the absolute humidity is 3 grams per cubic meter and the air has a capacity of 12 grams per cubic meter?

w) 4% x) 9% y) 25% z) 400%

ANSWER: Y -- 25%

1. While many different gases are found in the atmosphere, a number do NOT contribute significantly to solar heating of the atmosphere. Which TWO of the following gases do NOT absorb much heat?

w) Carbon dioxide x) nitrogen y) water vapor z) oxygen

ANSWER: X and Z -- NITROGEN and OXYGEN

1. Global climate change is being attributed to the atmospheric increase in what two gases produced by human activities?

w) Oxygen and hydrogen

x) Ozone and methane

y) Nitrous oxide and sulfur dioxide

z) Methane and carbon dioxide

e) Ozone and carbon monoxide

ANSWER: Z -- METHANE AND CARBON DIOXIDE

1. To within 5%, how much has atmospheric CO2 concentration INCREASED since the year 1800?

ANSWER: 25%

1. Multiple Choice: The concentration of carbon dioxide in the atmosphere is in the range of:

w) 1-10 parts per million

x) 10-100 parts per million

y) 100-1000 parts per million

z) 1000-10,000 parts per million

ANSWER: Y -- 100-1000 PARTS PER MILLION (the exact number is 350 ppm as of the time of this article)

1. The ozone layer is located in which region of the atmosphere?

ANSWER: STRATOSPHERE

1. In geological studies, all of the following are TRUE of P waves except that they:

w) are body waves

x) travel like sound waves

y) can pass through liquids

z) are slower than S waves

ANSWER: Z -- ARE SLOWER THAN S WAVES

1. Which of the following terms is used to describe the appearance of a mineral in transmitted light? Is it:

w) Diaphaneity x) translucence y) opaqueness z) porosity

ANSWER: W -- DIAPHANEITY

1. In geological studies, arkose contains which of the following minerals which gives it a reddish color?

w) Orthoclase x) calcite y) aragonite ( z) quartz

ANSWER: W -- ORTHOCLASE

1. Which one of the following minerals does NOT contain silica tetrahedrons?

w) quartz x) muscovite y) halite z) orthoclase

ANSWER: Y – HALITE

1. Which of the following minerals is noted for its one perfect cleavage?

w) calcite x) muscovite y) quartz z) pyrite

ANSWER: X -- MUSCOVITE

1. Which of the following gases is given off in the acid test of a carbonate mineral?

w) Chlorine x) nitrogen y) carbon dioxide z) sulfur dioxide

ANSWER: Y -- CARBON DIOXIDE

1. Fine parallel lines, or striations, are most likely to be seen on a cleavage surface of which of the following minerals?

