VETO 2012 University of Washington Packet

Tossups:

1. This particle was thought to be discovered in condensed matter physics in the form of flux tubes, but these were found not to be a true instance of this entity. Although the existence of this particle has never been experimentally proven, it has been predicted by both the grand unified and superstring theories. Corresponding to the first Legendre Polynomial, this elusive entity is theoretically nonexistent by Gauss’s law for magnetism. For ten points, name this theoretical entity which can be thought of as half of a bar magnet with a net magnetic charge.

ANSWER: **Magnetic Monopole**

2. One character in this novel is profoundly stupid and her facial expression is described in terms of her “rodent-like teeth.” Someone slamming doors irritates the main character, but when he finds the culprit, he falls in love and has a dream in which she loans him a pencil. The number seven is a recurring theme in this book and the last name of the main character's mentor has the Italian word for seven in his name. That character, Settembrini, repeatedly advises Hans Castorp to leave the title location in, For 10 points, what novel set in a Swiss sanitorium by Thomas Mann?

ANSWER: **The Magic Mountain** (Der Zauberberg)

3. Judge Jacob Brinkerhoff wrote it, in language inspired by that of the Northwest Ordinance of 1787. This piece of legislation was first proposed by a Pennsylvanian as an attachment to a two million dollar appropriations bill. It appeared again later that year when an addition million dollars was requested from Congress, and then in 1848 as an attachment to a treaty. Its original text was under one hundred words, yet it ignited animosities that led to the creation of the Free Soil party. For ten points, name this rider which would have outlawed slavery in lands obtained from Mexico.

ANSWER: **Wilmot Proviso**

4. One criterion for identifying products of this process differentiates between pre-zygotic and post-zygotic isolation. In plants this process commonly occurs by polyploidy, which is more rapid than other types of this process. The sympatric form of this process can occur via disruptive selection when populations are not in geographic isolation, while the closing of the Isthmus of Panama led to the allopatric type of this process. This process can also occur via hybridization when two populations interbreed. For 10 points, name this process by which new classes of organisms are formed.

ANSWER: **Speciation**

5. The groundwork for this incident was laid when two countries laid claim to the same island and a sheep ranch was built on it. Although no shots were ever fired, over 2500 soldiers took part in this event and troops would be garrisoned on this island until 1874. This conflict started exactly thirteen years after the Oregon Treaty was adopted and came about as a result of its ambiguity about who owned San Juan Island. For ten points, name this appropriately titled war, which began over the shooting of a certain animal?

ANSWER: **Pig War** or **Pig and Potato War**

6. At one point the protagonist of this novel confides in her friend that she would be willing sacrifice her material belongs and her life for her children but that she could not give up herself. This conversation occurs just after a man leaves suddenly for business in Mexico, upsetting the protagonist of the novel with his hasty departure. A friend of the protagonist, Mademoiselle Reisz, is known for her gifted piano playing and the violets she puts in her hair. For 10 points, this is what novel in which Edna Pontellier’s affair with Robert leads to her self-realization and demise, written by Kate Chopin?

ANSWER: **The Awakening**

7. In 2010 Bechger, Maris, and Hsiao suggested that this phenomenon might best be avoided in language examinations by randomly assigning raters to particular task and exam-taker combinations rather than to exam-takers. The *Economist* claims car companies take advantage of this effect by selling special high-end cars alongside cheaper models. For ten points, name this psychological phenomenon coined in 1920 by Thorndike, which explains why military officers were rated either highly or lowly across the board by a superior.

ANSWER: **Halo** effect or error

8. A paper published in 2006 claimed that if an asteroid were to strike this body of water, the release of toxic and flammable gases could be more dangerous than the resulting tsunami. One of its official boundaries is a line joining Cape Takil and Cape Panaghia, and it is skirted by the Kolkhida lowlands to the east. Its largest islands are Fidonisi and Berezan. An eponymous fleet won a battle at Sinope on its coastline, destroying a Turkish fleet. For ten points, name this sea, connected to the seas of Azoz, Marmara, and the Mediterranean.

