

Minnesota Undergraduate Tournament 2016: A Vat of Ranch Dressing or a Bullet to the Head
Questions by Sam Bailey, Rob Carson, Mike Cheyne, Akhil Garg, Carsten Gehring, Andrew Hart, Ike
Jose, Shan Kothari, Cody Voight, Najwa Watson, and NOT Cory Haala
Packet 6: Tossups

1. The anti-luminosity argument was introduced in a book about this concept “and its limits” by Timothy Williamson, who argues that this concept is unanalyzable. One philosopher used deliberately bad arguments to show that Heraclitus's flux theory is entailed by a theory of this concept “as perception”. “Fake barn cases” were introduced by Alvin Goldman as a counterexample to Goldman's causal theory of this concept, which was analyzed under four conditions in Robert Nozick's (*) “truth-tracking” theory of it. An example about Jones owning a Ford and Brown being in Barcelona, and Smith's belief that Jones has ten coins in his pocket, are invoked in a paper by Edmund Gettier contesting the definition in Plato's *Theaetetus* of this concept being “justified true belief”. For 10 points, name this concept central to epistemology.

ANSWER: knowledge [accept word forms such as knowing] <Kothari>

2. George Airy's analyses of these phenomena focus on scattering creating an Airy wavefront, which is bounded by caustics. These phenomena are primarily constructed of “class 3” rays, which have only undergone one internal reflection. There is no internal reflection in between the primary and secondary variants of these things, which results in the presence of Alexander's dark band. Super•numerary arcs occur below them due to light interference. The tops of these phenomena are centered on the (*) antisolal point and are always at an angle of 42 degrees opposite a light source, an angle that is calculated from red light refracting, reflecting, and then refracting again through water. For 10 points, name these arcs created by dispersion in raindrops.

ANSWER: rainbows <Garg>

3. The theory that this man was murdered is the subject of a 2009 *Harpers* article by Elif Batuman, who described the copyright battle after this man's death that took place between a group of hangers-on known as the “Dark Ones” and this man's wife Sonya. This man retained the copyright to a single novel, in which a nobleman's affair with a maid leads to her descent into prostitution, whose proceeds this man used to fund the resettlement in Canada of a group of religious dissidents called the (*) Doukhobors. This author of *Resurrection* wrote of a man who rides trains seeking repentance after stabbing his wife to death when he catches her with a violinist with whom she plays a Beethoven piece in his novella *The Kreutzer Sonata*. The title judicial official falls while hanging curtains in *The Death of Ivan Ilyich*, a novella by, for 10 points, what Russian author of *War and Peace*?

ANSWER: Leo Tolstoy [or Count Lev Nikolayevich Tolstoy] <Hart>

4. A son of this ruler may have been killed by an impostor named Gaumata, who then took the throne. This king set up a banquet to entrap a general named Spargapises, who got drunk and was captured; that general's mother may have had this king's corpse beheaded and was named Tomyris. This king created perhaps the oldest known charter of (*) human rights, a declaration found on his namesake cylinder. This ruler's forces defeated Nabonidus at the Battle of Opis, part of a series of conquests that eliminated other kingdoms such as Media and Lydia. As documented in the Book of Ezra, this ruler's edict of restoration ended the Babylonian captivity of the Jews. For 10 points, name this Persian ruler, the founder of the Achaemenid Empire.

ANSWER: Cyrus the Great [or Cyrus II; or Cyrus the Elder] <Cheyne>

5. This artist claimed that he read Jesus “for some kind of poem” in a song that includes the refrain “there’s only a shadow of me; in a manner of speaking I’m dead”. A second 2015 song by this artist has an upbeat second section that repeats the phrase “my brother had a daughter”, following a sad first section in which he remembers being “three, maybe four” when his mother “left us at that video store”. In a song from the same album, this artist answered the question of “what did you learn from the Tillamook burn and [the title holiday]?” with “we’re all gonna die”. This artist included “John My Beloved”, “Fourth of July”, and (*) “Should Have Known Better” on a 2015 album titled for the first names of his mother and his stepfather. For 10 points, name this singer-songwriter whose 2015 album *Carrie & Lowell* marks a return to the indie folk style of his earlier albums *Michigan* and *Illinois*.

