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TOSS-UP

Marith Mar ph '8 PR **加州州 紫 珠 溪 溪** 1) CHEMISTRY *Multiple Choice* The First Law of Thermodynamics equates:

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W) velocity and pressure

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- Y) heat and work
 Z) tom-

Mylithe star of

Y.

Y.

Y.

Y.

Y.

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1

1

Y.

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neat and work

Z) temperature and energy

ANSWEE ANSWER: Y) HEAT AND WORK

BONUS 1/4

1) CHEMISTRY Short Answer Convert an atmospheric pressure of 0.25 atmospheres into mm Hg:

ANSWER: 190

13 1/2 **TOSS-UP**

modified the state of the state 2) PHYSICS Short Answer What is the common name for the instrument consisting of a weighted glass tube or bulb which, when floated in a liquid, indicates the liquid's relative density?

ANSWER: HYDROMETER

BONUS

Moritally Market 18 180 2) PHYSICS Short Answer According to conventional nomenclature of nuclear science, what case and letter is used to symbolize mass number? ANSWER: UPPER CASE A Milling 新春春·養學 On.

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3) BIOLOGY *Short Answer* Biologists usually refer to the head of a tapeworm by what name?

ANSWER: SCOLEX

BONUS

- 3) BIOLOGY *Multiple Choice* What is the joint that is formed by the articulation of the tibia, fibula, and femur:
 - W) wrist

Y.

1

PA.

Y.

Y.

1

1

Y.

- X) knee
- Y) elbow
- Z) ankle

ANSWER: X) KNEE

TOSS-UP

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4) ASTRONOMY Multiple Choice Olympus Mons, one of the largest volcanoes in our solar system, is located on which planet:

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- W) Mars
- X) Venus

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Y) Titan Z) C-''' Z) Callisto

ANSWER: W) MARS

4) ASTRONOMY Short Answer Name the Greek astronomer who ranked the naked-eye stars into six groups of relative brightness in the second century B.C.?

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Asitute the by Service of the servic ANSWER: HIPPARCHUS Militing ## 13

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5) MATH Short Answer The number 22.5 is 5 percent of what number?

ANSWER: 450

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BONUS

- 5) MATH *Multiple Choice* Which of the following numbers is divisible by 9:
 - W) 3191

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1

Y.

Y.

Y.

Y.

10

1

Y.

Y.

- X) 3527
- Y) 212,526
- Z) 439,327

ANSWER: Y) 212,526

(Solution: sum of the numbers divisible by 9)

TOSS-UP

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Marithe Mar # 13 19 6) EARTH SCIENCE Short Answer Many large volcanoes are marked near their summit by a large, basin-shaped volcanic depression, more or less circular in form and steep-walled, which is called? Marithus Mark 18 180 Mythun 病 林 · 寶 序

ANSWER: CALDERA

BONUS

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- 6) EARTH SCIENCE Multiple Choice The governing factor that controls flow within the Molitule And At 'S P. Military of the State of the St Militato An At 18 18 Hydrologic System is:
- W) humidity X) capillary pressure
 - Y) vapor pressure
 - Z) gravity

ANSWER: Z) GRAVITY Mikitute 横林·接风

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7) GENERAL SCIENCE *Short Answer* How many significant figures are in the number 3.8400×10^4 ? (read as: three point eight four zero zero times ten to the fourth power)

ANSWER: 5

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Y.

Y.

Y.

Y.

Y.

Y.

1

Y.

Y.

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BONUS 3

7) GENERAL SCIENCE Short Answer To the nearest gram, convert 20 ounces into grams:

ANSWER: 567 (ACCEPT: 566 – 568)

(Solution: $20 \times 28.35 = 567$)

TOSS-UP

- 8) COMPUTER SCIENCE *Multiple Choice* Which of the following would offer the most protection against power-failure data loss:
- W) UPS
- X) surge protector
- Y) data backup
- Z) line conditioner

ANSWER: W) UPS

BONUS

8) COMPUTER SCIENCE *Short Answer* What is the name for the measure of memory or storage capacity that is equal to 2 to the 40th power bytes or, in decimal, approximately a thousand gigabytes?

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ANSWER: TERABYTE

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9) CHEMISTRY Short Answer Acid rain, a major environmental problem, results primarily from the production of what aqueous acid?

