

2016 Terrapin XXIX: Lead Can't Penetrate Steele

Packet 8

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Tossups

1. **A story by this author follows a woman who teaches English to Indian children and is forced to listen to a fat man sing and play guitar every night. In that story by this author, the protagonist has a dream where she is fed flowers by a man with fleshless hands who accuses her of being a murderer and a cannibal. This author created a character who is pursued by the bounty hunter Homer T. Hatch and works on Royal Earle Thompson's (*) dairy farm. In a story by this author, a drama critic survives the Spanish Flu, which kills her love interest Adam Barclay. Freytag, a German man with a Jewish wife, embarks on a voyage to Spain on the *Vera* in an allegory of fascism by this author, who wrote several novellas about Miranda Gay. For 10 points, name this author of "Flowering Judas," "Noon Wine," "Pale Horse, Pale Rider," and *Ship of Fools*.**

ANSWER: Katherine Anne Porter

<ES American Literature>

2. **The completeness index is defined as the natural logarithm of the ratio of the "observed" and "dark" forms of this property. This property can be quantified using a parameter denoted alpha, called the "log series index." It has nothing to do with information theory, but one measure of this property is denoted *H* because its formula is the same as that of the *H*-function from thermodynamics; that measure is the Shannon index. This property increases with increasing (*) evenness and richness. The latitudinal gradient in this property describes how it is higher at the tropics than at the poles. Madagascar's isolation has led to it becoming a "hotspot" of this property. For 10 points, conservation biology's main goal is maintaining a high value of what property quantified by the number of species living in an area?**

ANSWER: biodiversity [or species diversity; accept "species richness" or "species evenness" until read]

<SR Biology>

3. **A woman of this ethnicity known as "Lieutenant Nun" wrote an autobiography describing how she disguised herself as a man to lead military campaigns against the Mapuche. The region home to this ethnic group is also home to a class of untouchables known as the *cagots* ("kah-GO's"). Pierre de Lancre had many of these people burnt at the stake during some 17th-century witch trials. Fishermen of this ethnicity were targeted in a 1615 massacre in Iceland and established (*) whaling outposts in Labrador. Many people of this ethnicity emigrated to America after the defeat of the Carlists. While returning from the siege of Zaragoza, Charlemagne's rearguard was ambushed by members of this ethnicity at Roncevaux Pass. For 10 points, ETA has violently campaigned for the independence of what ethnic group from Spain?**

ANSWER: Basques [or Vascos; or Euskaldunak; or Euskotarrak]

<JB European History>

4. A symphony of this number's slow introduction opens F E D C-sharp D on violas and bassoon sixths over held A octaves on the upbeat, then repeats a short exposition. That theme of that much-revised symphony of this number, played *attacca*, recurs after the oboe and cello Romanza theme and is inverted in the scherzo. A symphony of this number opens with a chain of falling thirds and rising sixths, uses a triangle in the scherzo, and ends in E minor with an 8-bar (*) passacaglia theme from Bach's 150th cantata. The A minor finale of an A major symphony of this number uses saltarello and tarantella dances. Shostakovich withdrew his symphony of this number in rehearsal due to a *Pravda* article. Schumann and Brahms wrote this many symphonies. For 10 points, give this number of Mendelssohn's Italian Symphony, the number of movements in most classical symphonies.
ANSWER: **four** [or Symphony No. **4**]

<OL Music>

5. In one book, the author rebuts the claim that this thing causes "torpor and stagnation" by describing his Saturday night outings to hear Grassini at the opera. In a book partly titled for this stuff, the narrator offers a lethal amount of it to a Malay sailor who appears at his mountain cottage, a visit that later causes him to imagine he is being chased by a crocodile. After using this product, the narrator witnesses a near collision with a young couple in a carriage in the (*) essay "The English Mail Coach." Another author referred to this substance as an "anodyne" he consumed before sleeping in a preface which blames the poem's incompleteness on a "Person from Porlock." Thomas de Quincey authored "Confessions" of an "Eater" of this substance. For 10 points, what drug allegedly caused the vision that inspired Coleridge's poem "Kubla Khan?"