ANSWER: Sufjan Stevens <Hart>

6. A song from this musical work names a slideshow of photos depicting drag queens, heroin use, and other aspects of post-Stonewall Bowery culture by Nan Goldin. A song in this work that obsessively returns to a C major sixth chord was written at the demand of Harald Paulsen. Nina Simone covered a revenge song from this work sung from the perspective of a maid who imagines pirates leveling her town. “The Ballad of Sexual Dependency” and “What Keeps (*) Mankind Alive?” appear in this work’s second act, during which the prostitute Jenny sends a character to jail despite the efforts of police chief Tiger Brown. One song contrasts a shark’s teeth with a murderer’s jackknife and was covered by Bobby Darin. Polly Peachum marries Macheath in this work’s first act. “Mack the Knife” opens, for 10 points, what adaptation of *The Beggar’s Opera* by Kurt Weill and Bertolt Brecht?

ANSWER: *The* Threepenny Opera <Kothari>

7. Low-birth-weight babies at risk of SIDS may be put in “sleep sacks” to avoid a buildup of elevated amounts of this compound in the body, which is called hyper•capnia. High readings for this compound on an ABG exam indicate a risk of respiratory acidosis. One of the fastest known enzymes maintains the body’s acid-base balance using an input of water and this compound to produce an anion found in (*) baking soda. Unlike oxygen, which binds to iron, this compound binds to a nitrogen on the alpha chain of hemoglobin. Christian Bohr discovered that an increase in the concentration of this compound in the blood, which lowers blood pH levels, decreases hemoglobin’s ability to bind to oxygen. Carbonic an•hydrase produces bi•carbonate from water and, for 10 points, what gas that, along with water, is a product of aerobic respiration?

ANSWER: carbon dioxide [or CO2] <Hart>

8. In one work, this man used an elaborate series of correspondences to a fictionalized Japan to satirize English politics during the Seven Years’ War. This man’s dour attitude toward innkeepers and foreigners led him to be satirized as “Smelfungus” in Laurence Sterne’s *A Sentimental Journey*, which was inspired by this man’s travelogue *Travels through France and Italy*. Cadwallader Crabtree and Hawser Trunnion appear in a 1751 novel by this man that includes Frances Vane’s *The Memoirs of a Lady of Quality* in its pages. A carriage overturns into a river next to Mr. Dennison’s house, leading to the revelation that the title character is Matthew (*) Bramble’s son, in this author’s novel *The Expedition of Humphry Clinker*. For 10 points, name this 18th-century Scottish author of the comedic picaresques *The Adventures of Peregrine Pickle* and *The Adventures of Roderick Random*.

ANSWER: Tobias Smollett [or Tobias George Smollett] <Hart>

9. A ruler of this dynasty faced uprisings after replacing different taxes with a universal salt tax; eventually, that ruler pretended to exile his main adviser to a monastery. Legendarily, a man named Susanin protected this dynasty’s first ruler by guiding enemy soldiers deep into the forest to die. A ruler of this dynasty supported such reforms as replacing a two-finger sign of the cross with a three-fingered one; that occurred during the Raskol reforms of Nikon, who fought the Old Believers of a church. The father of its first ruler was made a patriarch by the second (*) False Dmitry after having once been banished by Boris Godunov. The Time of Troubles ended when this dynasty’s Michael took the throne. For 10 points, name this house of Nicholas II that was the final imperial dynasty of Russia.

ANSWER: House of Romanov [or Holstein-Gottorp-Romanov] <Cheyne>

10. The subject of the 1966 *Portrait of Nick Wilder* is in one of these places. An 11-by-7 grid of Polaroids depicting the “Sun on” one of these places shows one at the Roosevelt Hotel inside which the artist painted many blue half-ellipses. The largest of Henri Matisse's cutout works, which was installed in the artist's dining room, is a series of blue figures on a strip of white paper that is entitled for one of these places. Peter Schlesinger wears a red blazer, and stares down at a man in white shorts who is in one of these places, in the 1972 *Portrait of an Artist*. Two palm trees and a single chair stand near an adobe-colored house, as a single brown plank juts out from the lower right, in a painting that shows the aftermath of someone (*) jumping into one of these places. For 10 points, name these places that David Hockney often painted, including in *A Bigger Splash*, which shows a diving board.