ANSWER: the **Black** Sea

9. This person voyaged to Russia on the schooner Clorinda before participating in a failed insurrection led by members of a Carbonari movement. While campaigning with a group of rebels called the Ragamuffins, this man met his future wife, with whom he fought at the battles of Laguna and Imbituba. Later, this general formed the unit the Hunters of the Alps and battled against the Austrians in the Second Italian War of Independence. For 10 points, name this general and leader of the Redshirts who fought for the unification of Italy.

ANSWER: Giuseppe **Garibaldi**

10. The formation that contains this geographical feature is part of the Western Canadian Sedimentary basin and was first noted in 1917. Wood Buffalo National Park lies directly north of this feature, with Clearwater River and Meadow Lake Provincial Parks are to its east. The Fort McKay First Nation has built mines in this deposit, while China and the United States are trying to secure larger shares of the output from this deposit. For 10 points name this large natural resource deposit surrounding the city of Fort McMurray, formed in the Cretaceous era.

ANSWER: **Alberta** **tar sands**  (also accept oil or bituminous in place of tar, accept Athabasca in place of Alberta)

11. In one of this author’s novels Rachel Verinder inherits a sacred Indian diamond from her uncle, which is promptly stolen from her. In another novel the uncle of one of the main characters frequently remarks how proud he is to be in the possession of a collection of Rembrandt etchings. The niece of this man is one of the victims of a conspiracy orchestrated by Sir Percival Glyde and Count Fosco, eventually unraveled by the efforts of Walter Hartright. For 10 points name this author of *The Moonstone* and *The Woman in White.*

ANSWER: Wilkie **Collins**

12. In 2001 this man’s son was caught trying to enter Japan with a forged Chinese passport to visit Disneyland. This man’s father founded Juche, a political philosophy that replaced Marxism in the country that he led. A popular Tumblr blog features photos of this man looking at things, who has been referred to as supreme leader, ‘our father,’ ‘the General,’ and many others. Asian stock markets fell following his death in late 2011, while the South Korean military was put on alert. For 10 points, name this dearly departed former leader of North Korea

ANSWER: **Kim Jong-Il**

13. An early film role for this actress saw her character Sherry become a member of a cult while homeless in Europe. Internet predator Jeff is convinced to commit suicide by another character played by this actress. As Bliss Cavendar this actress embarrasses her mother by dying her hair blue for a beauty pageant and acts alongside Jennifer Garner and Jason Bateman in another film. In addition to her roles in *Hard Candy* and *Whip It,* she plays a maze designer in *Inception.* For 10 points identify this Canadian actress, best known for her role as the titular character in *Juno.*

ANSWER: Ellen **Page**

14. In one collection by this author, a character uses a Goya painting as a description of his self-image as he attempts to apologize to a former acquaintance for past wrongdoings. In addition to *Him with His Foot in His Mouth*, this man also wrote a story that alludes to his relationship with the poet Delmore Schwartz. In that novel, the title character's mentorship provides another character with the basis to write a successful play. For 10 points, name the author of such works as *Humboldt's Gift* and *Henderson the Rain King*.

ANSWER: Saul **Bellow**

15. The Edward-Lemieux effect describes the tendency of cyclic forms of these compounds to prefer an axial orientation even though the equatorial position is less hindered. Mutarotation of cyclic ones converts alpha into beta anomers by changing a hydroxyl substituent from trans to cis relative to the CH2OH side group. Haworth projections are used to describe the 3D structure of these entities when in closed ring forms. Beta-(1-->4) glycosidic linkages of these compounds can be found in cellulose. For 10 points, name these compounds with the suffix -ose which include mannose, fructose, and glucose.

ANSWER: **Carbohydrates** (accept sugars and monosaccharides)

16. One of this artist’s works features a nude woman pouring water from a vase, representing the source of a river. Oedipus faces the Sphinx in an early painting, and another depicts a partially seated man holding a stringed instrument while a helmeted man in red gestures at him. In addition to *The Envoys of Agammemnon* and *The Source,* a man wearing lavish robes is seated upon a platform while holding a scepter, a rug with an eagle on it beneath him in one of this artist’s best known paintings. For 10 points, name this painter of *Napoleon I on his Imperial Throne* and *Grande Odalisque*.

