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TOSS-UP

- Matinta Ar Ar & PR Marithus 教教教·蒙·豫 1) LIFE SCIENCE Multiple Choice Which of the following anatomical structures is missing in the hagfish: Mytime ## # 18 PR Milling 素 基 · 该 序 Implitute 教教教·後然 Millinin 教養 養 學
 - W) heart

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- X) brain Y) notocord
 - Z) jaw

ANSWER: Z) JAW

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BONUS

1) LIFE SCIENCE Short Answer Name all of the following 4 organisms that are echinoderms: squid; snails; starfish; lobsters

ANSWER: STARFISH

TOSS-UP

- 2) PHYSICAL SCIENCE *Multiple Choice* Which of the following is the most common electronic device used for storing electric energy in a process commonly called charging:
- W) capacitor
- X) transformer
- Y) rectifier
- Z) semiconductor

ANSWER: W) CAPACITOR

BONUS

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2) PHYSICAL SCIENCE *Short Answer* What modern solid-state electronic device is used as an amplifier in modern radios and, through its wide use as an electronic switch, is a basic component in Timsitute star star star modern logic circuits? ANSWER: TRANSISTOR Mystrute 300

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- 3) EARTH SCIENCE *Multiple Choice* Giant kelp found in oceans do NOT possess which of the following structures:
- W) holdfasts
- X) gas bladders
- Y) stipes

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Z) roots

ANSWER: Z) ROOTS

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3) EARTH SCIENCE *Short Answer* What numerical albedo value is given to a surface that reflects 100% of incident light?

ANSWER: 1

TOSS-UP

- 4) MATH Multiple Choice Which of the following is TRUE:
- W) every real number has a reciprocal
- X) the product of two integers is always positive
- Y) the quotient times the divisor equals the dividend
- Z) the product of two numbers is greater than either factor

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ANSWER: Y) THE QUOTIENT TIMES THE DIVISOR EQUALS THE DIVIDEND

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4) MATH *Short Answer* Evaluate the following and give your answer as a proper fraction in lowest terms: $\frac{3}{16} + \frac{5}{8} - \frac{1}{4}$

ANSWER: $\frac{9}{16}$

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- 5) GENERAL SCIENCE Multiple Choice People who are lactose intolerant are unable to digest the sugar present in which of the following:
- W) milk

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- X) wheat
- Z) eggs Y) peanuts

ANSWER: W) MILK

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5) GENERAL SCIENCE *Short Answer* Arrange the following 3 choices in INCREASING order of distance: 1 mile; 2 kilometers; 1,600 yards

ANSWER: 1,600 YARDS; 1 MILE; 2 KILOMETERS

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TOSS-UP

6) LIFE SCIENCE Short Answer What is the most common term used for the biological process of converting atmospheric nitrogen into a form readily available for use in organisms?

ANSWER: NITROGEN FIXATION (ACCEPT: FIXATION)

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- Marithus 教育 养 · 養 序》 6) LIFE SCIENCE Multiple Choice Which of the following groups of organisms is most commonly associated with the ability to fix nitrogen: Myithin Mark 18 18 Military Market 18 18 Militale Mark 18 18
- W) plants
- X) animals (A)
- Y) plants and animals
- Z) bacteria

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Deithin Mark is fin ANSWER: Z) BACTERIA Mailing # 3

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- 7) PHYSICAL SCIENCE Multiple Choice Which of the following is the inverse of electrical resistance:
- W) voltage

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- X) conductivity
- Z) ohms Y) amperage

ANSWER: X) CONDUCTIVITY

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- 7) PHYSICAL SCIENCE *Multiple Choice* Which of the following is the current carrier in a typical electrical conductor:
 - W) free protons
 - X) mobile electrons
- Z) hydrogen ions

ANSWER: X) MOBILE ELECTRONS

8) EARTH SCIENCE *Short Answer* Which 2 of the following 4 choices represent the suspended load of a river that gives a slow-moving river a cloudy appearance: gravel; clay; silt; sand

ANSWER: CLAY; SILT

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8) EARTH SCIENCE Multiple Choice The average depth of the ocean basin floor is:

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- W) 1,000 to 2,000 meters
- X) 2,000 to 4,000 meters
- Z) 6,000 to 10,000 meters

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ANSWER: Y) 4,000 TO 6,000 METERS

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9) MATH *Short Answer* Solve the formula, I = prt, for r:

ANSWER:
$$r = \frac{I}{pt}$$
 (ACCEPT: $\frac{I}{pt}$)

BONUS

9) MATH Short Answer Multiply the following 3 fractions and give your answer as a proper fraction in simplest terms: $\frac{3}{10} \times \frac{5}{7} \times \frac{1}{2}$

ANSWER:
$$\frac{3}{28}$$

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TOSS-UP

10) GENERAL SCIENCE *Short Answer* Name all of the following 4 choices that are NOT SI units: meter; kilogram; degree Celsius; mole

ANSWER: DEGREE CELSIUS

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10) GENERAL SCIENCE Short Answer Convert 5 meters per second to kilometers per hour:

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ANSWER: 18

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- 11) LIFE SCIENCE Multiple Choice Which of the following is a lipid:
- W) lipase

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- X) myoglobin
- Y) trypsin
- Z) corn oil

ANSWER: Z) CORN OIL

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BONUS

- (read as: KYE-tin) by percent of body weight: 11) LIFE SCIENCE Multiple Choice Which of the following organisms contains the most chitin
 - W) leopard
 - X) ant
 - Y) squid
 - Z) whale

ANSWER: X) ANT

TOSS-UP

- 12) PHYSICAL SCIENCE Multiple Choice Nitrogen, sulfur, and selenium are all:

 W) metals
 - W) metals
 - X) nonmetals
 - Y) metalloids

ANSWER: X) NONMETALS

BONUS

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加加州 12) PHYSICAL SCIENCE Short Answer Name all of the following 3 substances that are allotropes or different chemical forms of carbon: diamond; graphite; topaz

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ANSWER: DIAMOND; GRAPHITE

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- Matinta Mark is 1980 13) EARTH SCIENCE Multiple Choice Which of the following is a volcanic rock that is so lightweight that it can sometimes float on water:
 - W) obsidian

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- X) pitchstone
- Z) basalt Y) pumice

ANSWER: Y) PUMICE

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BONUS

13) EARTH SCIENCE *Short Answer* What 4 planets of our solar system have the highest mean density?

ANSWER: MERCURY; VENUS; EARTH; MARS (in any order)

TOSS-UP

- 14) MATH Multiple Choice Which of the following best describes two angles that share a common side and a common vertex and do not overlap:
- y parallel
 Y) alternate
 Z) vertice
- X) parallel

ANSWER: W) ADJACENT

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14) MATH Short Answer Subtract the following 2 polynomials and simplify: $(6x^2 - 7x + 13) - (-x^2 + 4x - 3)$ ANSWED 7.2

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Asitute the by Service of the servic ANSWER: $7x^2 - 11x + 16$ Military Market 18

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Matinta Mar At ' 18 PR 15) GENERAL SCIENCE Short Answer What is the common name for the organic solvent which is the main ingredient in nail polish remover?

ANSWER: ACETONE

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15) GENERAL SCIENCE Short Answer What element makes up about 24% of the Sun's mass?

ANSWER: HELIUM

TOSS-UP

16) LIFE SCIENCE Short Answer What parts of a flower make up the corolla?

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ANSWER: PETALS

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16) LIFE SCIENCE Short Answer Name all of the following 4 plants that have male and female flowers on the same plant: apple tree; tomato; maple tree; pumpkin

ANSWER: ALL

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17) PHYSICAL SCIENCE Short Answer How many carbons are there in an ethanol molecule?