ANSWER: swimming pools [accept *La Piscine*] <Hart>

11. A group of this many characters includes a pair who share their names with a duo whose backs are broken when Grid's staff prevents a chair from being shoved into the ceiling. A particularly excellent whetstone thrown into the air caused this many servants of Baugi to accidentally cut each other's throats. According to a Homeric hymn, Leto spent this many days and nights on Delos in labor before giving birth to Apollo. Characters whose names mean “foam-fleck” and “cool wave” are among the group of this many (*) “billow-maidens” born to Ran and Aegir. In order to gain the knowledge of the runes, Odin hung himself on Yggdrasil for this many days and nights. Some scholars suggest that Aegir's daughters may be the same as the group of this many mothers who bore Heimdall. For 10 points, give the number of daughters of Zeus and Mnemosyne who comprised the Muses.

ANSWER: nine [or 9] <Carson>

12. A man lost this position in 1952 because of serving as Dwight Eisenhower's campaign manager. Another man who held this post said “the hope still lives, and the dream shall never die” after losing the presidential nomination to Jimmy Carter. The first African American who was popularly elected to the U.S. Senate held this post and was named Edward Brooke. A man in this post had a nephew who was accused of (*) raping a woman in Palm Beach on Good Friday in 1991. That man served for over forty years in this post and was blamed for the death of Mary Jo Kopechne in the Chappaquiddick incident. For 10 points, name this legislative position once held by Ted Kennedy that represents a New England state in Congress.

ANSWER: senator from Massachusetts [accept just Massachusetts after “Senate” is read] <Cheyne>

13. A group of controversial female members of this institution were called the Philadelphia Eleven. A member of this institution, John Henry Hopkins, wrote an infamous 1861 scriptural defense of slavery. Conservatives detested one of its recent leaders, Katharine Jefferts Schori, who urged a “nuanced” view on abortion and was succeeded by this institution's first black leader, Michael Curry. A 2003 decision by this American institution was criticized by (*) Rowan Williams. This church elected Gene Robinson as the first openly gay bishop, which was one of the factors that prompted the creation of the more conservative Anglican Church in North America. For 10 points, name this U.S.-based mainline Protestant church that resembles the Church of England.

ANSWER: Episcopal Church [or TEC; or Episcopalian Church; or Protest Episcopal Church in the United States of America; or PECUSA; or ECUSA; prompt on Anglican Communion; prompt on Anglican Church; do not accept or prompt on “Anglican Church in North America” or “Church of England”] <Cheyne>

14. This quantity, as a function of the position x , is often plotted on the same diagram as shear as a function of x in the structural analysis of beams. This quantity for a force is equal to the algebraic sum of its components about a point, according to Varignon's (vahr-in-yon's) theorem. An "arm" described by this term is the shortest distance between a line of force to the axis of rotation, and that definition helps to simplify the calculation of torque to force times this arm's length. The (*) first of these quantities for mass, divided by total mass, equals the center of mass. Generally, these quantities are a physical quantity multiplied by a distance raised to a power; for example, given a point mass, one symbolized by I is equal to mass times the square of distance from the rotational axis. For 10 points, name these things whose examples include one "of inertia".

ANSWER: moments <Garg>

15. In a play by this author, the title character is haunted by the image of a woman who steps out in front of his engine while wearing a red headscarf. Two inmates, one of whom has won early release, appear in a play by this man in which prisoners rehearse and perform Sophocles's *Antigone*. In another play by this author of *The Train Driver* and *The Island*, one character has an 18-year-old pen pal named Ethel, a planned visit to whom prompts the other central character to buy a set of fine clothes; that action leads to a confrontation between the two central characters in which the brother with lighter (*) skin calls the other a "swartgat". The image of a "world without collisions", exemplified by a ballroom dance floor, appears in this author's play about the African servants Sam and Willie's interactions with the title schoolboy. *The Blood Knot* and "*Master Harold*" . . . and the *Boys* are by, for 10 points, what South African playwright?

ANSWER: Athol Fugard [or Harold Athol Lanigan Fugard] <Hart>

16. A poem about this man describes him as "A bright soul driven, / fiend-goaded, down the endless dark" and notes that "When faith is lost, when honor dies, / the man is dead!" According to another author, this man owns a fishing rod named "Killall" and a pair of horses named Constellation and Constitution. In that story, this man is summoned from Marshfield to Cross Corners, where he gives a speech beginning with "the simple things that everybody's known and felt" that ends by describing "the endless journey of mankind". John Greenleaf Whittier's (*) "Ichabod" is about this man, who is also the namesake of a character who is fed several pounds of quail-shot by a stranger, causing Jim Smiley to lose a contest. For 10 points, name this American politician, the namesake of the "Celebrated Jumping Frog of Calaveras County", who defends Jabez Stone in a Stephen Vincent Benet story that pits him against the devil.