ANWER: Jean Auguste Dominique **Ingres**

17. Originally conceived because his creator could not acquire a license to use characters from Popeye, this man was originally to be called “Mr. Video”. In the sequel to his first appearance, he appears as the antagonist for the only time in his career. His first appearance was as the former owner of an ape named Donkey Kong, who kidnaps his girlfriend, Pauline. This character has had over two hundred video game appearances, including dozens of eponymously-named games. For ten points, name this brother of Luigi and poster boy for Nintendo.

ANSWER**:** Super **Mario**

18. Earthquakes are attributed to the painful convulsions of this god. In an attempt to save his life, this god took the form of a fly to annoy the dwarf forging Mjolnir. His attempts to distract have limited success; however, Eitri and Brokk still win the wager and his head. After an angry tirade, this god was imprisoned in a cave with a snake dripping venom onto his face. This god is father to several children through his wife Angrboda, including the wolf Fenrir. For ten points, name this trickster God of Norse mythology.

ANSWER: **Loki**

19. Born in Michigan, this man’s career would take him to the East Coast, where he would lose the 1994 Senate race to Ted Kennedy. This man’s father lost the presidential nomination to Richard Nixon in 1968, although ended up serving in his cabinet. This man was responsible for signing into law the Massachusetts Healthcare Reform. Although starting out working for Boston Consulting Firm, this man would go on to found Bain Capital. For ten points, name this Republican politician and presumptive nominee to run against Barack Obama.

ANSWER: Mitt **Romney**

20. Distressed that he lacked an heir after his first son Tsurumatsu died, this man appointed his nephew to the task – but, after the birth of his second son, he forced his nephew to perform seppuku, in addition to publicly executing his children and 31 female relatives. To enforce class separation, he oversaw the gathering and melting down of swords from the peasant class. His later military aspirations to invade Korea and China were foiled by a defeat at sea in 1592; but he had largely completed the unification that his former lord Oda Nobunaga had begun. For ten points, name this Japanese leader who paved the way for the peaceful Tokugawa era.

ANSWER: Toyotomi **Hideyoshi**

21. Picard’s existence theorem for first-order differential equations requires that the function y-prime be Lipschitz-this in y. The Blancmange function has this property everywhere in its domain. The modified Dirichlet function, which is 0 for argument irrational and 1 over b for argument rational of reduced form a over b, has this property only at irrational inputs. A mapping is this if the preimage of every open set in its codomain is open. For ten points, name this mathematical property, often defined for functions in terms of a pointwise epsilon-delta argument.

ANSWER: **continuity** or **continuous** or **continuousness**, etc.

22. The border between this country and its neighbor is largely based on the boundaries of medieval Marcher lordships and at one point separates a city from its railroad station. It’s known as the “land of song” partly due to its eisteddfod (eye-steth-vod) tradition, and the Seven Wonders of this country include some ancient yew trees and the region’s highest mountain, Snowdon. Many citizens speak both English and Cymraeg (koom-raig) and it is home to the longest official place name in the UK. For 10 points, name this polity with capital at Cardiff.

ANSWER: **Wales** [Cymru (koom-ree)]

(10,000 special points if anyone can spell the longest place name, Llanfairpwllgwyngyllgogerychwyrndrobwllllantysiliogogogoch)

23. Two people on a mattress and a tower rising from a volcano float on a bathtub in one of this artist’s works. Two versions of this artist sitting next to each other have hearts outside their bodies and are joined together by an artery in another painting by this artist. In addition to *What The Water Gave Me,* a woman is shown falling from a building and lying on the ground beneath it in this artist’s *The Suicide of Dorothy Hale.* For 10 points name this Mexican artist, creator of *Self Portrait With Necklace of Thorns* and *The Wounded Deer.*

ANSWER: Frida **Kahlo**

24. Theodor Adorno criticized this man’s work as too repetitive, although Bernstein spoke highly of one of his pieces. This man came to fame after Sergei Diaghilev commissioned him to compose a set of ballets, one of which was featured in Fantasia and accompanied depictions of the origin of life. However, Fantasia’s version cut the Finale of the second act and repeated the bassoon solo at the end of the piece. In another of this man’s ballets, Prince Ivan must free the maidens from the evil Katschai with help from the titular creature. For 10 points, name this composer of The Firebird and The Rite of Spring.