ANSWER: **opium** [or **laudanum**]

<JB British Literature>

6. Pressure gradients due to neoclassical diffusion within a tokamak produce a "bootstrap" form of this quantity. The direction in which this quantity is oriented in cylindrical coordinates determines whether a pinch is a z-pinch or a theta-pinch. In special relativity, the four-vector version of this quantity equals the d'Alembertian of the four-potential. The divergence of this quantity per unit area is one of the terms in the continuity equation for (*) electromagnetism. An ideal device used to measure this quantity has zero internal resistance and is connected in series. The sum of this quantity flowing into a node equals the sum of this quantity flowing out of the node according to Kirchhoff's junction rule. For 10 points, name this quantity defined as the flow of electric charge per unit time.

ANSWER: **current** [accept **I** or **J**; accept **current density** until "per unit area" is read]

<BB Physics>

7. In this decade, thousands of rural maternity and child-care centers were created by the Sheppard-Towner Act. Belle Moskowitz managed a presidential campaign during this decade, in which Nellie Tayloe Ross succeeded her husband as Governor of Wyoming after a special election. During this decade, a media frenzy surrounded the disappearance at Vienna Beach and reappearance in the Mexican desert of the wildly-popular (*) evangelist Aimee Lee McPherson. Alice Paul originally proposed the Equal Rights Amendment during this decade. A subculture prevalent in this decade participated in "petting parties," wore bobbed hair, and drank alcohol in speak-easies. For 10 points, the Flapper culture flourished during what "Roaring" decade?

ANSWER: **1920s**

<JB American History>

8. These objects were placed in two piles of six with two cups of frankincense on a table called the *shulchan* next to the menorah. A key-shaped type of these objects called *schlissel* may be used on the first Shabbat after Pesach, while a round one may be used on Rosh Hashanah. A type of these objects has a “guarded” variety called *shmurah*. On Shabbat, after lighting candles and blessing wine, these objects are blessed by reciting (*) HaMotzi. The false accusation that Jews sacrifice Christian children to make these objects is known as the “blood libel.” After one of these objects is broken, the *afikoman* is hidden before being eaten at the end of the Seder. A form of this food commemorates the haste in which Jews left Egypt during the Exodus and is eaten during Passover. For 10 points, name this food whose varieties include challah and matzah.

ANSWER: pieces of bread [accept challah or matzah until they are read; accept show bread; accept lechem]
<WC Religion>

9. This author’s metaphor of a runner “who gains the victory, not one who loses” is cited in “Tradition and the Individual Talent.” A book by this author inspired lines such as “Highbury bore me. Richmond and Kew Undid me” and “I have heard the key / Turn in the door once and turn once only.” The dedication of “The Waste Land” quotes this author’s description of Arnaut Daniel as the “better smith.” A stanza by this author ending “I answer without fear of being shamed” provides the (*) epigraph of “The Lovesong of J. Alfred Prufrock.” “The Waste Land” takes the line “I had not thought death had undone so many” from Canto III of a poem by him, which also contains the words “Abandon all hope, ye who enter here.” For 10 points, T. S. Eliot’s “Ash Wednesday” and “The Waste Land” are often analogized to what Italian poet’s *Purgatorio* and *Inferno*?

ANSWER: Dante Alighieri [or Durante degli Alighieri]
<JB Other Literature>

10. The observed variations in this phenomenon undergo exponential damping at high values of script *L* due to diffusion. The fluctuations in this phenomenon have intrinsic, Doppler, and ISW components. The differential cross-section for scattering interactions involving this phenomenon equals 3 over 16 pi times one plus cosine squared theta times the Thomson cross-section. The power spectrum of this phenomenon plots power versus multipole moment. The (*) B-modes of its polarization were observed by BICEP2 to give evidence of gravitational waves. This phenomenon, which has its origins in the epoch of recombination, has a blackbody spectrum with a temperature around 2.7 kelvins. For 10 points, name this nearly isotropic thermal radiation that fills the universe and is used as evidence for Big Bang cosmology.

ANSWER: CMBR [or the cosmic microwave background radiation; accept CMBR anisotropy or cosmic microwave background radiation anisotropy]
<BB Other Science (Astronomy)>

11. On the tenth anniversary of this event, some of its leaders circulated the “Thanks, Now Leave!” petition to protest the Opposition Agreement. This event was followed by a dispute known as the “hyphen war.” During this event, the police used water-cannons to disperse demonstrators carrying candles, prompting the formation of the Public Against Violence. This event began with a meeting in the Magic Lantern theater that formed the (*) Civic Forum, many of whose members had earlier signed Charter 77. This event was followed by a similarly-named 1993 “divorce” that created a new country led by Vladimír Mečiar (“MECH-yar”). This event brought Václav (“VAHT-slav”) Havel to power. For 10 points, name this non-violent 1989 revolution that ended Communist rule of Czechoslovakia and is named for a soft fabric.

