

Prison Bowl VI

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Round 08 – Tossups

1. This man used the chord progression from “Honeysuckle Rose” in his song “Scrapple from the Apple”. In a recording session with Max Roach and Curley Russell, this composer performed “Billie’s Bounce” as well as a song inspired by Ray Noble’s “Cherokee”, “Ko-Ko”. On the album *Jazz at Massey Hall*, he collaborated in a quintet with Dizzy Gillespie, with whom he helped develop bebop. For 10 points, name this jazz composer of “Ornithology” and “Yarbird Suite” whose alto saxophone playing earned him the nickname “Bird”.

ANSWER: Charlie **Parker** [accept **Bird** before mention] <WR>

2. One form of this quantity is represented as the cross product of lambda times magnetization and the derivative of magnetization in the Landau-Lifshitz-Gilbert equation. For an electric dipole, this quantity with a “spin-transfer” variety is equal to the cross product of the dipole moment and the electric field, while for a rigid body, this quantity can be maximized by increasing the distance from the pivot point or increasing the tangential component of force. With units of newton-meters, it is the time derivative of angular momentum. For 10 points, name this quantity, the rotational analogue of force.

ANSWER: **torque** [or **moment**] <AM>

3. Father Jean Loison was called to testify in an ICJ case regarding this event, and Benjamin Wier was released early on during it. Fawn Hall was granted immunity in exchange for testimony during this event, and the Lebanese magazine *Ash-Shiraa* first revealed it. Several nations participated in it to help the US circumvent the Boland Amendment. Partly precipitated by the rise to power of Daniel Ortega, Israel served a key intermediary during this event. The resulting Tower Commission report criticized the conduct of John Poindexter and Oliver North. For 10 points, name this scandal involving the sale of weapons in exchange for the release of hostages and rebel funding, occurring during the Reagan Administration.

ANSWER: **Iran-Contra** Affair <JL/ZZ>

4. One of this religion's previous leaders stated that a Mother Wheel's contents were used to raise mountains on Earth. This religion believes that the Earth and the Moon were one, and its current leader has stated that man is stuck in an animalistic stage. Adherents of it are “righteous teachers” who teach the truth to those manipulated by “slave makers.” Founded by Wallace Fard, this religion holds that the scientist Yakub created all other races from the black race. After joining this religion, Cassius Clay was renamed Muhammad Ali. For 10 points, name this religion whose most famous members include Elijah Muhammad and Malcolm X.

ANSWER: **Nation of Islam** [or **NOI**] <PS>

5. Chushka Spit extends into this body of water from Taman Peninsula, where one can reach Port Krym by ferrying across the Strait of Kerch. That strait connects this body of water to its neighbor, a sea which is the outlet of the Kuban and Don Rivers as well as the shallowest sea in the world. In addition to being connected to the Sea of Azov, this sea is connected to the Sea of Marmara via the Bosphorus strait. It is bordered by Georgia, Bulgaria, and the Crimean Peninsula. For 10 points, name this inland European sea, located directly south of Ukraine and directly north of Turkey.

ANSWER: **Black** Sea [accept Sea of **Azov** or Strait of **Kerch** before respective mentions] <WR>

6. One character in this novel is often described as delicately balancing something on her chin. Described as careless drivers, that character and her friend are first encountered lying “p-paralyzed” on a divan and wearing fluttering white dresses. The narrator of this novel is accidentally offered a “gonnegtion” by Meyer Wolfsheim. The eyes of Dr. T.J. Eckleburg loom over the Valley of Ashes, near a car repair shop opened by George Wilson. In this novel, ashes and blood mix when George’s wife Myrtle is run over by a yellow car driven by Daisy. For 10 points, name this novel set in West Egg and narrated by Nick Carraway, a work by F. Scott Fitzgerald.

ANSWER: *The* **Great Gatsby** <MZ>

7. This man wrote that Brinton's observations of the title varying vocalizations were not evidence of cultural inferiority in *On Alternating Sounds*. To catalog environmental influences on native migration in *The Central Eskimo*, he studied the Inuit of Baffin Island. He studied the practice of potlatch among the Kwakiutl, which led him to develop the concept of cultural relativism. He founded the anthropology department at Columbia, where he trained students such as Alfred L. Kroeber and Ruth Benedict. For 10 points, name this anthropologist, the author of *The Mind of Primitive Man*.