ANSWER: SULFURIC ACID (ACCEPT: H₂SO₄)

9) CHEMISTRY Short Answer What is the name for the apparatus commonly found in chemistry labs that is designed to store materials in dry air that consists of a glass bowl, an air-tight lid, and a place where a drying agent, such as silica gel, is placed:

ANSWER: DESSICATOR

Y.

Y.

Y.

Y/L

Y.

1

1

Y.

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10) PHYSICS Short Answer What is the most common term for a change in velocity divided by the time it takes to make the change?

ANSWER: AVERAGE ACCELERATION

BONUS

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- 10) PHYSICS Multiple Choice How would one compute the change in centripetal force if an object moving with uniform circular motion triples its radius while maintaining the same kinetic energy:
- W) multiplying by 3
- X) dividing by 3
- Y) multiplying by 9

Z) dividing by 9 ANSWER: X) DIVIDING BY 3

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(Solution: $F=mv^2/R$; conservation of energy => v constant) Mylithite ## # 18 PR Delitate the the life life

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11) BIOLOGY Short Answer Where is intercellular fluid normally found?

ANSWER: OUTSIDE OF CELLS (ACCEPT: IN BETWEEN CELLS OR IN THE INTERSTITIUM)

BONUS 1/2

- 11) BIOLOGY Multiple Choice Koch's (read as: Coke's) Postulates have to do mainly with which of the following:
- W) culturing of viruses

Y.

Y.

Y.

Y.

Y.

Y.

1

1

Y.

- Y) proving what bacterial agents cause what diseases
 Z) how to prove that a certain cone Z) how to prove that a certain gene causes a certain disease

ANSWER: Y) PROVING WHAT BACTERIAL AGENTS CAUSE WHAT DISEASES

TOSS-UP

Marithe Mar 14 13 1980 12) ASTRONOMY Short Answer How many Viking spacecraft have landed on Mars?

ANSWER: 2

BONUS

12) ASTRONOMY Multiple choice Which star is the next nearest neighbor to the Sun beyond the Alpha Centauri system having the largest known proper motion of any star:

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- W) Wolf 359
- X) Sirius
- Y) Barnard's Star
- Z) 61 Cygni

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ANSWER: Y) BARNARD'S STAR Maritule Market of Police Myithe Mark 13 1980 Skilling the 13 PR

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13) MATH *Multiple Choice* Which of the following is a rational number:

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- W) $1+\sqrt{4}$
- X) $2+\sqrt{5}$
- Y) $\sqrt{6}$
- Σ) π

Y.

Y.

Y.

Y.

Y.

Y.

1

Y.

Y.

ANSWER: W) $1+\sqrt{4}$

BONUS

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13) MATH *Short Answer* If the average of 5 numbers is 16, what is the sum of the 5 numbers?

ANSWER: 80

TOSS-UP

14) EARTH SCIENCE Short Answer What is the name of the layer lying between the base of the Earth's lithosphere and a depth of about 2900 kilometers, where rock exists in a hot, weak, plasticlike form?

ANSWER: ASTHENOSPHERE

BONUS

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- 14) EARTH SCIENCE Multiple Choice Which of the following geological periods is oldest? Milital At At & P.C. Molitule Mark if the
- W) Cambrian
- X) Cretaceous
- Y) Tertiary

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Z) Devonian

Marithus Mark 18 180 ANSWER: W) CAMBRIAN A the state of the

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15) GENERAL SCIENCE Short Answer Pure gold is how many karats?

ANSWER: 24

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Y.

Y.

1

1

Y.

1

1

Ph.

Y.

BONUS

15) GENERAL SCIENCE Short Answer How many yards are in 1 rod?

ANSWER: 5.5

TOSS-UP

mytitute star place of the state of the stat 16) COMPUTER SCIENCE Short Answer What does the acronym SRAM stand for?

ANSWER: STATIC RANDOM ACCESS MEMORY

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BONUS 1/2

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Matitude Mar At 12 180 16) COMPUTER SCIENCE Multiple Choice What is the hexadecimal equivalent of the binary number 1011 (read as: one, zero, one, one)?

W) 7

X) 8 Y) A

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ANSWER: Z) B

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阿纳州州 紫 茶 溪 17) CHEMISTRY Short Answer Which acid-base theory states that any molecule or ion that can produce a proton is an acid, and any that can take up a proton is a base:

ANSWER: BRØNSTED-LOWRY THEORY (ACCEPT: BRØNSTED)

17) CHEMISTRY Short Answer What general chemical term best describes a metal that can be drawn out into thin wire or threads without breaking?

