

(This) Tournament is a Crime

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Packet 11

Tossups

1. **Frederick Hartt argues that the center of this painting depicts a youth whose left arm is modeled on that of Michelangelo's *Pieta* sculpture. After a cleaning, the urn made of rock crystal shown in this artwork was revealed to have a cross. That cross is a reference to Elena Tagliaferri the a female patron who commissioned this artwork. Signs that this painting is unfinished include the fact that St. Francis is missing from the background, and the completely-bald baby Jesus. Saint (*) Jerome unfurls a large scroll and looks to his left in this painting's background, whose depiction of a smooth, unadorned column suggests it was going to be set in front of a massive temple. Vasari called this painting "graceful" for depicting a woman with exaggerated fingers, A coterie of angels and the Virgin Mary dressed in all blue appear in, for 10 points, what celebratory scene made by Parmigianino?**

ANSWER: **Madonna with the Long Neck** [or **Madonna and Child with Angels and St. Jerome** before "Jerome"]

<IJ, Painting/Sculpture>

2. **A character in a novel by this author declines to write his proposed modern-day *Don Quixote*, in which a mystery novel junkie sets out to solve real crimes, because "I am not Cervantes... and I am very lazy." In another novel by this author, a woman spends the final eighty years of her life locked in an attic with her father's severed head. In that novel by this author, a woman ends her incestuous relationship with her father by killing him and burning down their mansion to commit suicide. The protagonist of a novel by him insults a post office worker for refusing to give him back the letter he had mailed to the *estancia* of (*) Hunter. In a novel by this author, a madman records his delusion that the visually impaired control the world in his "Report on the Blind." After noticing the detail of a solitary woman at a window in a painting, Maria Iribarne is stalked and killed by the artist, Juan Pablo Castel, in this author's short first novel. For 10 points, name this Argentine writer of the novels *On Heroes and Tombs* and *The Tunnel*.**

ANSWER: Ernesto **Sabato**

<AG, Long Fiction>

3. **David R. Porter allowed these people to create an arsenal of muskets taken from the Frankford Arsenal in order to protect themselves from a series of Philadelphia riots specifically targeting them in 1844. In the 1920s, the magazine *The Good Citizen* regularly published cartoons attacking these people, portraying them as a grotesque hand with long nails grabbing at the United States as well as a tree being actively felled that "must come down." Schoolchildren are threatened by people of this type represented as (*) crocodiles rising out of water in the Thomas Nast cartoon *The American River Ganges*. A rhetorical question embedded in a speech to the American Society of Newspaper Editors asked if "a Jew can become mayor of Dublin" but one of these people "cannot be President of the United States?" In a slogan attacking James G. Blaine, this quality was paired with "Rum" and "Rebellion." Al Smith and John F. Kennedy faced significant opposition from nativists because—for 10 points—they belonged to what faith?**

ANSWER: **Catholics** [accept **Popism**; accept **Popery**; accept "Rum, **Romanism**, and Rebellion"; prompt on **Romans**; do not accept or prompt on Irish, even though most Irish are Catholic]

<BL, American History>

4. **In the article "An Utterly Dark Spot," Miran Bozovic states that this object was intended to "create the fiction of God," citing the doctrine of real presence as evidence of that view. This thing gives its name to a theory positing a "new political anatomy" in which "object" and "end" are not the relations of sovereignty, but rather the "relations of discipline"; that theory named for this object was introduced in a book that considers this "cruel and ingenious" object as a "heterotopia" in which individuals collaborate on their own (*) subjection. The original description of this construct, which was accompanied by the architect's Willey**

Revely's drawings, describes how "every motion of the limbs" and "every muscle of faces" are under the "gaze of the inspector" within a central tower. Michel Foucault's *Discipline and Punish* discusses, for 10 points, what setup articulated in the letters of Jeremy Bentham?

ANSWER: Panopticon

<IJ, Thought>

5. Near the end of his career, W.D. Hamilton proposed a coevolutionary explanation for a striking physical feature of these structures. Six carbon aldehydes, alcohols, and esters make up the "volatiles" named for these structures that are released during tissue damage. The genus *Fenestraria* is so-named because it possesses a modified type of these structures resembling a translucent window. Christen C. Raunkiaer devised a scheme to classify the size of these structures by increasing orders of nine. These structures can be classified as actinodromous, acrodromous, campylodromous, parallelodromous, or (*) pinnate, depending on the patterns of their veins. Vertically-oriented palisade cells within these structures are responsible for most of their biochemical activity, and sit above their mesophyll layer. The cotyledon acts as one of these structures inside a seed. Fern fronds are analogous to these structures. For 10 points, name these chlorophyll-abundant plant structures that branch off of stems.

