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TOSS-UP

Matinta Mar At ' & PR 1) BIOLOGY Short Answer What is the most common term for the substance recognized as foreign and able to elicit antibody production: Millinin 教養 養 學

ANSWER: ANTIGEN

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Mylithe # 3

Y.

Y.

Y.

Y.

Y.

Y.

1

Y.

Y.

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BONUS

- 1) BIOLOGY Multiple Choice Mendel succeeded in forming the basis of modern hereditary theory in part because of his training:
- X) in calligraphy of scientific manuscripts for the Royal Austrian Science Society
 Y) in probability and mathematics
 Z) as a scientific apostolic pure: W) as a printer of rare and scientific documents
 X) in calligraphy of scientific manner.

ANSWER: Y) IN PROBABILITY AND MATHEMATICS

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TOSS-UP

2) CHEMISTRY *Short Answer* Which of the halogens is a liquid at room temperature:

ANSWER: BROMINE

BONUS

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2) CHEMISTRY Short Answer What is the general term for a salt of one of the halogens? Military Market & P.C. Militime 新春 · 養 序》

ANSWER: HALIDE

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3) PHYSICS Short Answer What is the unit for electric current equal to 1 coulomb per second?

ANSWER: AMPERE (ACCEPT: AMP)

BONUS

- 3) PHYSICS Multiple Choice Which of the following is the most dense at standard temperature and pressure:
- W) 10 kilograms of pure water
- X) 10 kilograms of tungsten

Y.

Y.

Y.

Y.

Y.

1

1

Ph.

Y.

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Z) 1 kilogram of mercury

ANSWER: X) 10 KILOGRAMS OF TUNGSTEN

(Solution: W = 19.3 g/cc, Hg = 13.5 g/cc, Ag = 10.5 g/cc, $H_2O = 1.0 \text{ g/cc}$)

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TOSS-UP

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4) ASTRONOMY Short Answer As of the summer of 2001, what planet was shown to have the most known moons orbiting it in our solar system? Militation of the state of the Intritute 病 并沒然

ANSWER: SATURN

BONUS

4) ASTRONOMY *Short Answer* What is another name for minor planets, starlike bodies, or planetoids, the vast majority of which have orbits roughly midway between the orbits of Jupiter and i unet Mars?

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ANSWER: ASTEROIDS

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5) MATH *Short Answer* What is the perimeter of a right triangle whose leg lengths are 6 and 8 and whose hypotenuse is 10?

ANSWER: 24

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Y.

Y.

Y.

Y.

Y.

1

1

Y.

Y.

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(Solution: perimeter = 6+8+10=24)

BONUS

5) MATH Short Answer The average of -40, 36, 5, 0, 10 and x is 5. What is the value of x?

ANSWER: 19

TOSS-UP

- 6) EARTH SCIENCE Multiple Choice Boundaries that form where lithospheric plates are Molitule Mark if the breaking apart to move away from each other are called:
- W) transform boundaries
- X) divergent margin boundaries

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- Y) suture zone boundaries
- Z) subduction boundaries

ANSWER: X) DIVERGENT MARGIN BOUNDARIES

6) EARTH SCIENCE Short Answer Based on compositional boundaries, name the three different Militally 教育 养 · 婆 序》 layers that make up the structure of the solid portion of the planet Earth?

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ANSWER: CORE, MANTLE, CRUST (accept in any order)

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7) GENERAL SCIENCE *Short Answer* What do the abbreviations TC and TD stand for that are seen on some laboratory pipettes?

ANSWER: TO CONTAIN AND TO DELIVER

BONUS

7) GENEAL SCIENCE *Short Answer* What Greek letter is used to symbolize wavelength?

ANSWER: LAMBDA

TOSS-UP

Milling 素素。養學

- 8) COMPUTER SCIENCE Multiple Choice Software that is often distributed free of charge and usually intended for sale after a trial period is called:

1

Y.

Y.

Y.

Y.

10

1

Y.

Y.

- X) shareware
 Y) onen
 - Z) public-domain

ANSWER: X) SHAREWARE

BONUS

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8) COMPUTER SCIENCE Short Answer The binary number 10101 (read as: one, zero, one, zero, one) is equivalent to what decimal number?

