**Science Bowl Questions**

1. **TOSS-UP CHEMISTRY *Short Answer*** What is the name given to different forms of Carbon, like Graphite and Diamonds, based on their geometric structure?

**ANSWER: ALLOTROPE(S)**

1. **BONUS GEOLOGY *Multiple Choice*** How deep is the Mariana Trench, the deepest location on the Earth’s surface, in kilometers?

**W) 10 Kilometers**

**X) 11 Kilometers**

**Y) 12 Kilometers**

**Z) 13 Kilometers**

**ANSWER: X) 11 KILOMETERS**

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1. **TOSS-UP ASTRONOMY *Short Answer*** This constellation, with only 3 stars, is the smallest,

**ANSWER: CRUX**

1. **BONUS BIOLOGY *Short Answer*** What is the name of the eye test used to diagnose color blindness, and is primarily composed of a series of pictures of colored spots?

**ANSWER: ISHIHARA COLOR TEST**

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1. **TOSS-UP BIOLOGY *Multiple Choice*** This animal makes the loudest sound heard on Earth, at 188 decibels.

**W) Humpback Whale**

**X) Sperm Whale**

**Y) Blue Whale**

**Z) Killer Whale**

**ANSWER: Y) Blue Whale**

1. **BONUS BIOLOGY *Multiple Choice*** Earthworms are composed of these small segments, covered in hair that grips the soil.

**W) Annuli**

**X) Peduli**

**Y) Poduli**

**Z) Musculi**

**ANSWER: W) ANNULI**

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1. **TOSS-UP BIOLOGY *Short Answer*** This substance, found in your teeth, is the hardest material in your body.

**ANSWER: ENAMEL**

1. **BONUS CHEMISTRY *Short Answer*** What metal has the highest melting point, at 3422°C?

**ANSWER: TUNGSTEN**

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1. **TOSS-UP GENERAL SCIENCE *Multiple Choice*** Who was the man that invented the mercury thermometer?

**W) Lord Kelvin**

**X) Anders Celsius**

**Y) Thomas Allbutt**

**Z) Daniel Gabriel Fahrenheit**

**ANSWER: Z) DANIEL GABRIEL FAHRANHEIT**

1. **BONUS BIOLOGY *Short Answer*** Anosmia is the loss of which sense?

**ANSWER: SMELL**

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1. **TOSS-UP GENERAL SCIENCE *Short Answer*** IUPAC, which works around chemical nomenclature, is an acronym for this.

**ANSWER: INTERNATIONAL UNION OF PURE AND APPLIED SCIENCES**

1. **BONUS GENERAL SCIENCE *Short Answer*** Which element is the most abundant metal in the Earth’s crust?

**ANSWER: ALUMINUM**

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1. **TOSS-UP CHESMITRY *Multiple Choice*** Give the formula for formaldehyde.

**W) HCOOH**

**X) CH3CHO**

**Y) H2CO**

**Z) C2H5OH**

**ANSWER: Y) H2CO**

1. **BONUS BIOLOGY *Multiple Choice*** Whichof these is not an enzyme found in the lysozome?

**W) Nuclease**

**X) Lipase**

**Y) Succinate Dehydrogenase**

**Z) Protease**

**ANSWER: Y) SUCCINATE DEHYDROGENATE**

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1. **TOSS-UP CHEMISTRY *Short Answer*** The word “cyanide” was taken out of this compound, which is today known as the Cyanide ion.

**ANSWER: FERROCYANIDE/FERRICYANIDE**

1. **BONUS GENERAL SCIENCE *Multiple Choice*** Which man, along with Norman Lockyer, discovered Helium?

**W) Pierre Janssen**

**X) Sir William Ramsay**

**Y) Edward Frankland**

**Z) William Crookes**

**ANSWER: W) PIERRE JANNSEN**

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1. **TOSS-UP GENERAL SCIENCE *Short Answer*** What island, where it was originally mined on, was Copper’s original name, Cuprum, given?

**ANSWER: CYPRUS**

1. **BONUS BIOLOGY *Short Answer*** Though not its main role, this cell organelle also maintains an acidic internal pH in the cell.

**ANSWER: VACUOLE**

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1. **TOSS-UP BIOLOGY *Short Answer*** In the “Rh Blood Group System”, what is “Rh” short for?

**ANSWER: RHESUS**

1. **BONUS BIOLOGY *Short Answer*** What is the name of the process where cells absorb materials outside of the cell by engulfing it with their cell membranes?

**ANSWER: ENDOCYTOSIS**

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1. **TOSS-UP BIOLOGY *Short Answer*** This process, right after mitosis, is the splitting of the nucleus.

**ANSWER: CYTOKINESIS**

1. **BONUS CHEMISTRY *Short Answer*** Chlorofluorocarbons are part of this organic halide group, which is widely used in flame retardants and refrigerants.

**ANSWER: HALOALKANE(S)**

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1. **TOSS-UP ASTRONOMY *Multiple Choice*** A Galactic Year is approximately:

**W) 225-250 Million Years**

**X) 275-300 Million Years**

**Y) 350-400 Million Years**

**Z) 400-450 Million Years**

**ANSWER: W) 225-250 MILLION YEARS**

1. **BONUS BIOLOGY *Multiple Choice*** Which is not an essential amino acid?

**W) Isoleucine**

**X) Methionine**

**Y) Valine**

**Z) Aspartate**

**ANSWER: Z) ASPARTATE**

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1. **TOSS-UP BIOLOGY *Short Answer*** HDL, a type of cholesterol, is an acronym for this.