ANSWER: leaves [accept word forms]

<AG, Biology>

6. Alfred Deller is best-known for reviving dramatic works and songs by this composer. He used a three-bar ground bass in C minor for an aria often sung by a countertenor, whose lyrics describe snakes dropping from the head of the Fury Alecto. Originally written for a performance of *Oedipus*, that song was later published in this composer's posthumous collection *Orpheus Britannicus*. Musicologist Franklin Zimmerman primarily studies this composer's music, and compiled the Z numbers used to catalogue his works. He wrote an opera whose final aria is based on a chromatically descending (*) ground bass in G minor and 3/2 time. Today, countertenors often perform this composer's *Music for a While*. A chorus of witches and a chorus of sailors are characters in an opera by this composer in which the handmaid Belinda witnesses the aria "When I am laid in Earth" sung by her sister, the title queen of Carthage. For 10 points, name this composer of *Dido and Aeneas*.

ANSWER: Henry Purcell

<EK, Music/Opera>

7. In the third play in this series, a character declares his intent to "add colours to the chameleon, / Change shapes with Proteus for advantages, / And set the murderous Machiavel to school." The second play in this series presents an early version of Mary's Room in a scene in which a man claiming to have been miraculously cured of congenital blindness is exposed as a fraud when he correctly identifies the colors of robes. At the end of that play in this series, a man satisfies a prophecy that he should avoid castles, when he is killed under the sign of one hanging from an alehouse. Dick the Butcher suggests: "The first (*) thing we do, let's kill all the lawyers" during Jack Cade's rebellion in the second of these plays. Thomas Nashe may have co-written the Temple Garden scene in the first of these plays, in which nobles support the Duke of Somerset or Richard Plantagenet by plucking red or white roses. For 10 points, name this trilogy of history plays spanning the reign of the title ineffectual king, written by Shakespeare.

ANSWER: Henry VI

<AG, Drama>

8. A unique feature of this empire's flourishing ship-building industry was the practice of binding wooden planks tightly together with rope to form waterproof hulls rather than using nails. Among the architectural wonders of this empire's capital city was the Vittala Temple, which included a massive stone chariot, or *ratha*, and curious musical stone pillars which emanate different notes with different timbres when struck. Domingo Paes and Fernao Nuniz were two Portuguese travelers who described the massive scale of this empire after they visited it during the rule of its greatest emperor Krishnadevaraya. After this empire lost the disastrous Battle of (*) Talikota, it was rapidly dismantled, including the destruction of its prosperous capital city in modern-day Karnataka. The founding of the empire in the

14th century was the result of Hindu states resisting conquest by Muslim invaders from the north, who had subjugated Delhi. For 10 points, name this medieval empire in southern India, centered on the namesake now-ruined capital city.

ANSWER: Vijayanagara Empire [or the Karnata Empire; accept the Kingdom of Bisnegar]
<BL, World History>

9. This kind of concept is called a "right" in an Andre Gorz book discussing "The Condition of Post-Marxist Man." In a book subtitled "The New Dangerous Class," Guy Standing, who is part of a "Network" that advocates this concept, argues for the implementation of this concept to prevent the revolt of the so-called "precariat." Elizabeth Rhodes and Sam Altman at Y Combinator started a project in Oakland to test this concept, which was the subject of a referendum that was approved by only 23% of (*) Swiss voters in June 2016. In January 2017, the Kela Group started a study in which 2,000 Finnish people were subjected to this kind of policy. In a 2016 interview, Elon Musk stated that this kind of policy would be the solution to the rise of automation. For 10 points, name this kind of policy, in which the government gives its citizens some amount of money unconditionally.

ANSWER: Universal Basic Income [or unconditional basic income or citizen's income or basic income guarantee or universal demogrant; prompt on social security]
<IJ, Geography/Current Events/Other>

10. This property is violated in the bicycle model of neutrino oscillation. The anomaly frequencies of electrons and positrons are measured in experiments that attempt to detect violations of this property. Oscar Greenberg made a very disputed claim that the breaking of CPT symmetry necessitates the breaking of this property. Standard Model Extensions contain operators which violate this property. (*) The gauge condition in which $\Delta A + \frac{1}{c} \frac{d\phi}{dt}$ has this property unlike the Coulomb gauge. This property is also possessed by the d'Alembertian and the interval. This property is held by the electromagnetic field's Lagrangian but not Maxwell's equations. For 10 points, name this property of quantities or equations that do not change after a coordinate transformation between relativistic reference frames.