ANSWER: Franz **Boas** <AM>

8. This word prefixed by "pseudo" describes n to a base a if a to the $n-1$ power and 1 are congruent modulo n . Carmichael numbers are examples of those numbers which pass a test described by Fermat's little theorem. Adding 1 to the product of a finite amount of these was how Euclid proved that there are infinitely many of these numbers. Any positive integer can be uniquely represented as a product of these numbers in a namesake factorization, and 2 is the only even example of these. For 10 points, name these numbers contrasted with the composites, which are only divisible by themselves and 1.

ANSWER: **prime** numbers <AM>

9. One minister under this man was later killed for plotting against Papa Doc Duvalier, and his nation was sanctioned after a car bombing in Caracas wounded, but did not kill, Romulo Betancourt. He also ordered the killings of the Mirabal Sisters, and the failure of general Pupo Roman to act following this man's death allowed Johnny Abbes Garcia to catch and punish most of his assassins. He ordered the Parsley Massacre and negotiated a treaty with Cordell Hull. For 10 points, name this dictator of the Dominican Republic who was assassinated in 1961 who received significant US support as a result of his stance against Communism.

ANSWER: Rafael Leonidas **Trujillo** <ZZ>

10. One character in this play confides in her father's servant Lancelot and runs off with her mother's turquoise ring to marry Lorenzo. Another character is able to marry the character he is courting after he chooses a casket made of lead. The clerk Stephano and the lawyer Balthazar in this play are really two women in disguise: Nerissa and Bassanio's wife Portia. At the end of this play, a character forfeits his property and fails to collect a contract without spilling blood. For 10 points, name this William Shakespeare play in which Antonio is sued for "a pound of flesh" by the Jewish moneylender Shylock.

ANSWER: *The* **Merchant of Venice** <AM>

11. In the webcomic *Gunnerkrigg Court*, George Parley has this special ability. Spiderman's spidey-sense is useless against this ability demonstrated by Spot, and *Watchmen*'s Doctor Manhattan uses this ability on Rorschach to avoid talking to him. Clarice Ferguson of the *X-Men* makes a "blink!" sound when performing this action, while a "BAMF!" sound effect and a puff of brimstone accompany Nightcrawler when he is using this ability. For 10 points, name this action one can perform by jumping through a Stargate, using a portal gun, or casting an Apparition spell.

ANSWER: **teleportation** [prompt before mention on things like "portals", "jumping" or "spatial manipulation"] <WR>

12. This concept's namesake curve can be graphed using Viviani's Theorem on a ternary plot with side length 1. That curve forms a parabola connecting the two base vertices of a de Finetti diagram. Generalizing this statement requires a binomial raised to the power c , where c is the ploidy. In this model's simplest case, the allele frequencies p and q sum to 1, and this law requires that its population is large, randomly mates, and does not mutate. For 10 points, name this doubly-eponymous law in population genetics which describes a population whose allele and genotype frequencies remain constant in its namesake equilibrium.

ANSWER: **Hardy-Weinberg** equilibrium [or **Hardy-Weinberg** model, principle, or any word, really] <SH>

13. This man helped compose a *Fascinating Rhythm* standard for the musical *Lady Be Good!*. In another of his works, he uses a "clave" ("CLAH-vay") rhythm to keep time while other players make heavy use of rubato throughout the piece. This man depicted the citizens of Catfish Row placing money in Serena's saucer after her husband, Robbins, is stabbed with a cotton hook by Crown. In his travels to Europe, he studied with Nadia Boulanger before producing his work *An American in Paris*. A 17-note clarinet glissando opens his "Experiment in Modern Music". For 10 points, name this composer of *Porgy and Bess* and *Rhapsody in Blue*.

ANSWER: **George Gershwin** [or **Jacob Gershwini**; accept **Ira Gershwin** during first sentence; prompt on partial] <WH>

14. One monarch of this name deposed the antipope Benedict XIII, ending the Western Schism. Two men of this name led the Catholic forces to victory at the Battle of Nordlingen, and another man of this name united Leon with Castile with his marriage to Sancha. A man with this *first* name was overthrown by the People Power Revolution. A king of this name minted coins bearing his name and that of Joanna to prevent Philip the Fair from gaining Castile, which he had previously held joint rule over. For 10 points, identify this name shared by several Spanish leaders, one of whom authorized Columbus's expedition to the New World as king of Aragon and who completed the Reconquista.