**ANSWER: HIGH-DENSITY LIPOPROTEIN**

1. **BONUS GENERAL SCIENCE *Multiple Choice*** This earliest of hominids lived from 2.5 million years ago to 1.6 million years ago. What is it?

**W) Homo Erectus**

**X) Homo Habilis**

**Y) Homo Ergaster**

**Z) Homo Rudolfenis**

**ANSWER: X) HOMO HABILIS**

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1. **TOSS-UP MATH *Short Answer*** What is the answer when evaluating 7! (7 Factorial)?

**ANSWER: 5040**

1. **BONUS GENERAL SCIENCE *Short Answer*** What does HTML stand for?

**ANSWER: Hyper Text Markup Language**

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1. **TOSS-UP GENERAL SCIENCE *Multiple Choice*** To open Direct X Diagnostics on a Windows computer, you would type this line of letters into the Run program.

**W) DRCTDIAG**

**X) DIRDIAG**

**Y) DXDIAG**

**Z) DXDGNT**

**ANSWER: Y) DXDIAG**

1. **BONUS BIOLOGY *Short Answer*** Who was the founder of ecology?

**ANSWER: EUGENIUS WARMING**

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1. **TOSS-UP GENERAL SCIENCE *Short Answer*** What is the name of the popular internet scam that uses a forged email purportedly from a respectable organization to elicit personal data?

**ANSWER: PHISHING**

1. **BONUS EARTH SCIENCE *Short Answer*** What is the outermost layer of the Earth that is composed of soil and subject to soil formation processes?

**ANSWER: PEDOSPHERE**

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1. **TOSS-UP CHEMISTRY *Short Answer*** What are polyatomic ions containing oxygen known as?

**ANSWER: OXYANIONS**

1. **BONUS BIOLOGY *Multiple Choice*** What is the name of an irregular bulge in the plasma membrane of a cell caused by localized decoupling of the cytoskeleton?

**W) Membrosome**

**X) Phagosome**

**Y) Bleb**

**Z) Cytosome**

**ANSWER: Y) BLEB**

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1. **TOSS-UP BIOLOGY *Multiple Choice*** Where is the hormone Aldosterone produced?

**W) Adrenal Gland**

**X) Kidneys**

**Y) Pancreas**

**Z) Pituitary Gland**

**ANSWER: W) ADRENAL CORTEX**

1. **BONUS BIOLOGY *Multiple Choice*** Which of the following is involved in Calcium metabolism?

**W) Thyroid Hormone**

**X) Prolactin**

**Y) Estrogen**

**Z) Parathyroid hormone**

**ANSWER: Z) PARATHYROID HORMONE**

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1. **TOSS-UP BIOLOGY *Short Answer*** What is the name of the almond-shaped groups of neurons located deep within the medial temporal lobe of the brain, which play a role in emotional reactions?

**ANSWER: AMYGDALA**

1. **BONUS *Short Answer*** What was the compound Rutherford “used to surround the gold foil in his experiment?

**ANSWER: ZINC SULFIDE**

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1. **TOSS-UP EARTH SCIENCE *Multiple Choice*** What is the layer of the atmosphere is directly above the mesosphere?

**W) Troposphere**

**X) Exosphere**

**Y) Thermosphere**

**Z) Stratosphere**

**ANSWER: Y) THERMOSPHERE**

1. **BONUS GENERAL SCIENCE *Short Answer*** Newton’s Law’s of Motion were published in what book he wrote?

**ANSWER: PRINCIPIA MATHEMATICA**

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1. **TOSS-UP BIOLOGY *Short Answer*** What is the green tissue in the interior of a leaf where chloroplasts are located?

**ANSWER: MESOPHYLL**

1. **BONUS BIOLOGY *Short Answer*** What is the type of tumor that consists mainly of normal, non-cancerous cells?

**ANSWER: BENIGN**

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1. **TOSS-UP GENERAL SCIENCE *Multiple Choice*** What is the study of caves known as?

**W) Speleology**

**X) Geodynamics**

**Y) Petrology**

**Z) Edaphology**

**ANSWER: W) SPELEOLOGY**

1. **BONUS BIOLOGY *Short Answer*** What is the place where 2 homologous chromatids are attached to each other?

**ANSWER: CHIASMA**

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1. **TOSS-UP BIOLOGY *Short Answer*** What is the technical term for dwarfism?

**ANSWER: ACHONDROPLASIA**

1. **BONUS EARTH SCIENCE *Multiple Choice*** Which is the largest tectonic plate?

**W) Eurasian Plate**

**X) Pacific Plate**

**Y) North American Plate**

**Z) Antarctic Plate**

**ANSWER: X) PACIFIC PLATE**

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1. **TOSS-UP BIOLOGY *Short Answer*** What is the name for a prokaryote that makes it own organic compounds from inorganic compounds?

**ANSWER: PROKARYOTE**

1. **BONUS CHEMISTRY *Short Answer*** What is the name of the simplest ketone?

**ANSWER: ACETONE**

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1. **TOSS-UP BIOLOGY *Multiple Choice*** A Tachycardia is a disorder which causes heartbeats to be:

**W) Slower**

**X) Faster**

**Y) Out of Rhythm**

**Z) Louder**

**ANSWER: X) FASTER**

1. **BONUS ASTRONOMY *Short Answer*** The 3rd brightest star in the night sky, Arcturus, is found in which constellation?

**ANSWER: BOOTES**

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