ANSWER: Lorentz invariance
<AW, Physics>

11. In his first book, San Jose State professor Todd Ormsbee claimed that this city's distinctive culture developed because of its relative geographic isolation. Bar owners banded together to form the Tavern Guild in response to police raids on their establishments in this city. A popular performer in this city was known as "the Nightingale of Montgomery Street" after his rise to fame singing at the Black Cat Bar. A popular gathering place for transsexuals in this city's (*) Tenderloin district was Compton's Cafeteria, which was the site of a 1966 riot after cafeteria staff called police to arrest rowdy patrons. Bathhouses were a common sight along this city's Castro Street, which was studied extensively by Randy Shilts in his book *And The Band Played On*. The first openly gay person to be elected to public office in the United States was assassinated along with the mayor of this city by Dan White. For 10 points, name this city, whose homosexual population included city supervisor Harvey Milk.

ANSWER: San Francisco
<BL, American History>

12. The ratio of these compounds to a lighter monomer determines whether the resin formed between the two is a novolac or resole. Most polycarbonates are made with a monomer formed by condensing two of these compounds with acetone. These non-nitrogenous compounds can be quantified with the Prussian blue assay, or with a phosphomolybdate and phosphotungstate mixture also used in the Lowry protein assay. Anisole is typically prepared by methylating one of these compounds. The most notable appearance of the (*) Hock rearrangement is in a process that forms acetone and the simplest of these compounds. Attempting to chlorinate that compound through EAS results in all of the para and ortho positions being substituted because it is so highly activated. One of these compounds is condensed with wood flour and formaldehyde to form Bakelite. One of these groups is found on the side chain of tyrosine.

The cumene process forms the simplest example of, for 10 points, what compounds that consist of aromatic alcohols?

ANSWER: phenols [I suppose I should prompt on alcohols]

<AW, Chemistry>

13. **This country was the setting of the collaborative artwork *When Faith Moves Mountains*, in which Francis Alÿs had 500 people move a geographical dune. Many cultures in this country developed the "Double Spout and Bridge" style of pottery. A culture from this country built the Temple of the Moon and the Temple of the Shrine nearby Cerro Blanco. The Larco Museum in this country contains a ceramic depicting fellatio, as well as numerous ceramics featuring a winged spider and sea monster known as "The Decapitator." Marilyn (*) Bridges hired an airplane to photograph a group of artworks in this country, some of whose colloquial names are "The Condor" "The Hands" and "The Hummingbird." This country, which was home to the Moche People, is also home to a group of desert geoglyphs in its south. For 10 points, name this country where one can find the Nazca Lines.**

ANSWER: Republic of Peru

<IJ, Other Art>

14. **Alexia Massalin introduced the "super-" form of this practice in a paper that discusses various techniques in evaluating the signum function. Values are recomputed rather than reloading them in a form of this technique called rematerialization; it is often seen as a form of this technique known as "hoisting," in which invariants are moved outside of the body of certain constructs. Expressions are replaced by their known values in constant folding, a type of this technique that along with strength (*) reduction comprises the "peephole" forms of this technique. This technique often converts a recursive tail call into an iterative loop, and loops themselves may be unwound as part of this technique, though an increase in space is needed. Compilers often perform, for 10 points, what process of improving the efficiency of a computer program?**

ANSWER: optimization [or optimizing]

<IJ, Math/Other Science>

15. **The Orthodox Jewish prohibition on *kol isha* prevents men from being in the presence of women performing this action, because the Talmud classifies it as *ervah*, or nakedness. Devout Syrian Jews often wake up before dawn and perform this action using the *Baqashot*. Though she was not ordained, Julie Rosewald became the first woman in America to practice a profession in which people perform this action. Traditionally, a professional performer of this action was required to possess a pleasing appearance, to wear a flowing (*) beard, and to be married. Younger Jews often reference popular culture when performing this action with a *piyyut* known as "Adon Olam." The first Jewish clergy recognized in the United States were surprisingly not *rabbis*, but rather people trained to perform this activity, known as *hazzan*, who follow a prescribed set of modes. For 10 points, cantors lead Jewish congregations in performing what musical activity?**