ANSWER: Daniel Webster [accept either underlined portion; or Dan'l Webster] <Carson>

17. An experiment studying how the experience of this variable is perceived by others asked subjects to evaluate the life of Jen, a woman who dies in a car crash. Ruut Veenhoven is the creator of an international database of this variable, and some of Veenhoven's work has cast doubt on the Easterlin paradox surrounding it. Sonja Lyubomirsky uses evidence from cognitive behavioral therapy to argue the level of this variable can be raised through "positive action interventions" like writing gratitude cards. Ed Diener and Martin (*) Seligman developed the subfield of "positive psychology" devoted to studying it. In the U.S., this variable increases with income until about \$75,000 per year, when it levels off. The government of Bhutan claims to measure the gross domestic level of this variable rather than material production. For 10 points, name this feeling of subjective well-being.

ANSWER: happiness [accept subjective well-being before "well-being"] <Bailey>

18. This composition's C minor fourth movement introduces a *molto espressivo* theme that is countered by the trombones' introduction of a motif often referred to as "disgust" or "satiety". Its final movement, which depicts the twelve chimes of the midnight bell, follows a movement in which a solo violin leads an elaborate Viennese waltz. This piece ends with flutes, piccolos, and violins playing a B major chord, while the cellos and basses pluck a C. A fugue containing all twelve notes of the chromatic scale appears in its sixth movement, (*) "Of Science". This piece opens with the double basses, contrabassoon, and organ holding a double low C before a rising C-G-C, which later recurs as the "Nature" motif, is played by the brass. That "Sunrise" movement of this work appears in *2001: A Space Odyssey*. For 10 points, name this Richard Strauss tone poem inspired by a Nietzsche book.

ANSWER: Also Sprach Zarathustra [or Thus Spake Zarathustra; or Thus Spoke Zarathustra; or Richard Strauss's Opus 30] <Carson>

19. Leaders of this party were accused of making a secret deal at a restaurant as part of the Granita Pact. This party was attacked in the 1990s by a poster showing its leader with "demon eyes" and a slogan warning of "New Danger" and in the 1970s by a poster showing a long snaking line of people at an unemployment office. Its loss was celebrated with the headline "It's The Sun Wot Won It". This party reinvented itself using the "Third Way" ideology in the mid 1990s, moving away from the policies of Neil Kinnock. It was led by a man who negotiated the (*) Good Friday Agreement but was criticized for his alliance with George W. Bush. For 10 points, what party of Gordon Brown and Tony Blair is currently the Official Opposition in the UK to the Conservative Party?

ANSWER: Labour Party <Cheyne>

20. A vanishing configurational entropy associated an ideal form of this material was explored by Kauzmann. An isostatic network is ideal for the formation of this material, whose properties can be predicted with rigidity theory. A polymer transitions from a state described by this term to a soft, rubbery material at a transition temperature named for this material. Cooling the surface of this material faster than its interior produces it in a (*) "tempered" form. Adding boron trioxide greatly lowers this material's coefficient of thermal expansion. The process of vitrification transforms a substance into this material, which is most commonly made of silicon dioxide and contains trace amounts of soda lime. For 10 points, name this non-crystalline amorphous solid that is transparent and is used in windows.

ANSWER: glass [accept silicon dioxide before "silicon"] <Garg>

Tiebreaker. This man's brother pursued the same career and was known as "Hardeen". He is occasionally falsely credited with performing the first aerial flight in Australia after a 1910 flight at Diggers Rest. This man cast the deciding vote to discredit Mina Crandon, who claimed to be able to summon her dead brother. He died after suffering a ruptured appendix brought on by a college student surprising him with a (*) punch to the abdomen. This man's determination to debunk phony mediums and spiritualists angered former friend Arthur Conan Doyle. He appeared in touring shows featuring his infamous "water torture cell" and "suspended straitjacket" stunts. For 10 points, name this Hungarian American illusionist famous for daring escape acts.

ANSWER: Harry Houdini [or Erik Weisz or Ehrich Weiss or Harry Weiss] <Cheyne>

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Packet 6: Bonuses

1. This man's son was killed by future Civil War general Daniel Sickles. For 10 points each:

[10] Name this man who watched the bombardment of Fort McHenry and later combined his writing with a British folk tune.