ANSWER: **Ferdinand** <ZZ>

15. One of this writer's novels opens with the narrator's conception on a polluted beach 9 months before Columbus Day. In another of his novels, Felipe Montero is shocked to realize the title character was created by the widow's will, while another work features Ixca Cienfuegos and Federico Robles. This author of *Christopher Unborn*, *Aura* and *Where the Air is Clear* also created Harriet Winslow and Tomas Arroyo, who is executed by the army of Pancho Villa in *The Old Gringo*. The deaths of Regina and Lorenzo haunt another of his characters, who reflects on his marriage and business empire on his deathbed. For 10 points, name this writer of *The Death of Artemio Cruz*.

ANSWER: Carlos **Fuentes** <MZ>

16. After the husband of this goddess killed the goddess of sustenance, she denounced him as evil. Her father banished her brother from heaven twice, and the two were eventually reconciled when he presented her with a sword. That brother threw a dead pony at the loom of this goddess, who was coaxed out of hiding after being blinded by her reflection in the mirror Yata no Kagami. This goddess gave the Iwata along with the Yasanaki gem and the Kusanagi to her grandson, the first emperor of Japan, and Tsukiyomi was her brother. For 10 points, name this kami of the sun, who was born out of Izanagi's left eye.

ANSWER: **Amaterasu** <WD>

17. It is found along with hydrogen and oxygen in sassolite, and heterodiamond is formed by combining carbon with its cubic nitride. Compounds consisting of an equal number of this element and hydrogen have a charge of -2 and are prefixed *closo*-, as opposed to *nido*- or *arachno*-. A material resistant to thermal shock, manufactured from silica and this element's oxide, is known as Pyrex glass. A neutral atom of this element has 3 valence electrons, but it is typically stable with just 6, violating the octet rule. It has an atomic number of 5. For 10 points, name this metalloid with chemical symbol B.

ANSWER: **boron** <SH>

18. A writer from this country created such heteronyms as Alvaro de Campos, Alberto Caeiro, and Bernardo Soares. The author of *Message* and *The Book of Disquiet* converses with Ricardo Reis in another work from here. Venus guides the protagonist to the Isle of Love in its national epic, *The Lusiads*. A writer from this country created a character who believes his death will thwart the establishment of Christianity in *The Gospel According to Jesus Christ*, as well as the doctor's wife, who is the only one to escape a sudden epidemic of blindness. For 10 points, name this country home to Jose Saramago.

ANSWER: **Portugal** <MZ>

19. This figure employed Girikaa in his execution chamber, dubbed "the Paradisal Hell". This man was a ruler of Ujjain before claiming his most famous title after killing the ruler of Taxila; that ruler, Susima, was this man's half-brother. His most famous victory occurred at the Dhauligiri Hills, after which he inscribed edicts in pillars topped by four lions which were distributed throughout his empire. Kharavela would later revenge his taking of the Jina statue after his death. Following the brutal Kalinga War, this man rejected more war and bloodshed and sent his children to peaceful convert Sri Lanka. For 10 points, name this grandson of Chandragupta who converted to Buddhism during his rule over the Mauryan Empire.

ANSWER: **Ashoka** the Great [or **Ashoka** Maurya] <WR>

20. This painter depicted a spectacled woman in a white dress holding a newspaper, the artist's mother. In another painting by this artist, the high shoreline runs parallel to bright yellow seats on the title vehicle, in which a man rows a woman in a white hat holding her pink-clad baby. This painter of *Reading Le Figaro* and *The Boating Party* was influenced by Japanese woodcuts as well as contemporaries like Renoir and Degas, whom she exhibited with in Paris as part of the Impressionist movement. For 10 points, name this American woman who painted *The Bath*, one of her many scenes of mothers and children.