ANSWER: Igor **Stravinsky**

Bonii:

1. Andrew Jackson, speaking of this piece of legislation and the policy it represented, claimed that “by opening the while territory between Tennessee on the North, and Louisiana on the south, to the settlement of the whites, it will incalculably strengthen the southwestern frontier.” For ten points each:

A. Name the act, signed into law on May 28 1830.

ANSWER: **Indian Removal** Act

B. The Indian Removal Act led to a 28 year struggle to force Native American peoples to relocate westward. Some members of this people were coerced into signing a removal treaty in 1833; the war which resulted lasted from 1835 to 1842 and cost the US approximately 10 times more than they had allotted for Indian removal altogether. It was the second war named for that Florida tribe.

ANSWER: the **Seminole**

C. This tribe, one of the so-called Five Civilized, was the first to sign a removal treaty under the Indian Removal Act. The treaty was signed at and named for Dancing Rabbit Creek.

ASWER: The **Choctaw** Nation

2. In the late 2000’s, the European Union faced an unprecedented crisis as some countries’ debt ran out of control, leaving the more financially stable countries to keep the Euro afloat. Name some things about it for ten points each.

A. This was one of the countries hardest hit by the debt crisis, requiring two bailout loans in 2010 and 2011 to avoid disaster. In May, 2010, austerity measures were passed, leading to riots here.

ANSWER: **Greece**

B. This is the acronym once used to refer to southern Europe, which has now become synonymous with financially unstable countries.

ANSWER: **PIGS** or **PIIGS** or **PIIGGS**

C. In April 2010, Standards and Poor’s downgraded the Greek sovreign debt to this rating, indicating that it was a very high risk investment and in danger of default.

ANSWER: **Junk Bond** or **BB+**

3. South America is divided between the Greater German Reich and the Greater East Asian Co-Prosperity Sphere in one of this author’s novels, for 10 points each:

A. Name this author, whose works include a novel in which Rick Deckard hunts down escaped androids, as well as *The Three Stigmata of Palmer Eldrich.*

ANSWER: Phillip K. **Dick**

B. In an alternate history where the Axis powers emerged victorious after WWII, Imperial Japan and the Third Reich are engaged in a cold war in this novel. The titular person derives inspiration from the I Ching to write *The Grasshopper Lies Heavy,* which several other characters in the novel have read.

ANSWER: ***The Man in the High Castle***

C. This other Phillip K Dick novel follows John Anderton, founder of the Precrime department. This system uses three people with precognitive abilities in order to identify and catch criminals before they are able to commit the crimes that the precogs have foreseen.

ANSWER: ***The Minority Report***

4. Name some characters from Hawaiian mythology, for 10 points each:

A. While she currently resides in Kilauea’s summit crater, this goddess is responsible for all past and present volcanic activity on the island chain; strands of volcanic glass are said to be her hair.

ANWER: **Pele**

B. This trickster deity created the Hawaiian island chain while fishing with his brothers by hauling the islands up from the ocean floor with a great fish hook while his brothers paddled the boat. He also shares his name with the island north of Kaho-olawe and east of Lanai.

ANSWER: **Maui**

C. In order to lengthen the days so that his mother has time to dry her bark cloth, Maui snares the sun by climbing to the top of this volcano, this highest point on his namesake island whose slopes contain the only known population of Hawaiian silversword ferns.

ANSWER: **Haleakalā**

5. Following the revolts of 1837, it was clear that Canada’s 1791 constitution was flawed. For ten points each, answer these questions about the move towards the British North America Acts.

