Extra Questions

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(1) **Short-period types of these objects originate from the Kuiper [[kye-PER]] belt, whereas long period varieties come from the Oort Cloud. In 1994, one of these objects named (+) Shoemaker-Levy 9 crashed into the surface of Jupiter. Solar wind causes the tails (*)** of these objects to always point away from the star which they orbit. For the point, name these icy bodies that orbit the Sun and include examples named Halley's and Hale-Bopp.

ANSWER: **Comet**s (accept Short-period **comet**s; accept Long-period **comet**s; accept Periodic **comet**s)

(2) **As a consequence of its high density, this body's atmosphere experiences super-rotation. Unique volcanic features on this body's surface include pancake domes and ticks. This body is the only (+) planet to experience retrograde rotation. Due to its similar size, this body is sometimes called (*)** "Earth's twin." For the point, name this planet with the hottest surface in the Solar System, the second planet from the Sun.

ANSWER: **Venus**

(3) **In 1961, Bernice Eddy discovered that millions of people were exposed to SV40 [[S-V-"forty"]] through contaminated vaccines for this disease. During the Cutter incident, thousands of Americans were given (+) faulty live-virus vaccines for this disease. This disease's first vaccine was invented by Jonas (*)** Salk in the 1950s. For the point, name this disease that attacks the nervous system and which can cause paralysis.

ANSWER: **Polio** (or **Polio**myelitis)

(4) **Historically, females diagnosed with Rett syndrome were considered to have a variety of this disorder. Children with this disorder typically fail the Sally-Anne test, (+) demonstrating a lack of theory of mind. The DSM Five reclassified this disorder as a spectrum, (*)** subsuming the previous diagnosis of Asperger's syndrome. For the point, name this neurodevelopmental condition characterized by low social interest and communication struggles.

ANSWER: **Autism** (or **Autism** Spectrum Disorder; accept **ASD**; accept answers relating to being **Autistic**; prompt on "on the spectrum" and similar answers)

(5) **The Bordes [[BOR-dess]]–Binford debate centered on the existence of ethnicities among this species. Ralph Solecki controversially claimed that the presence of flower pollen with a buried member of this species was evidence of (+) ritual burial. This species is believed to have frequently interbred with the closely related Denisovans [[deh-NEE-soh-vins]]. The 1983 discovery of this species's hyoid bone suggests they had the (*)** ability to talk. For the point, name this close relative of modern humans, whose remains were first discovered in a namesake German valley.

ANSWER: **Neanderthal**s (or Homo **Neanderthalis**; accept pronunciations which replace the "TH" with a "T" sound; prompt on "Neander Valley")

(6) **The vaccinia [[vak-SIH-nee-ah]] virus is used to inoculate against this disease and was first harvested from sores on the hands of milkmaids. During a 1763 siege, British and American soldiers (+) used this disease as a bioweapon by distributing contaminated blankets. The world's first vaccines were produced by Edward (*)** Jenner to prevent this disease. For the point, name this deadly disease caused by *Variola* viruses, which was eradicated in the 1970s.

ANSWER: **Smallpox** (prompt on "Variola Major" or "Variola Minor" before mentioned)

(7) **This compound can be artificially synthesized using dimethylurea [["die"-meh-thil-yoo-REE-ah]] and malonic [[mah-LAH-nik]] acid. This compound's primary metabolites are paraxanthine [["pair"-ah-ZAN-theen]] and theobromine [[thee-oh-BROH-meen]]. With theophylline [[thee-AH-fih-leen]], this compound is often used as a treatment for (+) sleep apnea among premature babies. This stimulant is often extracted using supercritical carbon dioxide. Due to being an adenosine [[ah-DEH-noh-seen]] antagonist, this alkaloid compound is commonly used to prevent (*)** drowsiness. For the point, name this stimulant found in tea and coffee.

