(MS) Science Bee Extras

Extra Questions

(1) **It's not the pancreas, but this organ's secretion of fluids can be regulated by secretin. (+) Intrinsic factor is produced by parietal cells in this organ, which also produces hydrochloric acid. Peristalsis moves matter through this organ after it is received by the (*)** esophagus. For the points, name this digestive organ in which food is broken down by acid and enzymes following chewing.

ANSWER: **Stomach**

(2) **The development of these structures can be represented with the ABC model. They're not fruits, but the presence of these structures differentiate (+) angiosperms from gymnosperms. Carpels and sepals are components of these structures. Movement of pollen from the anther to the stigma of these structures causes (*)** pollination. For the points, name these reproductive organs of plants which contain petals.

ANSWER: **Flower**s (accept **Bloom**s; accept **Blossom**s; prompt on "petal")

(3) **Transfection is a technique used to introduce nucleic acids into these structures, which were first discovered by Robert Hooke while looking under a microscope. One (+) form of these structures is responsible for conducting impulses in the nervous system, while another helps transport oxygen around the body. These units are composed of (*)** cytoplasm enclosed in a namesake membrane. For the points, name this smallest unit of biological life.

ANSWER: **cell**s (accept **neuron**s; or nerve **cell**; accept red blood **cell**s; accept **cell** membrane)

(4) **This quantity that appears in the Fresnel number can be computed using the formula "h over mc". Radio waves are the weakest form of electromagnetic (+) radiation because they have the highest value for this quantity, which is measured by the distance between adjacent troughs. On a visible light spectrum, the color green has a value ranging between (*)** 495 to 570 nanometers for, for the points, what quantity that describes the horizontal distance between two peaks of a wave, symbolized lambda?

ANSWER: **Wavelength** (accept Compton **Wavelength**; prompt of "Lambda" before mentioned)

(5) **Planck's constant over this quantity is equal to the de Broglie [[deh BROY]] wavelength of a particle. The net change in this quantity is equal to impulse, while the rate of change of this quantity is equal to (+) force. This quantity, whose SI unit is equivalent to the newton-second, changes equally to the net force acting on it, according to Newton's Second (*)** Law of Motion. For the points, what quantity is equal to mass times velocity, denoted as the letter "p"?

ANSWER: **Momentum** (accept **P** before mentioned; accept Linear **Momentum**; accept Angular **Momentum**; accept Translational **Momentum**)

(6) **This quantity of a chemical element is correlated with the frequency of X-rays it emits by Moseley's law, and neutronium (+) has a value of zero for this quantity. When a chemical element has an equal number of electrons to this quantity, it is electrically neutral. Denoted as the symbol (*)** "Z", this is, for the points, what property of a chemical element that equals the number of protons it has, which is one for hydrogen?

ANSWER: **Atomic Number** (accept **Number of Protons** before mentioned; prompt on "Z" before mentioned)

(7) **This molecule was first discovered by Frederich Miescher [[MEE-shuh]] in 1869 while studying the composition of white blood cells. Photo 51 (+) reveals information about the structure of this molecule that was first photographed by a student of Rosalind Franklin. Typically abbreviated using a three-letter (*)** term, this is, for the points, what genetic material for which James Watson and Francis Crick won the 1962 Nobel Prize after discovering its double-helix structure?

ANSWER: **DNA** (or **Deoxyribonucleic Acid**)

(8) **The deadliest one of these events was prompted by the 1970 Ancash earthquake, and it (+) became the second-deadliest landslide-related event in twentieth century South America. Slab types of these events occur by the collapse of a weak layer beneath a layer of tightly packed (*)** graupel. For the points, name this rapid flow of snow down a steep slope, such as a mountain.

ANSWER: **Avalanche** (prompt on "Snow Slide")

(9) **David Geffen was forced to open an access point to a Malibu beach named for this element, also nicknamed "Billionaire's Beach." A salt (+) lake with this element's name in Patagonia contains the lowest point in the Western Hemisphere. Besides the elements that are gases at room temperature, this element is the (*)** universe's most abundant. For the points, name this element whose allotropes include graphite and diamond.

ANSWER: **Carbon** (or **C**; accept Element **6**; accept **Carbon** Beach)

(10) **Paget's disease is a rare condition associated with this disease that causes eczema-like changes to the skin. Recent research suggests that Mucin and (+) HER-2 are potential biomarkers for this disease that can be classified by its expression of progesterone and estrogen receptors. The mutation of the BRCA1 gene increases the risk for this disease, which can be treated through a (*)** mastectomy. Mammograms can help detect, for the points, what disease that is the most common form of cancer in women worldwide?

ANSWER: **Breast Cancer** (prompt on "Cancer")