ANSWER: singing [prompt on making music and similar answers]

<AG, Religion>

16. **Though it is now understood that this writer died of uremia aggravated by a morphine overdose, several older sources mysteriously report his death as a suicide. The Barnum and Bailey Circus temporarily stopped trained animal acts as a result of lobbying from a club named for this author, who raised public awareness of cruelty to circus animals in the foreword to his novel *Jerry of the Islands*. This one-time oyster pirate established a financially disastrous "Beauty Ranch" in Sonoma County. The first recorded instance of the (*) drunken hallucination of "seeing pink elephants" appears in this author's memoir *John Barleycorn*. The term "yellow peril" gained traction in American discourse after this writer penned a super racist 1904 essay with that title. This writer's development of scurvy during the Klondike Gold Rush informed his story of a man who dies of hypothermia when he fails to perform the title action. For 10 points, name this author of "To Build a Fire," who wrote about the sled dog Buck in *Call of the Wild*.**

ANSWER: Jack London [or John Griffith London; or John Griffith Chaney]

<AG, Short Fiction/Miscellaneous>

17. In an early myth, a black otter and one of these animals appears when a Taoist monk exorcises a dying man. One of these animals becomes immortal after consuming some *tangyuan* that a disguised Lu Dongbin sells on a bridge. One of these animals hitches a ride on a horse's hoof before leaping ahead at the last minute during a race organized by the Jade Emperor. As a result, this animal immediately precedes the horse in the zodiac. A woman turns back into one of these animals after she is duped into drinking wine by the treacherous (*) turtle spirit Fa Hai. The Black Tortoise is frequently depicted in conjunction with this other animal. Leifeng Pagoda collapses after the rescue of a white one of these animals named Bai Suzhen. A pair of deities with the bodies of these *real-life* animals are members of the *sanhuang*, or the Three Sovereigns, named Fuxi and Nuwa. For 10 points, name this *real-life* reptile which resembles the mythical Chinese dragon.

ANSWER: snake [or serpent; or she; or si; do not accept "dragon"]
<EK, Legends>

18. A character in this poem prophesies that "Thou shalt prove how salt is the taste of another man's bread and how hard is the way up and down another man's stairs." In this poem, Justinian summarizes the glorious episodes of Roman history and laments the present era by comparison. In this poem's eighteenth canto, the final letter of the Latin phrase "QUI IUDICATIS TERRAM" transforms into a giant eagle. At the very end of this poem, the protagonist is stirred by "the (*) Love which moves the sun and the other stars," while trying to conceptualize how three concentric circles represent the trinity. St. Bernard prays to Mary on behalf of the protagonist of this poem after he sees an enormous rose housing several souls, in a plane beyond physical existence known as the Empyrean. In this poem, the Moon and Mercury are among the nine spheres of the title realm through which the protagonist is guided by his beloved, Beatrice. For 10 points, name this final part of Dante's *Divine Comedy*.

ANSWER: Paradiso [or Paradise; prompt on *The Divine Comedy*]
<AG, Poetry>

19. Over a thousand slaves forced to work on the production of these weapons were herded into a barn which was then set on fire in the Gardelegen massacre. After the damage from these weapons was blamed on exploding gas mains, people started humorously referring to them as "flying gas pipes." A never-used version of these weapons was housed in the fortress of Mimoyecques and was irreparably damaged in Operation Crossbow, which targeted these weapons for destruction via aerial bombing. Operation (*) Paperclip granted political amnesty to many scientists in exchange for their expertise gained while developing these weapons. The first version of these weapons was a winged bomb nicknamed "buzz bombs," while the widely-feared second version was the brainchild of Wernher von Braun and was a liquid-fuelled ballistic missile that could strike a target more than 200 miles away flying at over Mach 3. For 10 points, name these long-distance German "vengeance weapons."

ANSWER: V-weapons [or Vergeltungswaffen; accept V-1 flying bomb; accept V-2 rocket; accept V-3 cannon]

<BL, European History>

20. William Ophuls proposed a "steady-state philosophy" to reduce this quantity in response to Herman Kahn's suggestion that changes in this quantity are not "carcinogenic" but rather benevolent. A four-stage model that describes how this quantity changes over time is the subject of Warren Thompson's "transition" theory. The idea that increasing this quantity has been beneficial is the mainstay of so-called "cornucopian" theses and is central to the book *The Ultimate Resource* by Julian (*) Simon. Paul Ehrlich suggested that the rate of growth of this quantity should be zero in a book that refers to it as a "bomb." The idea that this quantity grows geometrically while resource production only grows arithmetically is the basis for the "Malthusian catastrophe." For 10 points, give this quantity, which is currently approximately equal to 7.5 billion.