ANSWER: Velvet Revolution [or Gentle Revolution; prompt on overthrow of Communism in Czechoslovakia or similar answers until “Czechoslovakia” is read; do not accept or prompt on “Velvet Divorce,” “dissolution of Czechoslovakia,” “creation of Slovakia,” or similar answers]
<JB European History>

12. Reinhart Koselleck used the anachronisms of a painting partly titled for this man, and Schlegel's reaction to that painting, to argue for the occurrence of a "temporalization of history." A family dressed like Venetian noblewomen kneel before this person in a Paolo Veronese painting. A bare tree is the only background detail of a work in which a horrified man extends his arm to this person as he is born away from him. Words supplied by Johannes Adventius appear on a (*) tablet suspended in the sky in a painting centered on this person. This man appears helmetless in a namesake mosaic in the House of the Faun in Pompeii. The moon and the sun appear in the sky over a sprawling 1529 world landscape depicting a battle won by this person. For 10 points, Albrecht Altdorfer's *Battle of Issus* depicts a victory of what ancient conqueror?

ANSWER: Alexander the Great [or Alexander III of Macedon]

<JB Painting>

13. Maurice Bloch described how the "rebounding" form of this phenomenon characterizes the interaction between "the transcendental" and "the vital" in rituals. Pierre Clastres argued that South American tribes use this phenomenon to oppose state-formation in a book on the "Archaeology" of it. A film shot by Tim Asch depicts men engaging in this behavior in the town of Mishimishimabowei-teri. A researcher was accused of encouraging this phenomenon through goods traded for genealogical information in (*) Patrick Tierney's *Darkness in El Dorado*. Napoleon Chagnon controversially claimed that the Yanomami tribe was constantly engaged in this behavior. For 10 points, Max Weber claimed that the state had a monopoly on what type of behavior, defined as the "intentional use of physical force?"

ANSWER: violence [or force until it is read; accept aggression, fierceness, warfare, fighting, or other equivalents]

<JB Social Science>

14. The theta point of a polymer solution can be calculated by expressing this quantity via a virial expansion and setting the second virial coefficient to zero. A reflection coefficient is multiplied by the difference between the interstitial and capillary forms of this quantity in the Starling equation. Changes in this property can be measured using a U-shaped tube whose sides are separated by (*) dialysis tubing. Placing cells in a hypotonic solution will cause them to lyse due to an imbalance in this property. This quantity is equal to molarity times the ideal gas constant times temperature times the van 't Hoff factor. For 10 points, name this colligative property symbolized pi, the force per unit area across a semipermeable membrane that causes water to flow.

ANSWER: osmotic pressure [accept oncotic pressure; prompt on pressure]

<SR Chemistry>

15. Donald Barthelme's parody of a novel by this author includes a paragraph composed of the repeated word "butter," in reference to a scene in which the maid Nanon secretly uses butter to make cakes for breakfast. In a novel by this author, the protagonist watches through a keyhole as a man twists a silver plate into ingots. A woman in that novel by him drugs a man who called her a "Venus of the graveyard" in order to expose the brand on his back. One of this author's title characters gives her stash of gold coins to her cousin (*) Charles so that he can travel to the Indies, thus enraging her miserly father. The criminal Vautrin appears in a novel by this author, which concludes with Rastignac declaring war on Paris after the dismal funeral of the title pasta-maker. For 10 points, *Eugénie Grandet* and *Père Goriot* are entries in what French author's cycle *The Human Comedy*?

ANSWER: Honoré de Balzac

<JB European Literature>

16. During this conflict's opening engagement, 'Ali Effendi shot a man in the enemy leader's hut, before being ambushed by that leader's forces on Aba Island. During this non-North American conflict, the Marquess of Lansdowne recruited Canadian voyageurs to help an expedition navigate a certain river. That expedition's commander, who had first been impressed by voyageurs during the Red River Rebellion, was (*) Garnet Wolseley. The Fashoda Incident took place at the end of this conflict, after the defeat of the Khalifa 'Abdallahi ibn Muhammad by the future Lord Kitchener at the Battle of Omdurman. This conflict saw the death of Charles "Chinese" Gordon at the fall of Khartoum. For 10 points, name this conflict begun by a self-proclaimed redeemer of Islam in Sudan.