A. Britain appointed this Whig reformer as governor-general to investigate the unrest in Canada. His *Report on the Affairs of British North America*, often referred to by his name, recommended strongly that at least the 2 Canadas unite, and that a ‘responsible government’ in which the colonial assembly was empowered be adopted.

ANSWER: John George Lambton, 1st earl of **Durham** (also accept **Lambton** alone)

B. Britain accepted the idea of uniting the Canadas, and established the Province of Canada in 1841. Responsible government was not ordered until later that decade, by which time the colonial empire had begun to be dismantled. The repeal of these last major protective tariffs in 1846 marked that change. The news magazine *The Economist* was founded as a voice against them; their name refers generally to a class of tariffs designed to protect grain producers.

ANSWER: the **Corn** Laws

C. The repeal of the Corn Laws was a blow to the Canadian economy; but customs tariff-free trade with the US helped fill the gap, as enabled by this 1854 treaty. It also allowed American fisherman some access to east-coast fisheries.

ANSWER: The Canadian-American **Reciprocity** Treaty, or **Elgin-Marcy** treaty

6. A wise man says ‘give crowns and pounds and guineas but not your heart away’ in one collection of poems by this author, for 10 points each:

A. Name this author, whose collection *A Shropshire Lad* contains an ode to a person whose early death ensures that he will not be one of the ‘runners whom renown outran,’ also remarking that ‘silence sounds no worse than tears after earth has stopped the ears.’

ANSWER: A.E. **Housman**

B. This poem from *A Shropshire Lad* begins ‘The time you won your town the race We chaired you through the market place,’ and goes on to compare this journey through town to carrying the titular person in a coffin after his death.

ANSWER: ***To An Athelete Dying Young***

C. This other *Shropshire* poem claims that ‘malt does more than Milton can to justify God’s ways to man’ and relates the story of Mithridates, a king in the East who died old by building up a tolerance to poisons.

ANSWER: ***Terence, this is stupid stuff***

7. Name some related groups and musicians in the Canadian indie music scene, for 10 points each:

A. This band, fronted by singer Emily Haines, wrote the song Black Sheep, which was performed by actress Brie Larson for the film *Scott Pilgrim vs. the World*. Some other well-known songs include ‘Help I’m Alive’ and ‘Gimme Sympathy,’ both from the album *Fantasies.*

ANSWER: **Metric**

B. Her career began with the album *Monarch (Lay You Jeweled Head Down)* which is now out of print, but she gained widespread recognition with her album *The Reminder*, which contains the singles ‘My Moon, My Man’ and ‘1234.’

ANSWER: Leslie **Feist**

C. Feist and Metric have both toured and recorded albums with this Toronto-based musical collective, whose song ‘Anthems for a Seventeen Year Old Girl’ from the album *You Forgot It in People* was also featured in *Scott Pilgrim vs. the World*. Their most recent album, *Forgiveness Rock Record*, features performances by members of Pavement and Death From Above 1979.

ANSWER: **Broken Social Scene**

8. Actor, dancer, singer-songwriter, Patrick Swayze’s done it all. However, most people only know him for his movies; name some of them for ten points each:

A. In this movie, Swayze plays a dance instructor in the Catskill Mountains. He becomes romantically involved with Jennifer Grey’s character, much to the chagrin of her rich father.

ANSWER: ***Dirty Dancing***

B. Swayze plays a teenager alongside Charlie Sheen in this 1984 film that sees him lead a surprisingly successful rebellion against the communist forces occupying the Midwest.

ANSWER: ***Red Dawn***

C. This film sees Swayze portray a bad ass, yet civilized bouncer at a bar in Missouri. The climax of the movie comes when he is forced to face off against a violent hit man and rips his trachea out.

ANSWER: ***Roadhouse***

9. Name some things about prehistoric animals, for 10 points each:

A. This group of reptiles roamed the Earth from the Triassic to the Cretaceous and was divided into two main taxonomic categories, the Ornthiscians and Saurischians, based primarily on pelvic structure.