ANSWER: human population [accept reasonable equivalents, such as the number of people; prompt on population]

<IJ, Social Science>

Bonuses

1. Enrollees of an academy purporting to prepare them for this kind of experience have both their feet amputated, in the satirical novel *Omon-Ra*. For 10 points each:

[10] Identify this type of experience, which the engineer Los daydreams about undergoing in order to investigate the mysterious message “Anta Odeli Uta” in Alexei Tolstoy’s novel *Aelita*.

ANSWER: **space travel** [or similar answers; accept **going to the Moon**; accept **going to Mars**]

[10] *Omon-Ra* is by this Russian science fiction author, who wrote about an army commander who uses the pinky of Anagama to operate a gun turret endowed with the power to reveal the true nature of things, in a novel variously titled *Chapayev and Void*, *Buddha’s Little Finger*, or *Clay Machine Gun*.

ANSWER: Victor **Pelevin** [or Victor Olegovich **Pelevin**]

[10] A shadowy figure pulls the narrator up from his grave and hurtles through space with him until they reach an Earth-like planet in this author’s story “The Dream of a Ridiculous Man.” Another of his ridiculous characters, Raskolnikov, has a number of weird dreams, in his novel *Crime and Punishment*.

ANSWER: Fyodor **Dostoevsky** [or Fyodor Mikhailovich **Dostoevsky**]

<AG, Long Fiction>

2. This opera ends with four main characters cheerfully singing that “all the world’s a joke” in the fugal chorus “*Tutto nel mondo è burla*.” For 10 points each:

[10] Name this 1893 opera, the last by Giuseppe Verdi, and his third based on a Shakespeare play.

ANSWER: **Falstaff**

[10] This German composer depicted the machinations of John Falstaff in his opera *The Merry Wives of Windsor*. He founded the Vienna Philharmonic in 1842 and was its conductor until 1848.

ANSWER: Otto **Nicolai** [or Carl Otto Ehrenfried **Nicolai**]

[10] Falstaff is the protagonist of *At the Boar’s Head*, a one-act opera by this composer of *The Planets*.

ANSWER: Gustav **Holst** [or Gustav Theodore **Holst**]

<EK, Music/Opera>

3. This poem was finally reprinted in 1867, at the urging of Robert Browning, after long being excluded from the poet’s collections. For 10 points each:

[10] Name this two-act dramatic poem whose title character rejects the poet Callicles’s appeals to beauty and urges his physician friend Pausanias to abandon his search for happiness.

ANSWER: **Empedocles on Etna**

[10] This Victorian poet scribbled the first two stanzas of his poem “Dover Beach” on preparatory notes for *Empedocles on Etna*.

ANSWER: Matthew **Arnold**

[10] To compensate for dropping *Empedocles on Etna* from his 1853 *Poems*, Arnold added a narrative poem dramatizing an episode from this medieval epic, in which a father unwittingly slays his long-lost son in combat.

ANSWER: **Shahnameh** [or **Shahnama**; or *The Book of Kings*; Arnold’s poem is “Sohrab and Rustam”]

<AG, Poetry>

4. Put those quick buzzer skills to work and try not to end up killed in a Wild West gunfight. For 10 points each:

[10] Perhaps the best known shootout featured the Earp brothers and Doc Holliday and took place at this location in Tombstone, Arizona.

ANSWER: Gunfight at the **O.K. Corral**

[10] This con-man, who got his nickname from a scam involving selling a household product with cash wrapped around them, cheated prospectors of their money during the Klondike Gold Rush. He died on Juneau Wharf during a gunfight to determine control of the mining town of Skagway.

ANSWER: Soapy **Smith**

[10] This deadly shootout took place after armed Mexicans occupied El Paso after two *vaqueros* were killed by cattle rustlers. Dallas Stoudenmire became famous after jumping into this messy and confusing shootout, killing George Campbell. Its name is a reference to its high death toll in a brief amount of time.

ANSWER: **Four Dead in Five Seconds** Gunfight

<BL, American History>

5. The Bartell mechanism is a form of this sort of movement in pentagonal bipyramidal compounds. For 10 points each:

[10] Name these sort of motions, one of which named for Berry occurs in trigonal bipyramidal compounds with identical ligands, where two axial ligands become equatorial, and two equatorial ligands become axial.