ANSWER: Mahdist War [or Mahdist Revolt or anything else that mentions the Mahdi; anti-prompt on Nile Expedition or Sudan Campaign]

<WC World History>

17. A sculpture whose title includes this adjective is paired with a sculpture depicting a man holding his dead wife and turning his face as he stabs his own chest. A sculpture titled for this adjective depicts a rigidly-posed warrior with an archaic smile and was found on the west pediment of the Temple of Aphaia. A sculpture partly named for this adjective was commissioned by Attalus II of (*) Pergamon to celebrate his victory over an Anatolian tribe and depicts a curved trumpet next to its subject, who wears a *torque* neck ring. The *Rebellious Slave*, *Moses*, and a sculpture of a slave described by this adjective were created by Michelangelo for Pope Julius II's tomb. A marble sculpture depicts a seated naked man with a mustache leaning on his leg as he experiences this process. For 10 points, a Hellenistic sculpture depicts a mortally wounded Gaul undergoing what process?

ANSWER: dying [or Dying Gaul/Galatian/Gladiator; or Dying Warrior; or Dying Slave; accept death]

<JB Other Arts (Visual)>

18. Bas van Fraassen's version of anti-realism about this domain is called "constructive empiricism." Another model of this domain involves a negative heuristic that forbids changing the "hard core" and a positive heuristic that revises the "protective belt." The impossibility of dealing with an idea in this domain in isolation leads to underdetermination in a problem first put forth by Pierre Duhem. Epistemological anarchism, the rejection of (*) rules for this activity, was put forth by Paul Feyerabend in opposition to Imre Lakatos. The issue of distinguishing this domain from other activities makes up the "demarcation problem," which Karl Popper addressed with the concept of falsifiability. Thomas Kuhn claimed that this domain experiences paradigm shifts during "revolutions." For 10 points, making a hypothesis is a step of the "method" of what activity?

ANSWER: science [or scientific research; or the scientific method; prompt on research or method or similar]

<JB Philosophy>

19. A meek, humble god covered in sores turned into a powerful god of this domain after sacrificing himself. One aspect of the "iguana house" deity Itzamna is a macaw-headed god of this domain; that "God G" is Kinich Ahau. Gods of this domain turned humans into monkeys and released tons of ocelots that devoured the human race. A god of this domain is still worshipped by his namesake Raymi festival and gave his son a (*) golden staff with which to find the site for his capital, where that god was worshipped by the mamakuna in the Coricancha temple. Four gods held this post before the current one in Aztec myth, and the Inca god of this role was the son of Viracocha. For 10 points, name this domain of Inti and the Egyptian god Ra.

ANSWER: the Sun [or sun gods; or solar deities]

<AP Mythology>

20. A member of this organization designed a “sunflower clock,” notated birdsong and described a “cat organ” in *Musurgia Universalis*, and explained hieroglyphs in *The Egyptian Oedipus*. As a paleontologist, a member of this organization excavated the Peking Man and the Piltdown Man; that man theorized that the *noosphere*, or sphere of human thought, was evolving to the Omega Point. Athanasius Kircher and Pierre Teilhard de Chardin (“tay-YARD shar-DANN”) belonged to this organization, which was cofounded by (*) Peter Faber. This organization’s “lax morality” and use of casuistry was attacked in the Jansenist *Provincial Letters* by Pascal. At the Battle of Pamplona, the founder of this organization took a cannonball to the leg, after which he meditated in a cave while writing *The Spiritual Exercises*. For 10 points, name this Catholic order founded by Ignatius of Loyola.

ANSWER: the Jesuits [or Society of Jesus; or Societas Iesu; prompt on the Catholic church until “Catholic” is read]

<JB Other (Academic)>

Bonuses

1. D'Alembert's principle can be derived from the principle of the "virtual" form of this quantity. For 10 points each:

[10] Name this quantity, which in thermodynamics is typically calculated as the integral of pressure with respect to volume.

ANSWER: **work** [accept **W**]

[10] The principle of virtual work states that, for a system with this property, the sum of the virtual works done by all external forces acting on the virtual displacements equals zero.