ANSWER: 21

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(Solution: 1 + 4 + 16 = 21)

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9) BIOLOGY *Short Answer* What is the most common scientific term for plant water loss through stomata:

ANSWER: TRANSPIRATION

BONUS

9) BIOLOGY Short Answer What are the four main human blood types?

ANSWER: O, A, B, AND AB (accept in any order)

- 10) CHEMISTRY Multiple Choice Which of the following atomic features is the most important in controlling the reactivity of an atom:
- X) valence-shell electrons
 Y) protons

Y.

Y.

Y.

Y.

Y.

1

1

Y.

Y.

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Z) neutrons

ANSWER: X) VALENCE-SHELL ELECTRONS

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BONUS

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10) CHEMISTRY Short Answer What is the rule that states that main-group elements tend to undergo reactions that leave them with 8 outer-shell electrons?

Militalle Market 18 18 ANSWER: OCTET RULE

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Marithle Mar # 12 180 11) PHYSICS Short Answer How many nanometers are in an angstrom?

ANSWER: 0.1 (ACCEPT: ONE-TENTH)

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BONUS

11) PHYSICS Short Answer For a perfectly spherical planet of uniform density, the gravitational acceleration at a point half way to the surface from its contact will be a surface from its con gravitational acceleration at the surface?

ANSWER: 1/2

Milital And Service

1

Y.

Y.

Y.

1

1

Y.

Y.

TOSS-UP

12) ASTRONOMY Short Answer What planet is the most distant gas giant from the sun?

ANSWER: NEPTUNE

BONUS

12) ASTRONOMY Multiple Choice Refracting telescopes always contain which of the following:

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- W) mirrors
- X) lenses
- Y) television systems
- Z) film

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ANSWER: X) LENSES Mylitate At 18 18 Milling 新菜 · 養 「死

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13) MATH Short Answer What is the remainder of (148 + 10) / 7?

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ANSWER: 4

1

Y.

Y.

Y.

Y.

Y.

1

Y.

Y.

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BONUS

13) MATH Short Answer If y varies directly as x, and y = 42 when x = 30, find y if x = 45:

ANSWER: 63

TOSS-UP

- Matitude Mar At 12 180 14) EARTH SCIENCE Multiple Choice Which of the following types of moraines does NOT parallel ice flow:
 - W) medial
- Y) double lateral

 Z) end

ANSWER: Z) END

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- 14) EARTH SCIENCE Multiple Choice The combination of lingering air and abundance of particulates and other pollutants in the air over cities produces what is commonly known as the:
- W) urban depletion area
- X) urban dust dome
- Y) urban frontal zone
- Z) urban overcast zone

ANSWER: X) URBAN DUST DOME

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Military Market 18 15) GENERAL SCIENCE Short Answer Rounded to the nearest decimal place, convert 13 Kelvin into degrees Centigrade:

ANSWER: -260

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Y.

Y.

Y.

Y.

Y.

1

Y.

Y.

BONUS

15) GENERAL SCIENCE Short Answer Express the number 9587.3 in proper scientific notation with the correct amount of size is: with the correct amount of significant figures:

ANSWER: 9.5873×10^{3}

TOSS-UP

- 16) COMPUTER SCIENCE Multiple Choice The file extension .MID (read as: dot, M, I, D) usually means that the file can be opened by what type of program: Milling 教 养婆 %
- W) text editor X) grant

 - Y) database
 - Z) music

ANSWER: Z) MUSIC

BONUS

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16) COMPUTER SCIENCE Short Answer The decimal number 15 is equivalent to what octal number? Mikituto Make 18 18 Militate A H W Ministate ## # 13 PR Myithin Mark 18 18

ANSWER: 17

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Matinte 新春養療 17) BIOLOGY Short Answer The spines of cacti are a modification of what plant structure?

ANSWER: LEAF (ACCEPT: LEAVES)

BONUS

17) BIOLOGY *Short Answer* What is the most common biochemical term for the degradative phases of metabolism?

ANSWER: CATABOLISM

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Mylithe # 3

Y.

Y.

Y.

Y.

Y.

1

1

Y.

Y.