ANSWER: Francis Scott **Key**

[10] While watching the bombardment, Key would write "Defence of Fort M'Henry", a poem that was adapted into this song, the United States' national anthem.

ANSWER: "The **Star-Spangled Banner**"

[10] Key himself prosecuted Richard Lawrence, an insane house painter who unsuccessfully tried to kill this person. Lawrence was foiled when both of his pistols misfired due to the moist weather.

ANSWER: Andrew **Jackson** <Cheyne>

2. This composition calls for six offstage *buccine* (**boo-CHEE-nay**), ancient curved trumpets that are often omitted in favor of much easier-to-come-by flugelhorns. For 10 points each:

[10] Name this 1924 symphonic poem. Its third movement is a nocturne that ends with a then-innovative phonograph recording of a nightingale.

ANSWER: **Pines of Rome** [or **Pini di Roma**]

[10] *Pines of Rome* is the second part, sandwiched between *Fountains of Rome* and *Roman Festivals*, in this Italian composer and musicologist's aptly-titled *Roman Triptych*.

ANSWER: Ottorino **Respighi**

[10] The first suite of Respighi's *Ancient Airs and Dances* is based on pieces composed by Simone Molinaro, Vincenzo Galilei, and others for this Renaissance instrument. John Dowland's *Flow My Tears* was written for voice and this string instrument, characterized by the deep, rounded back on its body.

ANSWER: the **lute** <Carson>

3. This dramatist created a dashing, violent French swordsman named Bussy d'Ambois (**dahm-bwah**). For 10 points each:

[10] Name this playwright of the late 1500s and early 1600s, whose comedies include *The Widow's Tears* and *The Gentleman Usher*.

ANSWER: George **Chapman**

[10] "This Romantic poet was inspired by Chapman's translations of the *Iliad* and the *Odyssey* to write the sonnet "On First Looking into Chapman's Homer". He also wrote "Ode on a Grecian Urn".

ANSWER: John **Keats**

[10] Chapman also translated a work attributed to Homer entitled *Batrachomyomachia* (**bah-trah-coh-MY-oh-MAHK-ee-uh**), in which Zeus sends an army of crabs to intervene in a war between frogs and these other animals.

ANSWER: **mice** [accept **mouse**] <Hart>

4. Name these artists who painted or drew oft-criticized hands, for 10 points each.

[10] Ernest Chesneau's criticism of a hand that, "in the form of a toad, provokes hilarity" was a reaction to title character's hand covering her pubis in this Frenchman's painting *Olympia*. He also painted *Luncheon on the Grass*.

ANSWER: Edouard **Manet**

[10] This artist's pen-and-ink drawing *Praying Hands* is an iconic image. He also painted the plant watercolor study *Great Piece of Turf*.

ANSWER: Albrecht **Dürer**

[10] Felix Tournachon, better known as the photographer Nadar, savaged this French painter for the "flatulent hands" that appeared to contain "intestines" in his *Portrait of Monsieur Bertin*. The fresco *Hercules and Telephus* from Herculaneum inspired the pose of the hand in this man's portrait *Madame Moitessier*.

ANSWER: Jean-Auguste-Dominique **Ingres (ahng)** <Hart>

5. A generalization of the Heine-Borel theorem states that a space is compact if and only if it is totally bounded and has this property. For 10 points each:

[10] Name this property possessed by a metric space if every Cauchy (**koh-"she"**) sequence in the space converges.

ANSWER: **completeness**

[10] The metric function of a metric space is subadditive, which means that it satisfies an inequality named for this shape. In hyperbolic geometry, the interior angles of these shapes always adds up to less than pi radians.

ANSWER: **triangles** [accept **triangle** inequality]

[10] The reals can be constructed by putting all rational Cauchy sequences whose differences converge to zero into sets defined by this type of relation. This type of relation is reflexive, symmetric, and transitive.

ANSWER: **equivalence** relations <Bailey>

6. Answer the following about the literature of Kansas, for 10 points each.

[10] This girl, the protagonist of L. Frank Baum's *The Wizard of Oz* books, tells her dog Toto that she has "a feeling we're not in Kansas anymore".

ANSWER: **Dorothy Gale** [accept either underlined portion]

[10] The murder of the Clutter family in Holcomb, Kansas by the drifters Perry Smith and Dick Hickock is the subject of this book, which is sometimes called the first "nonfiction novel".