ANSWER: **Dinosaurs** (or *Dinosauria)*

B. This dinosaur clade is a subdivision of the Sariscian order, and is distinguished by foot morphology and being completely bipedal. It includes tyrannosaruids, dromaeosaurids, and the dinosaurs most closely related to modern birds, as well as *Archaeopteryx*.

ANSWER: **Theropoda**  (or Theropods)

C. Member of this other sub-division within the Saurischian order can be identified by their spatulate teeth, pneumatic bones and quadrupedal stance, as well as their enormous size. Well-known species include *Diplodocus, Apatosaurus,* and *Argentinosaurus.*

ANSWER: **Sauropoda** (or Sauropods)

10. Venus gazes at a sleeping Mars while satyrs frolic nearby in one of this artist’s paintings. For 10 points each:

A. Name this artist, creator of *Venus and the Three Graces Presenting Gifts to a Young Woman* as well as *The Birth of Venus.*

ANSWER: Sandro **Botticelli** (or Alessandro di Mariano di Vanni Filipepi**)**

B. Zephyrus pursues his lover Chloris, while the Three Graces dance nearby and Mercury banishes clouds from this garden scene, another work by Botticelli.

ANSWER: ***Primavera***

C. Botticelli may have included a self-portrait in the lower right corner this work, which shows a woman in blue holding an infant surrounded by a crowd of admirers bearing gifts.

ANSWER: ***Adoration of the Magi***

11. In this work, a character who turns out to be the Devil tries to convince the title character to use sheep for sex, while another character is put to death for disapproving of the king’s incestuous marriage. For 10 points each:

A. In this novel, the Devil pleads to be let back into the Kingdom of Heaven but is curtly denied after God asserts that without the evil the Devil represents, people would not recognize the good that God symbolizes.

ANSWER: ***The Gospel According to Jesus Christ***

B. *The Gospel According to Jesus Christ* was written by this Portuguese author who also penned *Death with Interruptions* and *Blindness.*

ANSWER: Jose **Saramago**

C. In *The Gospel According to Jesus Christ*, this character is consumed with guilt after 25 children are killed due to his actions, and later he is mistaken as a revolutionary Zealot and the Romans crucify him.

ANSWER: **Joseph**

12. Although absent from the earliest computers, operating systems have become essential to most computer users’ experiences. Name some things about them for ten points each.

A. Known by the codename “Longhorn”, this operating system was met with much criticism when it came out, several of which focused on features that had been removed from its predecessor, XP.

ANSWER: Windows **Vista**

B. This Linux-based operating system is currently the most popular of its kind among personal computers. Its name is a Southern African philosophy meaning “humanity toward others”.

ANSWER: **Ubuntu**

C. Give the name for the mascot for Linux, a penguin whose name comes from an abbreviation of “Torvalds Unix”.

ANSWER: **Tux**

13. In this novel, a Bedouin tribe rescued the title character after Germans shoot down his plane during World War II. For 10 points each:

A. Identify this novel about a man who is taken care of by the nurse Hana and is referred to with a moniker that incorrectly identifies his nationality.

ANSWER: ***The English Patient***

B. Name the author of *The English Patient*, who also penned such works as *Anil's Ghost* and *In the Skin of a Lion.*

ANSWER: Michael **Ondaatje**

C. The novel *Running in the Family* is a fictionalized memoir of Ondaatje's return to this country, the home of Arthur C. Clarke and the Tamil Tigers.

ANSWER**: Sri Lanka** (or Ceylon)

14. Canada wasn’t always filled with white people of European descent. For ten points each, name some aboriginal Canadians peoples.

A. Including indigenous people ranging from Russia to Greenland, this is the name for the group of Arctic-dwellers that includes the Kaallit and Inupiak cultures.

ANSWER: **Inuit**

B. The definition of who is and is not considered a member of this aboriginal people is somewhat unclear, due to the fact that, by definition, they are a result of native and European parents. This has led to debates over just how much aboriginal ancestry is required to qualify.

ANSWER: **Métis**

C. This term has come to refer to any aboriginal people in Canada who aren’t Inuit or Métis. Although no legal definition of the term exists, it is thought to have been created to replace the potentially offensive term “Indian”.

