

ROUND ROBIN 3

TOSS-UP

1) LIFE SCIENCE *Multiple Choice* Vestigial (pronounced VES-ti-gee-al) structures:

- W) have no known function in their present owners
- X) function in an analogous fashion in all species
- Y) evolve homologously until functional
- Z) control nervous system functions

ANSWER: W) HAVE NO KNOWN FUNCTION IN THEIR PRESENT OWNERS

BONUS

1) LIFE SCIENCE *Short Answer* *Mallus ioensis* and *Mallus sylvestris* are the genera and species of what common tree?

ANSWER: APPLE

TOSS-UP

2) PHYSICAL SCIENCE *Multiple Choice* What is the decibel scale most often used to measure?

- W) size of bells
- X) magnitude of hurricanes
- Y) loudness of a sound
- Z) brightness of lights

ANSWER: Y) LOUDNESS OF A SOUND

BONUS

46) PHYSICAL SCIENCE *Multiple Choice* What is the name of the lowest energy subshell of an atom where electrons are found:

- W) s
- X) p
- Y) d
- Z) a

ANSWER: W) S

TOSS-UP

3) EARTH SCIENCE *Multiple Choice* Which of the following are the highest of the clouds in the troposphere and are composed entirely of ice crystals:

- W) stratus
- X) cirrus
- Y) cumulus
- Z) altocumulus

ANSWER: X) CIRRUS

BONUS

3) EARTH SCIENCE *Multiple Choice* In the Northern Hemisphere, when is the Earth the greatest distance from the sun:

- W) winter
- X) spring
- Y) summer
- Z) fall

ANSWER: Y) SUMMER

TOSS-UP

4) MATH *Short Answer* The identity element for addition is what number?

ANSWER: 0

BONUS

4) MATH *Short Answer* On a math test, 20 students averaged a score of 80% while 10 students averaged 90%. To the nearest whole number, what is the mean score of the entire class?

ANSWER: 83%

TOSS-UP

5) **PHYSICAL SCIENCE** *Multiple Choice* Which of the following units is used to measure electric current:

- W) voltage
- X) ohms
- Y) amperes
- Z) watts

ANSWER: Y) AMPERES

BONUS

5) **PHYSICAL SCIENCE** *Short Answer* What is the current, in amperes, running through a 200-watt light bulb running on a 100 volt power source.

ANSWER: 2 AMPERE

(Solution: current = watts/volts; $200/100 = 2$ ampere)

TOSS-UP

6) **GENERAL SCIENCE** *Short Answer* What is the scientific term often used by astronomers and geoscientists that refers to the point directly overhead?

ANSWER: ZENITH

BONUS

6) **GENERAL SCIENCE** *Multiple Choice* The light year is a useful unit of measure for the distance between:

- W) planets
- X) stars
- Y) atoms
- Z) asteroids

ANSWER: X) STARS

TOSS-UP

7) LIFE SCIENCE *Multiple Choice* Which of the following parts of a plant produces pollen:

- W) petal
- X) stamen
- Y) pistil
- Z) sepal

ANSWER: X) STAMEN

BONUS

7) LIFE SCIENCE *Multiple Choice* Plant cells differ from animal cells in that only plant cells possess:

- W) a nucleus
- X) mitochondria
- Y) a cell wall
- Z) lysosomes

ANSWER: Y) A CELL WALL

TOSS-UP

8) MATH *Short Answer* Solve the following equation: $\frac{3x}{4} = -12$

ANSWER: -16

BONUS

8) MATH *Short Answer* Convert the periodic decimal 0.8333 or 0.83 “bar” into a fraction:

ANSWER: 5/6

TOSS-UP

9) EARTH SCIENCE *Multiple Choice* When, in the geological time scale, did dinosaurs roam the Earth in large numbers:

- W) Jurassic
- X) Triassic
- Y) Cretaceous
- Z) Tertiary

ANSWER: W) JURASSIC

BONUS

9) EARTH SCIENCE *Multiple Choice* Meteor showers are composed of:

- W) large pieces of falling rocks
- X) dust and other debris from comets
- Y) falling stars
- Z) solar flares

ANSWER: X) DUST AND OTHER DEBRIS FROM COMETS

TOSS-UP

10) GENERAL SCIENCE *Short Answer* Rounded to the nearest whole number, how many centimeters are in 2 inches ?