ANSWER: **In Cold Blood** [by Truman Capote]

[10] This "Playwright of the Midwest", who grew up in Kansas, had a series of Broadway hits in the 1950s starting with his play *Come Back, Little Sheba*.

ANSWER: William **Inge** [or William Motter **Inge**] <Hart>

7. This character was accused of making advances on a queen named either Anteia or Stheneboea, prompting her husband Proetus (**pro-EE-tus**) to send this man to Lycia, where Iobates attempted to arrange his death. For 10 points each:

[10] Name this hero who used a giant block of lead to successfully complete the suicide mission Iobates sent him on, which was to kill the fire-breathing Chimera.

ANSWER: **Bellerophon** [or **Bellerophontes**]

[10] Many of Bellerophon's exploits were carried out with the aid of this winged horse, who like his brother Chrysaor arose from the blood of Medusa.

ANSWER: **Pegasus**

[10] Though Bellerophon's actual father may have been Poseidon, his mother Eurynome's husband had this name. Bellerophon's grandson of this name is a cousin of Sarpedon who befriends Diomedes in the *Iliad*, while a son of Minos with this name died after falling into a jar of honey.

ANSWER: **Glaucus** <Carson>

8. Richard Nixon called this leader both a “clever fox” and a “witch”. For 10 points each:

[10] Name this female prime minister of India who was assassinated in 1984. She was the daughter of India's first prime minister, Jawaharlal Nehru.

ANSWER: Indira **Gandhi** [prompt on **Nehru**]

[10] Indira Gandhi was assassinated shortly after ordering Operation Blue Star, in which the Indian army entered this city, angering adherents of a certain religion and probably fueling her murder by her own bodyguards.

ANSWER: **Amritsar**

[10] In 1974, during Indira Gandhi's ministry, India successfully detonated a nuclear bomb for the first time during a test commonly known by this two-word English name.

ANSWER: **Smiling Buddha** [prompt on **Pokhran-I**] <Cheyne>

9. This quantity causes balloons to deflate if they are not tied up. For 10 points each:

[10] Name this “force” that counteracts a fluid's pressure in a container. Unlike hoop stress, this quantity describes the force in terms of the whole circumference of the vessel.

ANSWER: **wall tension** [or **wall stress**; prompt on “**tension**” or “**stress**”]

[10] The wall tension of a vessel is directly proportional to pressure and this quantity. According to Poiseuille's (**pwah-ZOY's**) law, flow rate is proportional to the fourth power of this quantity.

ANSWER: **radius** of curvature

[10] An equation named for this Frenchman relates wall tension, radius, and pressure. He also names a transform that is similar to a Fourier transform except that it outputs a complex function of a complex instead of a real variable, and a differential operator denoted “del squared”.

ANSWER: Pierre-Simon **Laplace** [accept **Laplace** equation or **Laplace** transform or **Laplace** operator or **Laplacian**] <Garg>

10. The preface to this book identifies its author as part of a group “whose duty is wakefulness itself” and claims that Christianity is “‘Platonism' for the people”. For 10 points each:

[10] Name this 1886 book on morality, a so-called “prelude to a philosophy of the future” that opens by asking “Supposing that Truth is a woman—what then?” The clash between its title concepts is compared to that between Rome and Judea.

ANSWER: **Beyond Good and Evil: Prelude to a Philosophy of the Future** [or **Jenseits von Gut und Böse: Vorspiel einer Philosophie der Zukunft**]

[10] *Beyond Good and Evil* was written by this aphoristic German philosopher, whose 1882 collection *The Gay Science* contained the first appearance of the line “God is dead”.

ANSWER: Friedrich **Nietzsche** [or Friedrich Wilhelm **Nietzsche**]

[10] Book IV of *The Gay Science* contains the longest discussion of this Nietzschean concept, which is presented as the only way to embrace the inevitability of eternal recurrence. Nietzsche defines this Latin phrase as his “formula for human greatness” in *Ecce Homo*.

ANSWER: **amor fati** [or **love** of (one's) **fate**] <Carson>

11. The two ranks of this position are “asogwe” and “sur pwen”. For 10 points each:

[10] Name this male religious title contrasted with the female mambo. A holder of this title may also have magical powers and be known as a bokor.

ANSWER: **houngan** [accept **houngan** asogwe or **houngan** sur pwen]

[10] The houngan is a male priest in this syncretic religion. It is heavily practiced in Haiti, while goofy Americans tend to associate it with zombie movies.