ANSWER: **static** equilibrium

[10] For a system in static equilibrium, this law states that the sum of the forces and the sum of the torques on the system equals zero. This law states that force equals mass times acceleration.

ANSWER: **Newton's second** law of motion

<SR Physics>

2. This document claims, "One of the expedients of party to acquire influence, within particular districts, is to misrepresent the opinions and aims of other districts." For 10 points each:

[10] Name this pamphlet written "To the People of the United States of America" in which its author declares his intentions to retire, but warns of the hunger of factions for power over the populace.

ANSWER: George **Washington**'s **farewell** address [accept equivalents]

[10] In his farewell address, Washington advised America to hold this policy with regards to "foreign entanglements." He had earlier supported this position in a 1794 proclamation.

ANSWER: **neutrality**

[10] Washington's Proclamation of Neutrality triggered a debate among Federalists and Jeffersonians, each of whom published their views under a pseudonym. Name either pseudonym.

ANSWER: **Pacificus** OR **Helvidius**

<AP American History>

3. A critic with this surname discussed the limited subject material available to female artists in "Modernity and the Spaces of Femininity." For 10 points each:

[10] Give this surname of feminist art historian Griselda. An Allan Kaprow essay about the legacy of an artist with this surname introduced the term "happenings."

ANSWER: **Pollock**

[10] "Modernity and the Spaces of Femininity" questions whether this artist, the sister-in-law and colleague of Edouard Manet, could have even gone to the Folies-Bergère to paint, and discusses the domestic space depicted in her *Two Women Reading*.

ANSWER: Berthe **Morisot**

[10] The two female artists discussed in the essay, Berthe Morisot and Mary Cassatt, were both affiliated with this art movement that took its name from Claude Monet's painting of a sunrise.

ANSWER: **impressionism**

<JB Painting>

4. The protagonist of this novel imagines his discovery of the word “Kuboa” and writes “1848” on every corner of his notebook in the hope that literary inspiration will come to him. For 10 points each:

[10] Name this novel whose narrator repeatedly brings his clothing to pawnbrokers, throws up food that he manages to buy, and encounters a woman whom he calls “Ylajali” (“ee-la-YAH-lee”).

ANSWER: Hunger [or Sult; accept word forms]

[10] *Hunger* was the breakthrough novel for this Norwegian winner of the 1920 Literature Nobel and author of *Mysteries*, in which the strange yellow-suit-wearing Johan Nagel intrigues a small town before his suicide.

ANSWER: Knut Hamsun

[10] In *Mysteries*, Nagel’s case for one of these instruments is revealed to contain dirty laundry. In Kafka’s “The Metamorphosis,” Gregor Samsa dreams of sending his sister Grete to music school to study this string instrument.

ANSWER: violins

<AP European Literature>

5. Kubera is sometimes said to be the king of these beings, each of which is usually a guardian of a natural feature. For 10 points each:

[10] Name these spirits, one of which forces Yudhishtira (“yoo-DISH-tih-ruh”) to answer its questions to restore the lives of his brothers after they die from drinking the water of its lake.

ANSWER: yakshas (“YUCK-shuh”) [or yakshini; accept yakshaprasna; do not accept “gandharva”]

[10] After all its questions are correctly answered, the *yaksha* reveals itself to be Yudhishtira’s father, Yama, who is the god of this place. This place, called *naraka* (“NUH-ruh-kuh”), was the destination of sinners.

ANSWER: hell [or the underworld; prompt on purgatory]

[10] The Pāṇḍavas were parched because they were chasing one of these animals that had stolen ritual materials. In the *Rāmāyana*, Rāma is lured away from Sītā by a demon that takes the form of a golden one of these animals.

ANSWER: deer [or stags; or harina or harini]

<AP Mythology>

6. In the Soviet Union, many of these people, known as *besprizorniki*, were sent to the Dzerzhinsky Labor Commune. For 10 points each:

[10] Name this type of person. In Romania, these individuals were called *deceței* (“deh-KRET-say”) and were sent to hellish institutions such as Cighid (“CHEE-geed”).

ANSWER: orphans [or homeless children; or abandoned children; or equivalents; prompt on partial answers, such as the homeless or children]

[10] Many of the Romanian orphans were born after this wife of Nicolae Ceaușescu (“chow-SHESS-koo”) used her National Women’s Council to encourage women to become “heroine mothers” by having ten children.

