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 ioeusis* 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
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

21) PHYSICAL SCIENCE  Multiple Choice  Complex carbohydrates are called:

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

ANSWER: Z) POLYSACCHARIDES

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

ANSWER: IMPROPER FRACTION

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