ANSWER: 5

BONUS

10) GENERAL SCIENCE *Multiple Choice* Which of the following is NOT true of comets:

- W) they have highly elliptical orbits around the sun
- X) they leave a trail of particles that reflect sun light
- Y) they are made of rocks and condensed gases
- Z) they can only be seen when they pass through the atmosphere

ANSWER: Z) THEY CAN ONLY BE SEEN WHEN THEY PASS THROUGH THE ATMOSPHERE

TOSS-UP

11) EARTH SCIENCE *Short Answer* What is the name for the apparent force that causes hurricanes to be deflected to the right in the Northern hemisphere and to the left in the Southern hemisphere?

ANSWER: THE CORIOLIS EFFECT (ACCEPT: CORIOLIS FORCE)

BONUS

11) EARTH SCIENCE *Multiple Choice* The supercontinent Pangea started to break apart into our present day continents approximately how many million years ago:

- W) 100
- X) 200
- Y) 300
- Z) 400

ANSWER: X) 200

TOSS-UP

12) MATH *Short Answer* Add the following numbers: $0.5 + 0.05 + 0.005$

ANSWER: 0.555

BONUS

12) MATH *Short Answer* Remove the grouping symbols in the following expression: $-3x(2 - 5z)$

ANSWER: $-6x + 15xz$ (ACCEPT: $15xz - 6x$)

TOSS-UP

13) **PHYSICAL SCIENCE** *Multiple Choice* Which of the following is the least dense at standard temperature and pressure:

- W) 10 kilogram of pure water
- X) 10 kilogram of aluminum
- Y) 2 kilogram of silver
- Z) 1 kilogram of gold

ANSWER: W) 10 kilogram of pure water

BONUS

13) **PHYSICAL SCIENCE** *Short Answer* How many electron does the s subshell of an atom hold?

ANSWER: 2

TOSS-UP

14) **LIFE SCIENCE** *Multiple Choice* Which of the following is the scientific name for the knee cap:

- W) fibula
- X) malleus
- Y) patella
- Z) scapula

ANSWER: Y) PATELLA

BONUS

14) **LIFE SCIENCE** *Short Answer* Organize the following 3 tooth layers from the outermost to the innermost of a tooth: dentin, enamel, pulp

ANSWER: ENAMEL, DENTIN, PULP

TOSS-UP

15) GENERAL SCIENCE *Short Answer* How much does one cubic centimeter of water weigh at standard temperature and pressure?

ANSWER: 1 gram

BONUS

15) GENERAL SCIENCE *Multiple Choice* Craters on the moon is evidence of :

- W) lakes that once existed
- X) visits from other life forms
- Y) asteroid impacts
- Z) plate tectonics

ANSWER: Y) ASTEROID IMPACTS

TOSS-UP

16) PHYSICAL SCIENCE *Multiple Choice* The particles in an atom that determine which element it is are the:

- W) nuclei
- X) electrons
- Y) neutrons
- Z) protons

ANSWER: Z) PROTONS

BONUS

16) PHYSICAL SCIENCE *Multiple Choice* All metals:

- W) melt at high temperatures
- X) conduct heat and electricity
- Y) contain iron
- Z) react with air and water

ANSWER: X) CONDUCT HEAT AND ELECTRICITY

TOSS-UP

17) LIFE SCIENCE *Multiple Choice* Which of the following parts of a cell is most directly responsible for synthesizing proteins:

- W) ribosomes
- X) endoplasmic reticulum
- Y) vacuoles
- Z) lysosomee

ANSWER: W) RIBOSOMES

BONUS

17) LIFE SCIENCE *Short Answer* This structure that develops in the wall of the uterus functions in the pregnant mammals to transfer nourishment and oxygen and remove wastes from the developing offspring.