ANSWER: **Voodoo** [or **Vodou** or **Vodoun** or **Vaudou**]

[10] Vodou practitioners believe that, because the supreme god Bondye (**bohn-d'yay**) is distant and unknowable and thus cannot be directly worshiped, offerings should be given to these beings, sometimes called Mystères or Invisibles, which are roughly equivalent to Catholic saints.

ANSWER: **Loa** [or **Lwa** or **L'wha**] <Cheyne>

12. In the middle of this play, Colonel Redfern, the father of one member of the central couple, arrives to “rescue” his daughter. For 10 points each:

[10] Name this 1956 play whose gritty realism transformed British theater. In it, Jimmy Porter has an affair with his wife Alison's best friend Helena Charles, but the couple reconcile at its end.

ANSWER: Look Back in Anger

[10] *Look Back in Anger* was written by this playwright, a member of a group of British authors known as the Angry Young Men.

ANSWER: John Osborne [or John James Osborne]

[10] This author of the novel *Saturday Night and Sunday Morning* claimed that Osborne's *Look Back in Anger* “set off a landmine” that blew up British theater.

ANSWER: Alan Sillitoe <Hart>

13. This director pioneered a kind of low-angle, static shot called the tatami shot and frequently used sackcloth as the background of his credits sequences. For 10 points each:

[10] Name this Japanese director whose film *Late Spring* includes a famous shot of a vase in front of a screen. In 2012, his film *Tokyo Story* replaced *Citizen Kane* atop the *Sight & Sound* directors' poll.

ANSWER: Yasujiro Ozu

[10] Ozu is considered one of the greatest masters of Japanese film along with Kenji Mizoguchi and this director of *The Seven Samurai* and *Rashomon*.

ANSWER: Akira Kurosawa

[10] The style of Ozu is compared with Dreyer and Bresson in a monograph by Paul Schrader, who also wrote the screenplay for this film in which disturbed loner Travis Bickle plots to shoot Senator Charles Palantine.

ANSWER: Taxi Driver <Kothari>

14. Answer the following about the chemistry of jet fuel interacting with steel beams, for 10 points each.

[10] Jet fuel burns at about 1,000 degrees Celsius, a value below this temperature for steel, which is about 1,350 degrees Celsius. Tungsten is the element with the highest value of this temperature.

ANSWER: melting point [or liquefaction point; accept freezing point or crystallization point; accept melting temperature or equivalents]

[10] FEMA published a metallurgical study demonstrating that, despite the failure of the jet fuel to reach above 1,000 degrees Celsius, some melting may have occurred in the World Trade Center buildings due to a mixture of this type forming between iron, oxygen, and sulfur. These systems are the compositions of two or more chemical or atomic species in the ratios that generate the lowest possible melting temperature

ANSWER: eutectic mixtures or systems [do not accept or prompt on answers mentioning “eutectoid”]

[10] A study in the journal *JOM* concluded that the World Trade Center towers collapsed in part because of this thermodynamic process, whose volumetric coefficient is represented by alpha and is defined as “one over the volume” times “the partial derivative of volume with respect to temperature at constant pressure”.

ANSWER: thermal expansion [accept volumetric coefficient of thermal expansion or thermal expansivity; prompt on “expansion” or “expansivity”] <Hart>

15. This country was once ruled by a former Napoleonic general, who established its current royal house. For 10 points each:

[10] Name this country ruled by the House of Bernadotte. A ruler of this kingdom died at the Battle of Lutzen.

ANSWER: Kingdom of Sweden [do not accept “Norway”]

[10] The aforementioned ruler who died at Lutzen was this Swedish king, who won the Battle of Breitenfeld during the Thirty Years' War.

ANSWER: Gustavus Adolphus [or Gustav II Adolf]

[10] In 1719, during Sweden's “Age of Liberty”, these rival similarly named political factions emerged. One of these factions wanted an alliance with Russia, the other one wanted an alliance with France. Name both.

ANSWER: Caps and Hats [need both in either order; or Mossorna and Hattarna] <Cheyne>

16. Answer the following about what to do with an unknown piece of DNA, for 10 points each.

[10] To determine the order of nucleotides in the DNA fragment, you might use the chain-terminating type of this technology, for which Frederick Sanger won his second Nobel Prize. Alternatively, you might perform this action using a next-generation platform like Illumina or PacBio.