ANSWER: Elena Ceaușescu [or Lenuța Petrescu]

[10] Orphans presumably missed out on much of the fun of Eastern bloc childhood, such as the 1950s campaign against beetles that were allegedly being dropped by American planes to target this crop. An 1840s blight of this crop resulted in a famine in Ireland.

ANSWER: potatoes

<JB European History>

7. Simulink is integrated with this programming language, and can be used for multidomain simulation and model-based design. For 10 points each:

[10] Name this programming language that is widely used for numerical computation. The first part of its name comes from the fact that it is useful for manipulating matrices.

ANSWER: **MATLAB**

[10] MATLAB's symrcm ("sim-RCM") function uses the reverse Cuthill–McKee algorithm to permute this kind of matrix into a band matrix. This type of matrix may only take space proportional to the number of nonzero elements.

ANSWER: **sparse** matrix

[10] MATLAB optimizes the speed of this task that converts a function from the time domain to the frequency domain. Rader's algorithm and the Cooley–Tukey algorithm are commonly used to accomplish this task.

ANSWER: **fast Fourier transform** [or **FFT**; prompt on Fourier transform or discrete Fourier transform or DFT]

<SR Other Science (Computer Science)>

8. In "A High-Toned Old Christian Woman," the speaker imagines both religious conscience and "bawdiness, unpurged by epitaph," being converted into branches of this tree. For 10 points each:

[10] Identify this sort of tree. "A gold-feathered bird... sings without human meaning" in one of these trees "at the end of the mind" in the same author's poem "Of Mere Being."

ANSWER: **palm** trees

[10] This 1923 poetry collection features images of palm trees in poems such as "A High-Toned Old Christian Woman," "The Comedian as the Letter C," and "Sunday Morning."

ANSWER: **Harmonium**

[10] *Harmonium* is a poetry collection by this American poet, whose time in Florida partly inspired poems such as "The Idea of Order in Key West" and "The Emperor of Ice Cream."

ANSWER: Wallace **Stevens**

<JB American Literature>

9. Answer the following about the usage of bicycles in war, for 10 points each.

[10] During the 1942 battle for this city, Japanese troops used bicycles to outpace Arthur Percival's forces. Winston Churchill called the capture of this "Gibraltar of the East" the "worst disaster" in British military history.

ANSWER: **Singapore**

[10] Daniel Theron led these people's bicycle infantry, the TVK, in guerrilla assaults and at the Battle of Spion Kop. These Afrikaans-speaking Dutch settlers of South Africa fought the British in an 1899 to 1902 war.

ANSWER: **Boers** [prompt on South Africans or Afrikaners]

[10] This commander transported heavy supplies on bicycles at the Battle of Điện Biên Phủ, where his forces overran the Beatrice, Gabrielle, and Anne-Marie strong points held by forces of Christian de Castries.

ANSWER: Võ Nguyên **Giáp** ("vawn win zap") [prompt on Võ]

<AP World History>

10. Answer the following about supermarkets in modern art, for 10 points each.

[10] Duane Hanson used this method to make *Supermarket Shopper*, a sculpture of an overweight woman with hair curlers and a shopping cart. Auguste Rodin was accused of using this method to create *The Age of Bronze*.

ANSWER: **lifecasting** [or equivalents of **casting** from a live **model**; prompt on using a **model**; prompt on **casting**]

[10] This artist's *99 Cent II Diptychon* depicts rows of colorful products in a supermarket. This artist's best-known work sold for 4.3 million dollars in 2011 and depicts a perfectly horizontal river between green grass and a gray sky.

ANSWER: Andreas **Gursky**

[10] Robert Kushner created a work in this form in which he covered himself in supermarket produce entitled *Costumes Constructed and Eaten*. In this genre of art, the artist carries out live actions in front of an audience.

ANSWER: **performance** art

<JB Other Arts (Visual)>

11. This process can use either a pre-bake cell or a Söderberg cell, the latter of which requires coke and pitch to be added continuously. For 10 points each:

[10] Name this process, the primary means of smelting aluminum in industry. Lithium fluoride is sometimes added to improve the efficiency of this process.

ANSWER: **Hall**–Héroult process

[10] In the Hall process, aluminum oxide is dissolved in a bath of this fluoride-containing mineral. It lowers the melting point of the aluminum oxide to make the process easier to perform.

ANSWER: **cryolite**

[10] The Hall process relies on this technique, in which an electric current is used to drive a nonspontaneous reaction. It is often used to separate water into hydrogen gas and oxygen.