ANSWER: Mary Cassatt <WR>

TB. This man was the first to prove that rainfall was a result of changes in temperature, and he also proposed that discoloration of the vitreous humor was the cause of color blindness. This man noted that oxygen only combined with a certain amount of nitrous oxide or twice that amount, but no intermediate amount, discovering the Law of Multiple Proportions. This pioneer of atomic theory designed the “billiard ball” model of the atom as an indivisible, indestructible unit of matter. For 10 points, name this English chemist whose namesake law states that the total pressure of non-reactive gases is equal to the sum of individual partial pressures.

ANSWER: John Dalton <AM>

Round 08 – Bonuses

1. Name some impressive waterfalls, for 10 points each.

[10] These falls actually consist of three waterfalls, two in New York State and Horseshoe Falls in Ontario, Canada. Its namesake river connects Lake Ontario and Lake Erie.

ANSWER: **Niagara** Falls

[10] This highest uninterrupted waterfall is located in Canaima National Park in Venezuela. It is named for the American aviator who discovered it upon crashing his monoplane onto Auyantepui.

ANSWER: **Angel** Falls

[10] This South American country is home to the powerful Kaieteur Falls on the Potaro River, a tributary of Essequibo. Other waterfalls in this nation are on the Courantyne River, which also flows through Suriname.

ANSWER: Co-operative Republic of **Guyana** <WR>

2. Identify some things about historical literature of dissent for 10 points each.

[10] This Czech author of the *Vanek* Plays was a draftee of Charter 77 and oversaw the dissolution of Czechoslovakia while serving as its president during the Velvet Revolution.

ANSWER: Vaclav **Havel**

[10] This French artillery captain was imprisoned on Devil's Island on accusations of espionage, though the evidence seemed to indict Ferdinand Esterhazy instead. Emilie Zola penned the open letter *J'accuse* in response.

ANSWER: Alfred **Dreyfus**

[10] This Polish leader published an independent underground newspaper, the *Robotnik*. After fending off the Soviet Union in a war, he took a brief retirement before leading a coup to "cleanse Poland" in the *Sancja*.

ANSWER: Jozef **Pilsudski** <ZZ>

3. A common one, with *N*, *H*, and *K* types, was first discovered in rat sarcomas. For 10 points each:

[10] Name these objects which, when deregulated, may activate p53. They include Src ("SARC"), a cytoplasmic tyrosine kinase, and Ras, which is prevented from mutating by drugs like Reolysin and Salirasib.

ANSWER: **oncogenes** [or **proto-oncogenes**]

[10] These malignant neoplasms may be caused by oncogenes. They commonly come in pancreatic, lung and testicular varieties.

ANSWER: **cancers** [prompt on "tumor"]

[10] This ability of tumor cells to propagate from an organ to a non-adjacent organ is not found in basal-cell carcinoma, making it relatively nonlethal. This process causes the formation of secondary tumors.

ANSWER: **metastasis** [accept word forms] <WH>

4. Yang Guifei took offense at this writer's poems about her. For 10 points each:

[10] Name this Chinese poet of "Thinking on a Still Night" who wrote "Life in the world is but a big dream" in "Waking From Drunkenness on a Spring Day".

ANSWER: **Li Bai** [or **Li Po**; or **Li Bo**; or **Li Pai**; prompt on "Li"]

[10] The speaker of this Li Bai poem reminisces how she "played about the front gate, pulling flowers" when her now absent husband came by, and promises that she will meet him "as far as Chang Feng Sha".

ANSWER: "The **River Merchant's Wife**"

[10] The speaker of a Li Bai poem lifts his head to gaze at this entity, then lowers his head and feels homesick. Another Li Bai poem laments, "alas, it is no drinker of wine", and a Su Shi poem wonders when it will be bright.

ANSWER: the **moon** [or **yue**] <PS>

5. Sometimes, a tuba just isn't good enough. Name these composers who invented their own brass instruments, for 10 points each.

[10] This "American March King" invented a new tuba for the United States Marine Band. He wrote the credits song for Monty Python's Flying Circus, The Liberty Bell march, and Stars and Stripes Forever.

ANSWER: John Philip Sousa

[10] This composer's namesake tuba was created to play the Valhalla theme in his most famous operatic cycle. His other operas include the German legend *Tannhauser* and a Renaissance guild in *Die Meistersinger von Nurnberg*.