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TOSS-UP

18) CHEMISTRY Short Answer In the periodic table, what name is given to the number representing the total of a given element's protons and neutrons?

ANSWER: ATOMIC MASS

BONUS

18) CHEMISTRY Short Answer What is the general term for a bond in which the shared bonding electrons are attracted somewhat more strongly by one atom than the other? Inthitute 新春 · 養 序 Inthitute 新春 · 養 序。

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ANSWER: POLAR COVALENT BOND

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19) PHYSICS Short Answer In additive color synthesis, what do equal proportions of two primary colors create?

ANSWER: A SECONDARY COLOR

BONUS

19) PHYSICS Short Answer If the speed of a charged particle is doubled while it is moving in a circular orbit in a uniform magnetic field. circular orbit in a uniform magnetic field, by what multiple will the orbital radius increase?

ANSWER: 2

Y.

Y.

Y.

1

1

Ph.

Y.

TOSS-UP TOSS-UP

20) ASTRONOMY Short Answer Which of the Galilean moons orbiting Jupiter is the most geologically active object in the entire solar system, commonly referred to as the "pizza moon," and has the longest diameter of 3,630 kilometers?

ANSWER: 10

BONUS

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planet? 20) ASTRONOMY Short Answer The Tharsis bulge is the major geological feature of what

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ANSWER: MARS

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21) MATH Short Answer The price of a postage stamp changes from 33 cents to 34 cents. What is the percent increase in price?

ANSWER: 3 (ACCEPT: 3.03)

BONUS

21) MATH Short Answer After a 20% increase, the new price of a tennis racket is \$180.00. What was the original price of the racket?

ANSWER: \$150.00

Y.

Y.

1%

Y.

10

1

Y.

Y.

TOSS-UP

- 22) EARTH SCIENCE Multiple Choice What scale is used to classify the strength of hurricanes based on its greatest wind speed: Militality 教育 科·達 序》 Mulitute Mark 18 182 Mulitate # # 18
- W) Saffir-Simpson
 X) Beauford

 - Y) Modified Mercalli
 - Z) Fujita

ANSWER: W) SAFFIR-SIMPSON

BONUS

22) EARTH SCIENCE Multiple Choice Which of the following is NOT classified as a low-level cloud: Mainth Mark 18 18 Ministate Market 18 18 Militation # # 18 18 Millitte Mit H. 13 PR

- W) altostratus
- X) nimbostratus
- Y) stratocumulus
- Z) stratus

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Marithule Mark 18 182 ANSWER: W) ALTOSTRATUS Marithin Mar # 3

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23) BIOLOGY Short Answer To prepare a tincture of iodine the iodine is mixed in what general type of solvent?

ANSWER: ALCOHOL

Y.

Y.

Y.

Y.

1

1

Y.

Y.

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BONUS

23) BIOLOGY Short Answer What person, in 1676, reported to the Royal Society of London the first known observations of protozoans?

ANSWER: ANTON VAN LEEUWENHOEK (ACCEPT: LEEUWENHOEK)

Maritule # # 18 18

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TOSS-UP

24) CHEMISTRY Short Answer What is the name of the element with the symbol Sb?

ANSWER: ANTIMONY

BONUS

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24) CHEMISTRY Short Answer Which element has the lowest ionization energy of all stable neutral atoms? Marithus Mark 18 180 Marithus Market 18 180 Milling 新科·漢·豫

ANSWER: CESIUM (ACCEPT: CS)

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Matitude Mar At 13 1980 25) PHYSICS Short Answer According to the typical color triangle, what are the three primary colors of light?

ANSWER: RED, GREEN, AND BLUE

Marithte Mar 18

Milital And St. Co.

Y.

Y.

W.

Y.

Y.

Y.

1

Y.

1

4. 数米洛尔

1. 数米%

BONUS

Mulitude star # 15 Pile 25) PHYSICS Short Answer That no two electrons in an atom can have an identical set of quantum numbers in best brown as a last in i. 1.2 numbers is best known as what principle?

mytitute 新光·漢·豫 ANSWER: PAULI EXCLUSION PRINCIPLE (ACCEPT: EXCLUSION PRINCIPLE) Milititle star 14.13