ANSWER: **pseudorotation**

[10] Molecules which undergo pseudorotation are an example of molecules of this sort which rapidly interconvert between different conformations. Another example of a molecule of this type is Bullvalene, which constantly undergoes Cope rearrangements.

ANSWER: **fluxional** molecules

[10] A singlet found in NMR spectra of a singly methylated derivative of this sandwich compound show it is fluxional. This orange, iron containing compound was first synthesized in a failed attempt to synthesize fulvalene.

ANSWER: **ferrocene**

<AW, Chemistry>

6. Answer the following about drumming in Native American music, for 10 points each.

[10] These Native American gatherings feature a medley of song and dance usually guided by a small percussion ensemble simply called the Drum.

ANSWER: **powwow**

[10] The Grass Dance of these Native American people pair constant drum beats with a male singer shouting in falsetto. In the 1890s, many of these people followed the Ghost Dance movement.

ANSWER: **Sioux** [or **Lakota**; or **Dakota**; or **Nakota**]

[10] Tribes such as the Iroquois and the Navajo use a drum that traditionally has this unusual feature. Tan Dun wrote a 1998 concerto for a large ensemble of solo instruments that possess this characteristic.

ANSWER: they are filled with **water** [or obvious equivalents; or really anything about **water**]

<EK, Other Art>

7. One of this historian's most outlandish claims was that the ruler he served could turn his head invisible at will, which he did while walking around his palace. For 10 points each:

[10] Name this historian whose more serious works include a narrative of wars against the Sassanids, Vandals, and Ostrogoths.

ANSWER: **Procopius** of Caesarea

[10] While he wasn't writing actual history, Procopius loved to bash Justinian and this wife of his, who he characterized as a slutty harlot. According to Procopius, she danced nude and let geese eat off her naked body during her time as a lowly actress.

ANSWER: **Theodora**

[10] Pencil and paper ready. Procopius claimed that Justinian had killed this absurdly high number of people in his African conquests. Give either Procopius's original expression, or the numerical equivalent.

ANSWER: **ten thousand times ten thousand times ten thousand** [or **one trillion**; accept **ten thousand cubed**]

<BL, European History>

8. These statistics predict that at a low enough temperature particles will "condense" into one energy state. For 10 points each:

[10] Name this distribution that predicts the behavior of particles with integer spins.

ANSWER: **Bose-Einstein** statistics [or **Bose-Einstein** distribution]

[10] The Bose-Einstein distribution takes a similar form to this law that describes the radiance of a black body.

ANSWER: **Planck's** law

[10] A form similar to the Planck law is applied to this equation, which predicts the thermal radiation from an object based on its temperature by substituting the lambda term with A plus B over T. This equation is commonly used to calibrate infrared thermometers.

ANSWER: **Sakuma-Hattori** equation

<AW, Physics>

9. The first map to depict this island situates it next to the Bampton Reefs, and an advisor to King Kamehameha claimed that he had a picnic on this island with Lola Montez. For 10 points each:

[10] Name this phantom island in New Caledonia that first appeared in maps in the 19th-century. When cartographers realized it didn't exist in 2012, it was removed from data sets including Google Earth.

ANSWER: **Sandy** Island

[10] In another instance of the "Age of Undiscovery," the fictitious Isle of Demons off the coast of this island started to appear on maps. This island is also home to the archaeological site L'Anse aux Meadows.

ANSWER: **Newfoundland**

[10] Other cartographical bullshit includes Spanish maps depicted the land that comprised this U.S. state as an island. This state, which takes its name from a 1510 novel, contains the Big Sur region.

ANSWER: **California**

<IJ, Geography/Current Events/Other>

10. This artist and Victor Vasarely came to public attention after the 1965 exhibit *The Responsive Eye*. For 10 points each:

[10] Name this artist who used many distorted and undistorted black dots in the painting *Fission*, which has been accused of causing motion sickness for making it seem that the canvas is "folding" at the center.

ANSWER: Bridget **Riley**

[10] Bridget Riley experimented with dots in her early work *Pink Landscape*, which was inspired by this technique mastered by Georges Seurat.

ANSWER: **pointillism**

[10] Riley's name is synonymous with this art movement, whose members like Ellsworth Kelly sought to demonstrate the power of artists controlling perspective. Colloquially, this movement is known for its illusions.