w) Quartz x) orthoclase y) hornblende z) plagioclase

ANSWER: Z – PLAGIOCLASE

1. Which of the following minerals is NOT a silicate?

w) orthoclase x) muscovite y) augite z) magnétite

ANSWER: Z – MAGNETITE

1. Which of the following pairs contains one igneous and one sedimentary rock?

w) shale and marble

x) sandstone and quartzite

y) granite and limestone

z) obsidian and gneiss

ANSWER: Y -- GRANITE AND LIMESTONE

1. Which of these pairs of minerals are always found in granites?

w) Muscovite and calcite

x) Quartz and orthoclase

y) Hornblende and talc

z) Augite and magnetite

ANSWER: X -- QUARTZ AND ORTHOCLASE

1. An example of a rock whose minerals have been crushed into thin sheets or bands is:

w) shale x) schist y) conglomerate z) granite

ANSWER: X -- SCHIST

1. The hydrolysis of orthoclase results in the formation of:

w) shale x) kaolin y) lime z) hydrochloric acid

ANSWER: X – KAOLIN

1. The deposits of loess in the United States probably originated as which of the following?

w) talus x) rock flour y) humus z) geyserite

ANSWER: X -- ROCK FLOUR

1. This sedimentary rock was used to build the Pantheon and the Colossium:

w) marble x) travertine y) sandstone z) ironstone

ANSWER: X -- TRAVERTINE

1. What is another name for the semi-precious stone heliotrope?

ANSWER: BLOODSTONE

1. Rocks are classified depending upon how they are formed. In which class would slate be found?

ANSWER: METAMORPHIC

1. Which of the following is an igneous rock?

w) Granite x) Shale y) Coal z) Slate

ANSWER: W – GRANITE

1. Which of the following is a metamorphic rock?

w) sandstone x) granite y) quartz z) marble

ANSWER: Z – MARBLE

1. The black sand of the Hawaiian Islands is composed of which of the following?

w) dark limestone x) quartz y) gypsum z) basalt

ANSWER: Z -- BASALT

1. Name the clay mineral produced by the alteration of potash feldspar which is also used in ceramics.

ANSWER: KAOLINITE

1. All of the following are examples of chemically precipitated sedimentary rock except:

w) limestone x) sandstone y) dolomite z) Shale

ANSWER: X -- SANDSTONE

1. Which of the following materials is the hardest?

w) calcite x) silicon carbide y) topaz z) quartz

ANSWER: X -- SILICON CARBIDE

1. Igneous rocks that form from magma are known as:

w) minerals x) granite y) intrusive rocks z) gneiss (pron: nice)

ANSWER: Y -- INTRUSIVE ROCKS

1. The mineral halite is:

w) potassium chloride x) sodium chloride y) calcium chloride z) calcium bromide

ANSWER: X -- SODIUM CHLORIDE

1. What is the name of the white clay which has been used for thousands of years in the fabrication of ceramic bodies? Is it:

w) Talc x) Kaolin y) Feldspar z) Quartz ANSWER: X -- KAOLIN

1. An agate is a form of what mineral?

w) magnetite x) feldspar y) quartz z) copper

ANSWER: Y – QUARTZ

1. Which of the following is the name of the partly melted rock layer on which the plates move?

w) lithosphere x) asthenosphere y) hydrosphere z) outer core

ANSWER: X -- ASTHENOSPHERE

1. Which of the following areas is closest to the total surface area of the earth in square kilometers?

w) 500 million x) 500 billion y) 500 thousand z) 5 billion

ANSWER: W -- 500 MILLION

1. We know that the OUTER core is liquid because:

w) P waves pass through it

x) S waves pass through it

y) P waves cannot pass through it

z) S waves cannot pass through it

ANSWER: Z -- S WAVES CANNOT PASS THROUGH IT

1. It is 9:00 p.m. in Greenwich, England. You are on a ship whose local time is 6:00 p.m.

What is the longitude of your ship?