ANSWER: PLACENTA

TOSS-UP

18) EARTH SCIENCE *Short Answer* Which equinox marks the beginning of spring in the Northern Hemisphere?

ANSWER: VERNAL EQUINOX

BONUS

18) EARTH SCIENCE *Multiple Choice* Steep-sided volcanoes such as Mounts Rainier, Hood, and Fuji, are examples of what kind of volcanoes:

- W) stratovolcanoes
- X) tephra cone volcanoes
- Y) shield volcanoes
- Z) tower volcanoes

ANSWER: W) STRATOVOLCANOES

TOSS-UP

19) GENERAL SCIENCE *Multiple Choice* The Sahara Desert in Africa is what type of desert?

- W) subtropical
- X) continental
- Y) rain shadow
- Z) coastal

ANSWER: W) SUBTROPICAL

BONUS

19) GENERAL SCIENCE *Short Answer* What are the 4 physical states of matter?

ANSWER: SOLID, LIQUID, GAS, PLASMA

TOSS-UP

20) LIFE SCIENCE *Multiple Choice* Which of the following is the scientific name for the thigh bone:

- W) tibia
- X) femur
- Y) fibula
- Z) humerus

ANSWER: X) FEMUR

BONUS

20) LIFE SCIENCE *Short Answer* When a nerve message reaches the end of an axon it sends a message or impulse across the space between the nerves to continue its message to the next nerve. What is the space across which the message is sent usually called?

ANSWER: SYNAPSE

TOSS-UP

21) PHYSICAL SCIENCE *Multiple Choice* When a car turns a corner on dry pavement, the wheels do not slide sideways and the car completes the turn due to what interaction between the tires and the pavement?

- W) friction
- X) torque
- Y) drag
- Z) acceleration

ANSWER: W) FRICTION

BONUS

21) PHYSICAL SCIENCE *Multiple Choice* Complex carbohydrates are called:

- W) polypeptides
- X) polynuclides
- Y) polypropylenes
- Z) polysaccharides

ANSWER: Z) POLYSACCHARIDES

TOSS-UP

22) MATH *Short Answer* What kind of fraction has the absolute value of the numerator greater than the denominator?

ANSWER: IMPROPER FRACTION

BONUS

22) MATH *Multiple Choice* Which of the following numbers is divisible by 3:

- W) 5,163
- X) 2,465
- Y) 1,315
- Z) 313

ANSWER: W) 5,163

TOSS-UP

23) EARTH SCIENCE *Short Answer* With a Mohs' hardness of 1, what is the softest mineral known?

ANSWER: TALC

BONUS

23) EARTH SCIENCE *Multiple Choice* The first scientist to propose the hypothesis of the past existence of the supercontinent Pangea was:

- W) James Hutton
- X) John Filmore Hayford
- Y) Charles Darwin
- Z) Alfred Wegener

ANSWER: Z) ALFRED WEGENER

TOSS-UP

24) GENERAL SCIENCE *Short Answer* What vitamin is the most directly associated with the disease scurvy?

ANSWER: VITAMIN C

BONUS

24) GENERAL SCIENCE *Multiple Choice* Which of the following is the best estimate of what a gallon of water weighs in kilograms?

- W) 2 kilograms
- X) 4 kilograms
- Y) 6 kilograms
- Z) 8 kilograms

ANSWER: X) 4 KILOGRAMS

TOSS-UP

25) MATH *Short Answer* What is the name for a set that contains no elements?

ANSWER: EMPTY SET

BONUS

25) MATH *Short Answer* Solve the following expression: $2\sqrt{25} + 25 \div 5$

ANSWER: 15