ANSWER: **op art** [or **optical art**]

<IJ, Painting/Sculpture>

11. This quantity is divided by the stimulus intensity and set equal to a constant in Weber's Law. For 10 points each:

[10] Name this quantity defined as the smallest quantity needed to distinguish between two sources of stimuli.

ANSWER: **just noticeable difference** [or **jnd** or **difference threshold** or **differential threshold**]

[10] The just noticeable difference is used to calculate thresholds in this process of responding to sensory input. The "depth" form of this process in infants was tested in the visual cliff experiment.

ANSWER: **perception** [depth **perception**]

[10] This psychologist conducted many experiments in color vision inspired by Gustav Fechner's work on psychophysics. His Cornell University psychology lab used the introspective method.

ANSWER: Edward **Titchener**

<IJ, Social Science>

12. Paintings such as *The Kelpy* and *The Stargazer* by a person of this kind act as chapter headings in Richard Flanagan's novel *Gould's Book of Fish*. For 10 points each:

[10] Identify this impoverished population, whose plight was fictionalized in novels such as Kate Grenville's *The Secret River* and Marcus Clarke's *For the Term of His Natural Life*.

ANSWER: Australian **convicts** [accept synonyms, such as **prisoners**; accept any numerical **Fleet**, like the First **Fleet**]

[10] Henry Phipps vanishes to escape his benefactor Jack Maggs, a convict who returns to England after serving his term, in Peter Carey's reimagining of this Charles Dickens novel, with Phipps and Maggs standing in for Pip and Abel Magwitch.

ANSWER: **Great Expectations**

[10] Convicts in the remote penal colony of Sydney Cove stage George Farquhar's *The Recruiting Officer*, in this Australian author's novel *The Playmaker*. Repeated wage theft spurs a half-Aboriginal outlaw to go on a murderous rampage in another historical novel by this author.

ANSWER: Thomas **Keneally**

<AG, Long Fiction>

13. This mathematician's Ph.D thesis includes a solution to the Einstein Field Equations that consists of a collection of rigid particles - that solution was later called the Van Stockum Dust. For 10 points each:
[10] Name this Hungarian mathematician whose namesake iterative algorithm repeatedly transforms a matrix into tridiagonal form to compute its eigenvalues. It is a more efficient version of the power method.

ANSWER: Cornelius **Lanczos**

[10] The Lanczos algorithm is most efficient when operating on this kind of matrix, which contains a relatively high number of zeroes.

ANSWER: **sparse** matrix

[10] One of the subroutines in most implementations of the Lanczos algorithm is this process, which computes an orthogonal set of vectors from a spanning set. Vectors in this recursive procedure are projected onto each other.

ANSWER: **Gram-Schmidt** process

<IJ, Math/Other>

14. Answer the following about the nature of the universe in Sumerian tradition, for 10 points.

[10] According to the *Enuma Elish*, these two contrasting substances are personified by Apsu and Tiamat, a husband-wife pair of primordial gods.

ANSWER: **fresh water** and **salt water** [or **sweet water** instead of “fresh water”; or **ocean water** instead of “salt water”; prompt on just waters, but do not accept if two answers are given and one of them isn't related to water]

[10] After the death of his friend Enkidu, this Sumerian king quests for immortality and learns how day and night are caused by the journey of his patron, the sun god Shamash.

ANSWER: **Gilgamesh** [or **Bilgames**]

[10] The gods of heaven and earth lend their name to this group of vaguely-defined deities whose role ranges from the seven judges of the underworld to the six hundred servants of Marduk in the *Enuma Elish*.

ANSWER: **Anunnaki** [or **Anunna**; or **Anunakene**; be lenient with vowels as long as the consonants are in the correct order]

<EK, Legends>

15. This incident was indirectly caused by the detonation of a bomb in a nearby airport by the Guanche Armed Forces, causing many aircraft to be redirected to the airport where this disaster happened. For 10 points each:

[10] Name this 1977 collision between two passenger jets on a runway that killed 583 people, the deadliest aviation incident in history.

ANSWER: **Tenerife** airport disaster [accept **collision** of **KLM** Flight **4805** and **Pan American** Flight **1736**, but do not reveal this answer unless it is explicitly given by the player]

[10] The Tenerife disaster involved a KLM plane and a plane from this airline. Flight 103 from this airline was destroyed in the Lockerbie bombing.

ANSWER: **Pan American** World Airways

[10] Pan Am never recovered from the Lockerbie bombing, declaring bankruptcy in January of this year and eventually shutting down in December of this year. The Soviet Union also dissolved in December of this year.