ANSWER: **Caffeine** (accept **Guaranine**; accept **Methyltheobromine**)

(8) **This compound is industrially produced in the anthra-quinone [[an-thrah-KWIH-nohn]] process. A solution of ferrous iron and this compound is used to treat drinking water as Fenton's reagent. Within eukaryotic [[yoo-"care"-ee-AH-tik]] cells, specialized (+) vacuoles use catalase [[KAT-ah-"lace"]] to break down this compound into water and (*)** oxygen. For the point, name this compound with formula H2O2 which, like isopropyl alcohol, is commonly used as a first aid antiseptic.

ANSWER: **Hydrogen Peroxide** (accept **H2O2** before mentioned; prompt on "peroxide")

(9) **Along with zinc and copper, this element can be extracted with the Albion [[AL-bee-un]] process. Common ores of this element include nagyágite [[nahg-YAH-gite]], petzite and krennerite, from which this element can be extracted through (+) cyanide leaching. Iron pyrite superficially resembles this element, lending it the nickname (*)** "fool's" this element. For the point, name this highly conductive precious metal known for its yellow color.

ANSWER: **Gold** (accept **Au**)

(10) **These biomes are the predominant environment in which the European chamois [[sham-WAH]] goat-antelope is found. The pika [["PIE"-kah]] is a close rabbit relative found in these biomes. Guanacos [[gwah-NAH-kohs]] and vicuñas [[vih-KOO-nyahs]] (+) are two South American camelids [[KAM-eh-lids]] noted for living in these biomes. Plant-life on these biomes typically stops (*)** above the snow line. For the point, name these high-altitude biomes found in places such as the Himalayas.

ANSWER: **Mountain**s (accept **Alpine**; accept **Mountain** range; accept **Highland**s; accept Himalayan **Mountain**s)

(11) **This thinker was the first to note the color-changing camouflage of octopuses in his book *History of Animals*. In *On the Heavenly Spheres*, this thinker claimed that the stars were (+) suspended in an imperishable aether [[AY-ther]]. This thinker posited the prime mover in his (*)** *Physics*. For the point, name this Greek philosopher who wrote the *Nichomachean [[nih-koh-mah-KEE-an]] Ethics* and tutored Alexander the Great.

ANSWER: **Aristotle** (or **Aristoteles**)

(12) **Several patients with aphakia [[ah-FAY-kee-ah]] have claimed to be able to perceive this kind of radiation. This type of radiation creates free radicals by reacting with CFCs, which can damage the ozone layer. This kind of radiation creates (+) vitamin D from ergosterol [[er-GAH-steh-rol]] and 7-dehydrocholesterol [[dee-hy-dro-"cholesterol"]]. The primary cause of (*)** sunburns, for the point, what is this type of electromagnetic radiation which has wavelengths longer than x-rays, but shorter than visible light?

ANSWER: **Ultraviolet** Radiation (or **UV** Radiation; prompt on "radiation")

(13) **One technology using this type of radiation was invented by Manne Siegbahn [[MAH-neh SEEG-bahn]]. A type of crystallography using this radiation was used by Rosalind Franklin to take a (+) photo of the structure of DNA. The discovery of this type of radiation earned Wilhelm Röntgen [[RENT-gen]] (*)** a Nobel Prize in Physics. For the point, name this type of radiation with a lower frequency than gamma rays, which can be used to image bones.

ANSWER: **X-ray**s (or **X-Radiation**; accept **Röntgen Radiation** before "Röntgen")

(14) **In a wheel and axle system with equal wheel and axle mass, this quantity for the wheel is equal to mass times radius squared. For a belt and pulley system, this quantity is equal to the (+) axial force on the belt multiplied by the radius of the drive pulley. This quantity, symbolized *tau*, is the time derivative of angular (*)** momentum. For the point, name this rotational analogue of linear force.

ANSWER: **Torque** (accept **Moment**, **Moment of force**, **Rotational force**, or **Turning effect**)