ANSWER: Richard Wagner

[10] The Wagner tuba was also used in this man's 7th symphony. He composed a number of motets, like an *Ave Maria* and *Os Justi*, as well as the symphonies like the "Saucy Maid" and the "Romantic".

ANSWER: Anton Bruckner <WR>

6. This holiday is one week before Easter. For 10 points each:

[10] Commemorating Jesus' entry into Jerusalem, riding a donkey while others shouted "Hosanna!," it is celebrated by the distribution of its namesake branches to celebrators, although yew or willow are also used.

ANSWER: Palm Sunday [accept Passion Sunday]

[10] This was final meal Jesus had with his apostles. Jesus foresaw a betrayal from one of his disciples, washed their feet, and predicted that St. Peter would deny knowing him at this event.

ANSWER: Last Supper

[10] The earliest mention of the Last Supper can be found in this book. Thought to be written by Paul, it contains the famous line "When I was a child, I spoke as a child, I understood as a child, I thought as a child: but when I became a man, I put away childish things."

ANSWER: First Epistle to the Corinthians [prompt on "Corinthians"] <PS>

7. Luigi Galleani was an important figure in this movement in America, and his followers were responsible for many bombings and assassination attempts. For 10 points each:

[10] Identify this movement whose followers included Nicola Sacco and Bartolomeo Vanzetti, which agitated against the existence of the state.

ANSWER: anarchism [accept clear equivalents]

[10] This Attorney General under Woodrow Wilson was targeted by a failed Anarchist bomb attack that destroyed his house. In response, he ordered a series of namesake raids which arrested radical leftists for deportation.

ANSWER: Alexander Mitchell Palmer

[10] Many of those arrested were temporarily held at this location to face deportation hearings. Over 12 million immigrants passed through here prior to its closure in 1954, and it now houses an immigration museum.

ANSWER: Ellis Island <JL/ZZ>

8. Let's follow the death of a supermassive star for 10 points each.

[10] The star's final stage is a red supergiant with a core of these two elements produced during the silicon burning phase. Unlike the fusion of lighter elements, fusing these elements produces no net energy. Name either.

ANSWER: iron or nickel [accept Fe or Ni]

[10] The star undergoes core collapse when gravity overcomes electron degeneracy pressure, an effect which stems from this principle which forbids two fermions from occupying the same quantum state.

ANSWER: Pauli exclusion principle

[10] Core collapse causes a shock front to blow away the outer layers of the star in the Type II of these stellar explosions, which may form heavier-than-iron elements via the r-process.

ANSWER: supernovae <MZ>

9. He developed the "cut-up" and "fold-in" methods with the artist Brion Gysin. For 10 points each:

[10] Identify this author of *Queer* and *Junkie*. He wrote a novel mostly set in Interzone that features his alter ego William Lee, *Naked Lunch*.

ANSWER: William S. Burroughs

[10] Burroughs appears as Bull Lee in this Beat novel, which follows the travels of Sal Paradise and Dean Moriarty.

ANSWER: On the Road

[10] Burroughs and the author of *On the Road*, Jack Kerouac, are two of many writers declared "holy" in this Allen Ginsberg poem. It opens "I saw the best minds of my generation destroyed by madness".

ANSWER: "Howl" <MZ>

10. All of the figures depicted in this work are barefoot, wear plain loose robes, and stand at the same level as the viewer. For 10 points each:

[10] Name this sculpture depicting six Frenchmen with nooses around their necks who volunteered to sacrifice themselves during the Hundred Years' War.

ANSWER: The **Burghers of Calais** [or Les **Bourgeois de Calais**]

[10] Originally part of the artist's *Gates of Hell*, this sculpture shows a seated man in a pensive position with his bowed head resting on his hand.

ANSWER: The **Thinker** [or Le **Penseur**]

[10] This French sculptor of *Monument to Balzac* created a bronze statue of a nude male clasping his head with one hand in *The Age of Bronze*, in addition to sculpting *The Burghers of Calais* and *The Thinker*.

ANSWER: Auguste **Rodin** <MZ>

11. Its founder held that the highest form of pleasure was "katastematic" as opposed to "kinetic". For 10 points each:

[10] Name this philosophical school, named after its Athenian founder, which believed pleasure to be the ultimate good, advocating moderate asceticism in order to be free from pain.