ANSWER: DUCTILE

Y.

Y.

Y.

Y.

1

1

Y.

Y.

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Marithus Mar # 18 180

TOSS-UP

18) PHYSICS Short Answer When mixing equal proportions of green and red light, what color light is produced? 面似油水 myitute 赫赫 赫·蒙·豫

ANSWER: YELLOW

BONUS

18) PHYSICS Short Answer For an electric saw that draws 8 amps on a 120 volt line, what is the Inditute Mark is 18 resistance of the saw?

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ANSWER: 15 OHMS

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(Solution: I = V/R, R = V/I, R = 120/8 = 15)

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Matitude Mar ph 12 180 19) BIOLOGY Short Answer The stigma, style, and ovary make up what part of a plant?

ANSWER: CARPEL (ACCEPT: PISTIL)

BONUS

- 19) BIOLOGY *Multiple Choice* Microtubules, intermediate filaments, and microfilaments are integral components of what basic infrastructure of a subspace in the components.
 - W) flagella
 - X) cillia

Y.

1

Y.

Y.

1

1

1

Ph.

Y.

Inhihite 新春·養 然

- Y) cytoskeleton Z) cell wall

ANSWER: Y) CYTOSKELETON

- 20) ASTRONOMY Multiple Choice The geology of the surface of Venus appears to be dominated by:
- W) volcanoes
- Y) erosion by flowing water
 Z) old impact craters

ANSWER: W) VOLCANOES

Marithus Mark 18 182

20) ASTRONOMY Short Answer At the Sun's distance of 8 kiloparsecs from the Galactic center, how many years would it take for material here to complete one rotational circuit?

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ANSWER: 225 MILLION Milling 新菜 · 養 序 Mithile the the light of the li Myithe Mark 13 1980

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Matitude Mar At 12 198 21) MATH *Short Answer* Convert $\frac{5\pi}{3}$ radians into degrees:

ANSWER: 300°

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Y.

Y.

Y.

Y.

Y.

1

1

Y.

Y.

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BONUS

Matitude Mark to 180 21) MATH *Short Answer* What are the median, mean and mode of the following set of numbers: 2, 3, 3, 8, 8, 8, 10, 14

ANSWER: MEDIAN = 8.; MEAN = 7; MODE = 8

TOSS-UP

22) GENERAL SCIENCE Short Answer If you cut a Mobius Strip in half down the center of the strip, how many pieces do you end up with? Milliante state state is the Mininte 教教教·後序

ANSWER: ONE

BONUS

22) GENERAL SCIENCE Short Answer If a woman's mass on Earth is 60 kg, what is her mass, in kilograms, on a planet where the gravity is six times less?

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ANSWER: 60 (ACCEPT: THE SAME)

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- 23) CHEMISTRY Multiple Choice Of the following, which is the strongest base:

 W) potassium hydrovide
- W) potassium hydroxide
- X) barium hydroxide

Mylithe star & 3

Y.

1

W.

Y.

Y.

1

1

Ph.

Y.

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- Y) calcium hydroxide
- Z) sodium hydroxide

ANSWER: Z) SODIUM HYDROXIDE

BONUS

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which gives off a red color: 23) CHEMISTRY Short Answer In a flame test for lithium, sodium, potassium, and magnesium,

ANSWER: LITHIUM

TOSS-UP

- 24) PHYSICS Multiple Choice Total distance traveled divided by total elapsed time is most commonly called:
- W) velocity
- Y) average velocity
 Z) average

ANSWER: Z) AVERAGE SPEED

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24) PHYSICS Short Answer If a wave has a frequency of 50 hertz, what is its period, in seconds?

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ANSWER: 0.02 SECONDS

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(Solution: period = 1 / f) Milliam # 18

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Malithia Mar of 18 25) BIOLOGY Short Answer In an autologous tissue transplant, from whom does the person receive the tissue?

ANSWER: THEMSELVES

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- Mylithe Mar No. 18 18. 25) BIOLOGY Multiple Choice The margin of an ash tree leaf would most generally be called:
 - W) divided

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1

Y.

1

1

Y.

10

1

Y.

1

- z, serrate Z) lacerate Y) serrate

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ANSWER: Y) SERRATE

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