ANSWER: **1991**

<BL, Other History>

16. The narrator of this story covers his mouth with black lead and seals a carafe of water and a glass of milk before going to bed, yet still notices that the water and milk are gone when he awakes. For 10 points each:

[10] Name this horror story styled as the journal of a man possessed by a vampire that sailed up the Seine near his country home on a ship from Brazil.

ANSWER: “Le **Horla**” [or “The **Horla**”]

[10] “Le Horla” was written during the period of syphilitic madness near the end of the life of this French author, better known for stories such as “Ball of Fat” and “The Necklace.”

ANSWER: Guy de **Maupassant** [or Henri René Albert Guy de **Maupassant**]

[10] In a more openly terrifying Maupassant story, a judge recounts visiting the villa of the reclusive Englishman John Howell and discovering one of these severed body parts fastened by an enormous chain in his gun room. A year later, Howell is found murdered, and this body part is missing.

ANSWER: a **hand** [the story is called "The **Hand**" or "La **main**"]

<AG, Short Fiction/Miscellaneous>

17. One statement of this type reads: "For bodily exercise profiteth little: but godliness is profitable unto all things." For 10 points each:

[10] Name these five self-affirming scriptural statements, including ones that read: "if a man desire the office of a bishop, he desireth good work," "for if we be dead with him, we shall also live with him," and "that being justified by grace, we should be made heirs according to the hope of eternal life."

ANSWER: **faithful sayings** [or **trustworthy sayings**]

[10] The faithful sayings appear in the epistles 1 Timothy, 2 Timothy, and Titus, which are collectively given this designation because they are addressed to church leaders concerned about their flock.

ANSWER: **pastoral** epistles

[10] This man wrote the pastoral epistles as well as the Epistle to the Romans.

ANSWER: Saint **Paul** [or **Paul** the Apostle]

<AG, Religion>

18. This protein contains repeats of the octapeptide PHGGGWGQ, generating a metal-binding domain. For 10 points each:

[10] Name this protein that through an unknown mechanism transforms from its cellular isoform, denoted with a superscript C, to a neurodegeneration-causing isoform marked with a superscript SC.

ANSWER: **prion** protein [or **PrP**; or **PRNP**; or **CD230**]

[10] PrP has also been implicated in this disease, because it is a receptor for plaque-forming amyloid beta proteins. Short-term memory loss is an early sign of this disease, the predominant type of dementia.

ANSWER: **Alzheimer's** disease

[10] Normal PrP is involved in the transport of the ionic form of this metal, which is often coordinated to two histidine, one cysteine, and one axial ligand in proteins that have it as a prosthetic group.

ANSWER: **copper**

<AG, Biology>

19. Richard Rubinstein's book *After Auschwitz*, which argues that Abraham's covenant with man shattered after the Holocaust, is a work from this movement of theology. For 10 points each:

[10] Identify this movement led by Gabriel Vahanian which argues that modern society was characterized by the collapse of the belief in a transcendent order. It was introduced in a book subtitled "the Culture of our Post-Christian era."

ANSWER: **Death of God** theology

[10] Many of the Death of God thinkers, including Vahanian, had studied under this theologian, who introduced the "correlative method" in *Systematic Theology*, and wrote *Dynamics of Faith*.

ANSWER: Paul **Tillich**

[10] The phrase "Death of God" was taken from *The Gay Science* by this German philosopher, who argued that "God is Dead" and that "we have killed him."

ANSWER: Friedrich **Nietzsche**

<IJ, Thought>

20. An ultimatum sent by the British government in 1890 effectively nullified all claims made by this document. For 10 points each:

[10] Name this document that asserted Portuguese sovereignty over a strip of territory in Southern Africa stretching from the Atlantic Ocean to the Indian Ocean.

ANSWER: **Pink** Map [accept **Rose**-colored Map; accept *Mapa cor-de-rosa*]

[10] Britain occupied Zimbabwe and Zambia after the 1890 ultimatum in order to realize a railway line from the Cape of Good Hope to Cairo, a pet project of this South African diamond magnate and namesake of a rogue white state in modern-day Zimbabwe.

ANSWER: Cecil **Rhodes**

[10] Lobengula, a king of the Matabele, gave Rhodes exclusive mining rights to the land that would eventually become Rhodesia in this document, named for Rhodes' chief business associate.

ANSWER: **Rudd** Concession [accept Charles **Rudd**]
<BL, World History>