ANSWER: **Epicureanism**

[10] This Roman Epicurean stated that the "nature of mind and soul" is "corporeal" in his *De rerum natura*, or "On the Nature of Things", which also asserts that nothing exists except bodies and the void.

ANSWER: Titus **Lucretius** Carus

[10] Lucretius's metaphysical theory posited that physical objects were constructed of these indivisible, eternal units. Leucippus's theory on these entities was extended by his student Democritus.

ANSWER: **atoms** <WR>

12. Its intensity varies with the fourth power of temperature according to the Stefan-Boltzmann law. For 10 points each:

[10] Name this form of energy which propagates from all matter above absolute zero. This type of heat transfer, exemplified by the Sun warming the Earth, involves the movement of electromagnetic waves.

ANSWER: thermal **radiation**

[10] Objects with emissivities of exactly one at thermal equilibrium are designated these, which absorb all incident radiation. Perfect ones don't exist, but cavities with holes can approximate these objects.

ANSWER: **blackbodies**

[10] The classical Rayleigh-Jeans law incorrectly predicts radiation with infinite power. That problem, solved by Max Planck, is given this name after the short wavelength in which it was predicted to occur.

ANSWER: **ultraviolet catastrophe** [prompt on partial] <WR>

13. He was displeased with the terms of the Armistice of Villafranca, and was able to regain power after a brief retirement. For 10 points each:

[10] Identify this first Prime Minister of Italy who gained that post following the failure of General La Marmora's tenure and oversaw the unification of Italy.

ANSWER: Camillo Benso, Count of **Cavour**

[10] This Prime Minister of Italy resigned following his failure to gain Fiume as part of the negotiations at Versailles, though he was also known as the "Premier of Victory" for coming to power and leading Italy to victory following the setback at Caporetto.

ANSWER: Vittorio Emanuele **Orlando**

[10] This leader of the Christian Democracy party brokered a famous Historic Compromise with the PCI to form a coalition government. In response to the compromise, he was kidnapped by the Red Brigades and killed after 55 days.

ANSWER: Aldo **Moro** <ZZ>

14. At its open, the protagonist thinks, "What a lark! What a plunge!". For 10 points each:

[10] Name this novel in which Clarissa reminisces about Sally Seton and Peter Walsh before hearing of Septimus Smith's suicidal plunge during a party.

ANSWER: **Mrs Dalloway**

[10] This writer of *A Room of One's Own*, *Orlando*, and *Mrs Dalloway* described Lily Briscoe finishing a portrait while the Ramseys make the title voyage in *To the Lighthouse*. After the Blitz, she drowned herself in a river.

ANSWER: Virginia Woolf [or Adeline Virginia Stephen]

[10] This Woolf novel weaves together the rhythm of the sea with the voices of Bernard, Susan, Jimmy, Rhoda, Neville, and Louis, who discuss among other things, their late friend Percival.

ANSWER: *The Waves* <MZ>

15. Answer some questions about a certain tool. For 10 points each, they're sure to be a smash hit.

[10] In the Marvel universe, Norman Osborn reforms S.H.I.E.L.D. into this organization after Tony Stark's security system is compromised by the secret Skrull invasion of Earth. This organization is ultimately dissolved following the failed siege of Asgard.

ANSWER: H.A.M.M.E.R.

[10] In this song, MC Hammer claims you must "break it down" since it is "Hammer time" and that he is "dope on the floor and magic on the mic". He proposes that this song will make listeners thinner since he is "makin' 'em sweat".

ANSWER: "U Can't Touch This"

[10] In this sport, the advantage to toss the last stone is called the hammer. The Canadian team for this sport included Kevin Martin and John Morris, and won the 2010 Vancouver Olympic gold medal in this winter sport.

ANSWER: curling <WH>

16. Measured by the Beck Inventory, it is often comorbid with anxiety, PTSD, or drug dependence. For 10 points each:

[10] This disorder alternates with mania in bipolar disorder. Its symptoms include social withdrawal, appetite and sleep changes, fatigue, and persistent disinterest or general sadness.

ANSWER: depression [or major depressive disorder]

[10] Zoloft treats depression by selectively inhibiting the reuptake of this neurotransmitter. Derived from tryptophan, it has also been linked to schizophrenia and OCD.