ANSWER: 45 DEGREES WEST

1. Field capacity represents the maximum quantity of water held:

w) in the soil against the force of gravity

x) in the ground water zone

y) in the intermediate zone

z) below the water table

ANSWER: W -- IN THE SOIL AGAINST THE FORCE OF GRAVITY

1. Trade winds are persistent easterly winds develop between:

w) Subtropical high pressure and equatorial doldrum

x) Subtropical high pressure and subpolar low pressure

y) Westerlies and polar highs

z) none of the above

ANSWER: W -- SUBTROPICAL HIGH PRESSURE AND EQUATORIAL DOLDRUM

1. An open-ocean community is also called a:

w) Pelagic community

x) Benthic community

y) Lentic community

z) Lotic community

ANSWER: W -- PELAGIC COMMUNITY

1. A lake or pond community is also known as a:

w) Pelagic community

x) Benthic community

y) Lentil community

z) Logic community

ANSWER: Y -- LENTIC COMMUNITY

1. What is the name given to a region where one plate of the earth's crust is sliding under another?

ANSWER: SUBDUCTION ZONE

1. The tectonic plates on which India and the adjacent portion of Asia ride are colliding at a rate of:

w) 1-10 millimeters per year

x) 1-10 centimeters per year

y) 1-10 meters per year

z) 1-10 decimeters per year

ANSWER: X -- 1-10 CENTIMETERS PER YEAR

1. In which of these states can large numbers of drumlins be found?

w) Oregon x) California y) Texas z) Wisconsin ANSWER: Z -- WISCONSIN

1. Which one of these glacial features is believed to have formed in the bed of a sub glacial stream?

w) an esker x) a kame y) a drumlin z) a moraine

ANSWER: W -- AN ESKER

1. In which of the following is a continental glacier found?

w) Switzerland x) the Rockies y) Greenland z) the Andes Mountains

ANSWER: Y – GREENLAND

1. Deposits that form when the ice in a glacier melts are called:

w) drifts x) dunes y) veins z) cirques

ANSWER: W – DRIFTS

1. The earth's climate has been warming since the last glacial period which ended about how many years ago?

w) 1,000 to 2,000 years ago

x) 10,000 to 20,000 years ago

y) 100,000 to 200,000 years ago

z) 1,000,000 to 2,000,000 years ago

ANSWER: X -- 10,000 TO 20,000 YEARS AGO

1. Multiple Choice: Cirrus clouds are:

w) rain clouds x) thick and fleecy y) made of ice crystals z) low cloud layers

ANSWER: Y -- MADE OF ICE CRYSTALS

1. The name of a rapid rise of coastal water that accompanies the arrival of a cyclone is called:

w) hurricane x) storm surge y) tidal wave z) cyclonistat

ANSWER: X -- STORM SURGE

1. Certain substances are classified as water pollutants, others as air pollutants and still others as land pollutants. Which of the following pollutes all three parts of our environment?

w) fluorocarbons x) smog y) acid rain z) ozone

ANSWER: Y -- ACID RAIN

1. What is the name of the phenomenon that causes an accumulation of heat in the lower atmosphere because of the absorption of long-wave radiation from the Earth's surface?

ANSWER: GREENHOUSE EFFECT

1. Multiple Choice: Which is true for Low-Latitude Climates?

w) have a winter season

x) lack a winter season

y) are wet throughout the year

z) are dry throughout the year

ANSWER: X -- LACK A WINTER SEASON

1. The Greenhouse Effect is caused primarily by which of the following processes?

w) blocking incoming short wave solar energy

x) absorbing incoming short wave solar energy

y) heating of the Earth's stratosphere

z) absorbing outgoing long wave radiation from the Earth

ANSWER: Z -- ABSORBING OUTGOING LONG WAVE RADIATION FROM THE EARTH

1. Fluorite is what number on Moh's hardness scale?

w) 1 x) 2 y) 3 z) 4 ANSWER: Z -- 4

1. Multiple Choice: Apatite is what number on Moh's (pron: moes: rhyme with toes) hardness scale?

w) 1 x) 3 y) 5 z) 7 ANSWER: Y – 5

1. Hematite is a primary ore of which of the following metals?

w) zinc x) tungsten y) iron z) none of the above ANSWER: Y -- IRON

1. Galena is a primary ore of which of the following metals?

w) zinc x) tungsten y) lead z) silver ANSWER: Y -- LEAD

1. Sphalerite is a primary ore of which of the following metals?

w) Zinc x) tin y) copper z) iron ANSWER: W – ZINC

1. Which of the following minerals is a source of copper?

w) Bauxite x) Hematite y) Malachite z) Galena ANSWER: Y -- MALACHITE

1. Which physical phenomenon or principle is most often applied in the search for petroleum reservoirs?

w) Gravitational attraction x) magnetic field distortions y) natural radioactive decay of minerals

z) Acoustic wave transmission and reflection

ANSWER: Z -- ACOUSTIC WAVE TRANSMISSION AND REFLECTION

1. Which of the following time periods describes the age of the coal deposits of the Eastern United States?

w) Jurassic and Cambrian x) Mississippian and Pennsylvanian y) Pliocene and Miocene

z) None of these ANSWER: X -- MISSISSIPPIAN AND PENNSYLVANIAN

1. Of the following four geologic periods, which is the oldest?

w) Devonian x) Silurian y) Permian z) Jurassic ANSWER: X -- SILURIAN

1. Of the following four geologic periods, which is the most recent?

w) Devonian x) Silurian y) Permian z) Jurassic ANSWER: Z -- JURASSIC

1. On the Phanerozoic Time Scale, which of the following geologic periods occurred approximately 225 to 280 million years ago? Is it:

w) Jurassic x) Permian y) Carboniferous z) Silurian ANSWER: X – PERMIAN

1. On the Phanerozoic Time Scale, which of the following geologic periods occurred approximately 395 to 430 million years ago? Is it:

w) Jurassic x) Permian y) Carboniferous z) Silurian

ANSWER: Z -- SILURIAN

1. On the Phanerozoic time scale, which of the following geologic periods occurred approximately 500 to 570 million years ago? Is it:

w) Cambrian x) Ordovician y) Carboniferous z) Silurian

ANSWER: W -- CAMBRIAN

1. The Miocene, Eocene, and Paleocene epochs belong to what geologic period on the Phanerozoic Time Scale? Is it the:

w) Devonian x) Permian y) Triassic z) Tertiary

ANSWER: Z -- TERTIARY

1. During which period, in the earth's history, did MOST dinosaurs become extinct?

w) Carboniferous x) Cretaceous y) Quaternary z) Triassic

ANSWER: X – CRETACEOUS

1. The disappearance of the dinosaurs also marks the end of which geological era?

w) Precambrian x) Cambrian y) Mesozoic

z) Cenozoic ANSWER: Y -- MESOZOIC

1. On a topographic map, lines that indicate water depth are termed:

w) isogonic lines x) bathymetric lines y) isopachs

z) none of these ANSWER: X -- BATHYMETRIC LINES

1. In geological studies, a fault in the earth's surface in which the hanging wall has moved UP relative to the footwall is termed:

w) overthrust fault x) reverse fault y) tear fault z) none of these

ANSWER: X -- REVERSE FAULT

1. In geological studies, a fault in the earth's surface along which primarily horizontal movement has taken place is termed:

w) overthrust fault x) strike-slip fault y) reverse fault z) none of the above

ANSWER: X -- STRIKE-SLIP FAULT

1. In studies of the surface of the earth, a reverse fault having a dip between 10 and 45degrees is known as a:

w) thrust fault x) normal fault y) strike-slip fault z) neither of these

ANSWER: W -- THRUST FAULT

1. What is the name given to a flat-topped plateau bordered on all sides by cliffs?

ANSWER: MESA or BUTTE

1. You are adrift off the coast of Miami, Florida in the Gulf Stream. Where would youmost likely land? ANSWER: Z -- THE BRITISH ISLES
2. The horse latitude which occurs at approximately 30o - 35o north is also known as the:

w) doldrums x) calms of Cancer y) calms of Capricorn z) trough of the Pacific. ANSWER: X -- CALMS OF CANCER

1. Of the three types of corals, Scleractinian, Rugose and Tabulate, which one is still in existence today?

ANSWER: SCLERACTINIAN

1. A circular cavity ground out of bedrock by running water is called a:

w) cave x) pothole y) sinkhole z) kettle hole ANSWER: X -- POTHOLE

1. A yazoo stream flows through which of the following?

w) gorge x) divide y) backswamp z) water gap

ANSWER: Y -- BACKSWAMP

1. Which of the following is a famous hanging trough waterfall?

w) Yellowstone Falls x) Yosemite Falls y) Niagara Falls z) Victoria Falls

ANSWER: X -- YOSEMITE FALLS

1. A wave with a wavelength of 40 meters and a height of 2 meters will NOT be refracted in water with a depth of more than:

w) 1 meter x) 2 meters y) 10 meters z) 20 meters ANSWER: Z -- 20 METERS

1. The lag time between precipitation period and peak discharge period of a river:

w) is increased by urbanization

x) is decreased by urbanization

y) is shorter for a large drainage basin than for a small one

z) depends upon the hydraulic heads

ANSWER: X -- IS DECREASED BY URBANIZATION

1. Give the general term used to designate the sand, silt, and mud deposited by a stream, along its bank or upon its flood plain, during periods of high water.

ANSWER: ALLUVIUM or ALLUVIAL

1. An anticline is

w) an upward-arched fold with the youngest rocks exposed along the hinge line

x) a downward-arched fold with the oldest rocks exposed along the hinge line

y) an upward-arched fold with the oldest rocks exposed along the hinge line

z) a downward-arched fold with the youngest rocks exposed along the hinge line

ANSWER: W (an upward-arched fold with the youngest rocks exposed along the hinge line)

1. A zone of shallow earthquakes along normal faults is typical of

w) Divergent boundaries x) transform boundaries y) subduction zones z) collision boundaries

ANSWER: X (transform boundaries)

1. A geologist could use the principle of inclusion to determine the relative age of

w) fossils x) metamorphism y) shale layers z) xenoliths

ANSWER: z (xenoliths)