ANSWER: DNA **sequencing**

[10] If you have no idea what the sequence does, you could use this algorithm, conveniently implemented in a tool hosted by NCBI. This tool searches for similar sequences in a database like Genbank.

ANSWER: nucleotide **BLAST** [or nucleotide **basic local alignment search** tool; or **tBLASTx**]

[10] If you wanted to design primers to amplify the sequence in other organisms, you could use this tool to find regions that are well conserved in the population. "W" and "Omega" are two commonly used command-line versions of this multiple sequence alignment program.

ANSWER: **Clustal** <Garg>

17. Answer the following about Super Bowl 50, for 10 points each.

[10] Despite a 15-1 regular season record, this team's offense, led by Cam Newton, couldn't make much headway against Denver's stifling defense and fell to the Broncos 24-10.

ANSWER: **Carolina Panthers** [accept either]

[10] This Broncos outside linebacker forced a pair of fumbles that set up two Denver touchdowns and recorded two and a half sacks, accomplishments that more than warranted his selection as the game's MVP.

ANSWER: Von **Miller** [or Vonnie B'Vsean **Miller**]

[10] During a postgame interview with Tracy Wolfson, Broncos quarterback Peyton Manning described his priorities as wanting to "go kiss my wife and my kids, go hug my family, and" perform what off-puttingly brand-conscious action?

ANSWER: **drink** a lot of **Budweiser** tonight [prompt on "drink beer" or other less-specific answers] <Carson>

18. Michael Taussig explicates this concept using the example of Colombian sugarcane workers who believe that wage laborers can make a pact with the devil to make a lot of money, only to have to spend it on pointless consumer goods. For 10 points each:

[10] Identify this concept from Marx's *Das Kapital*, which refers to the reification of social relations into economic relations, such that power is attributed to goods rather than labor.

ANSWER: **commodity fetishism** [accept word forms such as **commodity fetishizing**]

[10] Taussig attributes the story about the devil to an application of this concept to the impersonal market. Marshall Sahlins classified balanced, negative, and generalized types of this concept, the last of which David Graeber calls "open" for its lack of accounts.

ANSWER: **reciprocity** [or word forms]

[10] Perhaps the foremost early theorist of reciprocity, Marcel Mauss, discussed the role of the *hau* in the gift-giving of the native Polynesian people, the Maori, of this country in Oceania.

ANSWER: **New Zealand** <Kothari>

19. Answer the following about historian Marc Bloch, for 10 points each.

[10] Bloch documented how this practice was frequently used in medieval times to cure diseases such as scrofula. Bloch claimed it was a form of mass hysteria and noted that Philip I claimed to have this power.

ANSWER: **royal touch** [accept answers that suggest a royal person is touching people; prompt on "**faith healing**" or "**royal healing**"]

[10] Many of Bloch's books describe this medieval form of labor relations that featured lords, vassals, and fiefdoms.

ANSWER: **feudalism**

[10] Bloch was a historian from 1919 to 1936 at a university in this French city. This Alsatian city is where Louis the German and Charles the Bald pledged allegiance to each other prior to the Treaty of Verdun.

ANSWER: **Strasbourg** [or **Strassburg**; or **Strossburi**] <Cheyne>

20. This animal's name suggests that he is the "first and foremost of all the hacks in the world". For 10 points each:

[10] Name this tired old animal whose rider challenges the Knight of the White Moon in a book supposedly translated from an Arabic manuscript by Cide Hamete Benengeli.

ANSWER: **Rocinante**

[10] Rocinante was created by this Spanish author, who wrote *Don Quixote*.

ANSWER: Miguel de **Cervantes** [or Miguel de **Cervantes** Saavedra]

[10] Rocinante is contrasted with a donkey owned by Sancho Panza that is frequently called by this word, although it's not actually his name. The disappearances and reappearances of this donkey are a playful textual element introduced by Cervantes.

ANSWER: **Dapple** [or **Rucio**] <Hart>

Extra. A topological space is an ordered pair of some set and a collection of these kinds of subsets. For 10 points each:

[10] Name this property possessed by all points in the discrete topology.

ANSWER: **openness**

[10] A function from one space to another has this property if and only if the pre-image of any open set in the range is open in the domain.

ANSWER: **continuity** [or word forms]

[10] Over a closed interval with the function taking values a and b at the endpoints, a continuous function will also take on all values between a and b , according to this theorem.

ANSWER: **intermediate value** theorem [or **IVT**] <Bailey>