ANSWER: serotonin [or 5-HT; or 5-hydroxytryptamine]

[10] Mental disorders like schizophrenia and OCD are diagnosed via criteria set by this manual published by the American Psychiatric Association. Its fifth edition eliminated the bereavement exception for depression.

ANSWER: DSM [or Diagnostic and Statistical Manual of Mental Disorders] <MZ>

17. The Cativa process uses an iridium-based catalyst to produce it from methanol. For 10 points each:

[10] Name this weak monoprotic acid with formula CH₃COOH. As a polar molecule, its wet form serves as the solvent in Woodward cis-hydroxylation, and it is found in vinegar.

ANSWER: acetic acid [accept ethanoic acid; prompt on "acetate"]

[10] A mixture of acetic acid, EDTA and Tris base forms a buffer solution used in this laboratory technique. Usually performed in agarose gel, this method uses an electric field to separate nucleic acids by size.

ANSWER: gel electrophoresis

[10] As a hexadentate ligand, EDTA also serves as one of these compounds by sequestering metal cations using its amine and carboxylate groups. One application of these molecules is in treatments for lead or arsenic poisoning.

ANSWER: chelating agents [accept chelates or word forms] <WR>

18. A treatise in this novel describes with uncanny precision the dual nature of the protagonist. For 10 points each:

[10] Name this novel in which Harry Haller meets Hermine in The Black Eagle. Mozart makes a surprise appearance after Pablo leads Harry into the trippy Magic Theater.

ANSWER: Steppenwolf [or *Der Steppenwolf*]

[10] This author of *Steppenwolf* and *Narcissus and Goldmund* chronicled the journey of the title character from Brahmin to ascetic to businessman to ferryman in *Siddhartha*.

ANSWER: Hermann Hesse

[10] In this Hesse novel, Emil Sinclair realizes that the "world of light" is not the only world after the title character saves him from Franz Kromer. Sinclair later paints Abraxas and title character's mother.

ANSWER: Demian <TN>

19. Answer these questions about Norse mythology for 10 points each.

[10] This giant was the first being, created when the fire of Muspelheim and the ice of Niflheim formed a water droplet. A race of frost giants descended from him.

ANSWER: Ymir [accept Aurgelmir, Brimir, or Blainn]

[10] When Ymir got too huge and powerful, Vili, Ve, and this god killed him. He is the husband of Frigg and ruler of the Aesir.

ANSWER: Odin [or Wotan]

[10] Odin gave up his eye so that he might gain knowledge by drinking from the well of this figure. The Vanir cut off his head, which Odin kept and consulted for advice.

ANSWER: Mimir [or Mim] <PS>

20. In its native Quechua tongue it is known as Tawantinsuyu or “Land of the Four Quarters”. For 10 points each:

[10] Identify this empire conquered by the Spanish and whose *mita* system was used by the Spanish to run the silver mines at Potosi.

ANSWER: Incan Empire

[10] This son of Huayna Capac claimed the Inca throne over this brother Huascar. The price for his ransom was a room full of gold, and he avoided being burned to death by being baptized- he ended up being strangled instead.

ANSWER: Atahualpa [or Atabalipa]

[10] Atahualpa was captured by forces under Francisco Pizarro during this “battle” which began after Atahualpa threw down a Bible offered to him, after which the Spanish attacked his large but barely armed retinue.

ANSWER: Battle or Massacre of Cajamarca <WR>

TB. The protagonist's husband is advised by Countess Ivanova to tell their child, Seryozha, that his mother is dead. For 10 points each:

[10] This novel begins with the line “All happy families are alike, all unhappy families are unhappy in their own way”. The title character elopes with Vronsky, but ultimately commits suicide by jumping into a passing train.

ANSWER: Anna Karenina

[10] This character in *Anna Karenina* proposes to Kitty twice before she accepts. A friend of Sitva, he comes to realize that he cares for his son as much as he cares for Kitty.

ANSWER: Konstantin Dmitrievich Levin

[10] This author of *Anna Karenina* and *War and Peace* wrote about the leadup to Pozdnyshov's murder of his wife in *The Kreutzer Sonata*.

ANSWER: Leo Tolstoy <PS>