ANSWER: **First Nations**

15. Known for works that exhibit nationalism, realism, and romanticism, this composer created some of his most recognized pieces during the last years of his life, including the quartet *From My Life* and the operas *The Kiss* and *The Devil's Wall*. For 10 points each, answer some things about a certain Czech composer.

A. Name the composer of the operas *The Brandenburgers in Bohemia* and *The Bartered Bride*.

ANSWER: Bedrich **Smetana**

B. Smetana also composed this set of six symphonic poems that includes the works *Vysehrad* and *Vltava.*

ANSWER: ***Ma Vlast*** (accept My Fatherland, My Country, My Homeland, etc)

C. This symphonic poem in *Ma Vlast* recounts the Czech legend of the Maiden's War in which the title figure lures some men to their deaths by pretending to be a captive of rebels.

ANSWER**: *Sarka*** (accept "Sharka")

16. The presence of Kaiser-Fleischer rings in the cornea are indicative of this autosomal recessive disorder, while other symptoms include neuropsychiatric disturbances, splenomegaly, portal vein hypertension, and increased bleeding due to accumulation of a certain element. For 10 points each:

A. Name this disease, which is caused by toxic amounts of a certain metal building up in the brain and liver.

ANSWER: **Wilson's** Disease (or hepatolenticular degeneration)

B. Although toxic amounts of it can cause disease, this element is also an important cofactor for enzymes such as cytochrome c oxidase and is the metal that binds to oxygen in the protein hemocyanin.

ANSWER: **Copper**

C. One treatment for Wilson's disease involves this process of removing heavy metals from the body using certain agents such as Penicillamine, which bind to the accumulated metals and are then excreted through the urine.

ANSWER: **Chelation**therapy

17. This philosopher is known for establishing and popularizing the scientific method and for proposing a reformation for the advancement of knowledge that imitated the *Biblical Six Days of Creation.* For 10 points each:

A. Name this philosopher and creator of *The Great Instauration*, a man purported by certain conspiracy theorists to be the true author behind some of Shakespeare’s works.

ANSWER: Francis **Bacon**

B. This second part of Bacon’s *Instauration* maintained that the restoration of science was part of the “partial returning of mankind to the state it lived before the fall” and that knowledge of nature and the use of instruments can allow man to manipulate natural processes for his own benefit.

ANSWER: **Novo Organum** (New Method)

C. Bacon posited that in order to use inductive reasoning a philosopher must free his mind from certain “idols”, such as the Idols of the Den, the Idols of the Marketplace, and these idols, which result from abuse of authority by philosophers.

ANSWER: Idols of the **Theatre** (Idola theatri)

18. This monarch ruled Spain and its overseas empire during the late 17th century and created a Junta Magna to investigate the Spanish Inquisition, although he may be better known for his intense physical and intellectual disabilities that arose from the excessive European-style inbreeding of his ancestors. For 10 points:

A. Who was this king, the successor to Philip IV and the last Habsburg ruler of Spain?

ANSWER: **Charles** **II** (or Carlos II)

B. Charles II was the unfortunate result of generations of amorous relatives, including this woman who was two of Charles’ 16 great-great-great-grandmothers, six of his 32 great-great-great-great-grandmothers, and six of his 64 great-great-great-great-great-grandmothers, and is known herself for her “madness.”

ANSWER: **Joanna of Castile** (prompt on “Joanna the Mad”)

C. Charles’ and Joanna’s family bush also included Holy Roman Emperor Charles V, whose rule saw this uprising of Castilian citizens in response to Charles V’s extravagant expenditures and the subsequent tax hikes. .

ANSWER: Revolt of the **Comuneros** (War of the Communities of Castile)

19. Although the most famous Glacier National Park is located in North America, a second park of this name makes up part of the largest ice cap in the Southern Hemisphere outside of Antarctica. For 10 points each:

A. Parc Nacional Los Glaciares is located in which South American country known for its gauchos and its capital of Buenos Aires?