ANSWER: 2

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BONUS

- 17) PHYSICAL SCIENCE Multiple Choice Which of the following is LEAST accurate regarding most solids:
- W) particles in a solid vibrate around fixed positions
- X) particles in a solid have no kinetic energy
- Z) solids have definite melting points in their pure state

ANSWER: X) PARTICLES IN A SOLID HAVE NO KINETIC ENERGY

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TOSS-UP

- Mylitute Make '& 18) EARTH SCIENCE Multiple Choice Which of the following volcanic landforms is characterized by relatively quiet eruptions with little or no pyroclastic flows:
 - W) stratovolcano
 - X) cinder cone
 - Y) shield
 - Z) caldera

ANSWER: Y) SHIELD

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- 18) EARTH SCIENCE *Multiple Choice* Mudstone, or mudrock, is which of the following:
- W) fine-grained sedimentary rock
- X) coarse-grained sedimentary rock
- Y) fine-grained metamorphic rock

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Z) coarse-grained metamorphic rock

ANSWER: W) FINE-GRAINED SEDIMENTARY ROCK

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19) MATH *Short Answer* If an ordered pair has an *x*-coordinate of zero, its graph lies on what part of the coordinate plane?

ANSWER: Y-AXIS (ACCEPT: VERTICAL AXIS)

BONUS

19) MATH Short Answer Name all of the following 4 fractions that are equivalent to $\frac{2}{3}$:

$$\frac{5}{9}$$
; $\frac{16}{24}$; $\frac{36}{54}$; $-\frac{4}{6}$

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ANSWER: $\frac{16}{24}$; $\frac{36}{54}$

TOSS-UP

20) GENERAL SCIENCE *Short Answer* In the United States, what crop is primarily used for ethanol fuel production?

ANSWER: CORN (ACCEPT: MAIZE)

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20) GENERAL SCIENCE *Short Answer* Name whether the following 3 substances are primarily derived from plants or animals, respectively: coal; cotton; lard

ANSWER: COAL = PLANT; COTTON = PLANT; LARD = ANIMAL

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21) LIFE SCIENCE Short Answer How many chambers does the heart of a shark have?

ANSWER: 2

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BONUS

21) LIFE SCIENCE Short Answer Name all of the following 4 groups of organisms in which mitosis occurs: birds; reptiles: mollusks: bacteria

ANSWER: BIRDS; REPTILES; MOLLUSKS (ACCEPT: ALL BUT BACTERIA)

TOSS-UP

22) PHYSICAL SCIENCE Short Answer What is the density, in grams per cubic centimeter, of a sample of plastic that floats with 45% of its volume submerged in pure water?

ANSWER: 0.45

BONUS

22) PHYSICAL SCIENCE Short Answer Ignoring friction, what is the acceleration, in meters per second squared, when 1,000 newtons of force are applied to move a 200-kilogram crate across a Jag St Haritum Timbrithth An At 13 19 level floor?

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(Solution: A = F/M; A = 1000/200; $A = 5 \text{ m/sec}^2$)

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- 23) EARTH SCIENCE Multiple Choice Marble is a metamorphic rock primarily composed of:
- W) quartz

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- X) granite
- Y) dolomite

ANSWER: Z) CALCITE

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functions to protect life on Earth? 23) EARTH SCIENCE Short Answer What unstable substance does the stratosphere contain that

ANSWER: OZONE (ACCEPT: OZONE LAYER or O₃)

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TOSS-UP

Imhiting 紫绿绿绿 24) MATH Short Answer If 2 coplanar parallel lines are intersected by a transversal line, what is the sum of all angles formed?

ANSWER: 720

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N & 教教 Milling 24) MATH Short Answer Malcolm drove his car a distance of 2 miles in a time of 2 minutes 30 seconds. Find his average speed, in miles per hour:

Millinin 教育 养 · 婆 序》 ANSWER: 48 Timitinin Market

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Matinta Mar No. 18 PR 25) GENERAL SCIENCE Short Answer What is the name for the plastic-ware consisting of two overlapping round plastic or glass dishes used by microbiologists in which to grow bacteria?

ANSWER: PETRI DISH (ACCEPT: PETRI)

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Matitude Mar At 12 198 25) GENERAL SCIENCE Multiple Choice Which of the following is typically used by a microbiologist for growing bacterial cultures in petri dishes:

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- W) autoclave

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- Y) laminar flow hood
 Z) fume hood

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ANSWER: X) INCUBATOR

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