ANSWER: **Argentina**

B. The park is located in this southern region of Argentina and Chile composed of pastoral steppes and the Tierra del Fuego archipelago.

ANSWER: **Patagonia**

C. This explorer was the first to mention a giant race of people he called Patagons, who were sighted while his expedition was exploring the coastline of South America in the 1520s.

ANSWER: Ferdinand **Magellan**

20. Make sure that your optical cables are all securely attached before answering these questions about neutrinos:

A. Neutrinos come in three flavors: electron, muon, and tau- but they can oscillate between flavors as they travel. Neutrino oscillation was hinted at when scientists observed fewer electron neutrinos than they expected coming from this object, whose PP and PEP reactions produce huge numbers of the particles

ANSWER: The **sun**  (sol)

B. This Canada-based experiment, which used 1 000 tonnes of heavy water for neutrinos to interact with, observed solar neutrinos and offered the first solid observation of neutrino oscillation. It is currently being upgraded to an advanced, ‘plus’ phase.

ANSWER: **SNO**, or the **Sudbury Neutrino Observatory**

C. It has been suggested that neutrinos could be their own antiparticles, making them Majorana particles. To confirm this, experimentalists are now rushing to observe this hypothesized type of nuclear decay, in which the emitted neutrinos annihilate one another. EXO looks for it in Xenon.

ANSWER: **neutrinoless double beta** decay (accept double beta with some mention of a lack of neutrinos)

21. Wildebeests, zebras, and other plains animals travel over 1 600 kilometers every year in the Serengeti, the last place in Africa where such massive migrations can still be seen. For ten points each, answer these questions about the Serengeti region:

A. The population of these animals in Serengeti National Park had disappeared by 1991- it is possible that an outbreak of rabies from domesticated animals in the area contributed. The second largest living wild canine and the largest in Africa, they are considered endangered by the IUCN. They are notably social, and curiously have only 4 toes per foot.

ANSWER: ***Lycaon pictus*** or **African wild dog** or **African hunting dog** or **Cape hunting dog** or **painted dog/wolf** or **spotted dog** or **ornate wolf**

B. Typically by July some wildebeest will have begun crossing into this game reserve to the north of and contiguous with Serengeti National Park. It is named for a nomadic people and their word for “spotted.”

ANSWER: **Maasai Mara**

C. This area to the southeast of Serengeti National Park is a UNESCO World Heritage site, known for its geological and anthropological riches. Australopiths and their Homo lineage antecedents have been found in the 14 kilometer long Olduvai Gorge, along with evidence of early human bipedalism in Pliocene-era footprints at Laetoli and an early form of Homo sapiens at Lake Ndutu. It is also home to one of the world’s largest unbroken calderas.

ANSWER: **Ngorongoro** Conservation Area

22. From approximately 320 to 550 CE, northern India was ruled from Pataliputra by a series of relatively benevolent “kings of kings,” and the region experienced a period of peace, religious freedom, and scientific advance. For ten points each:

A. Name this empire, whose reign saw the elevation of Sanskrit by Klidasa and Dandin, and which was marked by a decline in Buddhism and Jainism in favor of Hinduism. Its era is commonly called the Classical or Golden Age of India.

ANSWER: the **Gupta** Empire

B. This ruler of the Gupta dynasty reigned from 380 to 415, and saw the expansion of the empire to the west beyond the Hindu Kush and in the east to today’s western border of Burma. In the process, this man destroyed rivals in the west and gained access to Western trade. He was a great patron of the arts, and held an assortment of artists and intellectuals called the Nine Jewels in his court.

ANSWER: **Chandra** Gupta **II** or **Vikramaditya** (prompt on Chandra)

C. The Gupta empire was beset by internal discord, rebelling territories, and dispute over successions in the sixth century. The invasion of its territory by this group from beyond the mountains to the northwest was a significant factor in its downfall. They established a kingdom there briefly.

ANSWER: the **Hephthalites** or **White Huns** or **Hoa** or **Hoa-tun** or **Sveta Huns** or **Turushkas** (prompt on Huns)