ANSWER: **electrolysis**

<SR Chemistry>

12. Vivian Mercer described this play as one in which “Nothing happens, twice.” For 10 points each:

[10] Name this play that opens with a character saying “Nothing to be done” after he fails to take off his boot.

ANSWER: ***Waiting for Godot*** [or ***En attendant Godot***]

[10] This Irish author of *Stories and Texts for Nothing* also wrote about Vladimir and Estragon doing nothing in *Waiting for Godot*.

ANSWER: Samuel **Beckett**

[10] This other Samuel Beckett character opines that “nothing is more real than nothing.” In the novel titled for him, this character spends his time immobile in a hospital bed and drops his pencil while writing a story about a boy named Sapocat.

ANSWER: **Malone**

<JB British Literature>

13. This term names a three-wheeled car that its designer intended to be a “zoomobile” able to “hop off the road at will” and fly into a new place in traffic. For 10 points each:

[10] Identify this portmanteau term that names a “deployment unit” inspired by steel grain bins used in Midwest agriculture. Its coiner also designed a Wichita house that used the “dome effect” to regulate its temperature and a “fogger” in place of a shower.

ANSWER: dymaxion [accept Dymaxion Car or Dymaxion Deployment Unit or Dymaxion House] (Dymaxion is a portmanteau of *dynamic*, *maximum*, and *tension*.)

[10] This thinker recorded his activities every 15 minutes for 63 years in his scrapbook *Dymaxion Chronofile*. He developed synergetics and designed the Montreal Biosphère.

ANSWER: R. Buckminster Fuller [prompt on Bucky]

[10] Fuller also used “Dymaxion” to name one of these things that used an unfolded icosahedron to remove the concept of direction. He claimed that it distorts the global image less than their Mercator and Robinson types.

ANSWER: map projections [accept either underlined portion]

<AP Other (Academic)>

14. An organization in this country used a symbol of a gray she-wolf called Asena, and clashed with opposition on a 1963 “Bloody Christmas.” For 10 points each:

[10] Name this country where the Rauf Denktaş-led TMT fought against EOKA (“ay-OH-ka”), whose leader Nikos Sampson deposed Archbishop Makarios II.

ANSWER: Cyprus

[10] This country is the only one to recognize Northern Cyprus as a sovereign state, probably because most of the populace of Northern Cyprus is ethnically from this nation that has had a long-standing feud with Greece.

ANSWER: Turkey [or Türkiye]

[10] The TMT advocated a policy named for the Turkish word for “division,” and the EOKA advocated a policy named for the Greek word for “union.” Name either.

ANSWER: taksim OR enosis

<AP European History>

15. You are a Zoroastrian living in 10th-century Persia. Answer the following about your life under Islamic rule, for 10 points each.

[10] You continue to worship this good deity. This deity also created the evil destructive spirit Angra Mainyu, whom you believe will be defeated by this deity at the end of time.

ANSWER: Ahura Mazda [or Ormazd]

[10] To escape Islamic persecution, you moved to this city in central Persia. One of the last Zoroastrian strongholds, it now contains the only Atash Behram temple, containing the holiest grade of fire, located inside modern-day Iran.

ANSWER: Yazd

[10] The other eight Atash Behram temples are in this modern-day country. The *Qissa-i Sanjan* details the migration of many of your coreligionists to this country, where their descendants are known as the Parsis.

ANSWER: India [or Bhārat]

<WC Religion>

16. Joel Haack explained how the rhythmic pattern in this composition forms a cyclic group, since one of the two performers phase shifts it by an eighth note every 12 bars. For 10 points each:

[10] Name this canon for two performers of the title action who repeat an unaccented African bell pattern 156 times. That asymmetric rhythm is made of groups of 3, 2, 1, and 2 eighth notes separated by eighth rests.

ANSWER: Clapping Music

[10] A similar rhythm to that from *Clapping Music* appears in this minimalist composer's *Desert Music*, *New York Counterpoint*, and *Music for 18 Musicians*. He used the technique of phasing in *It's Gonna Rain* and *Piano Phase*.

ANSWER: Steve Reich

[10] Steve Reich's *Different Trains*, for tape and this chamber ensemble, was premiered by one of these ensembles named Kronos that specializes in contemporary music. This ensemble contains two violins, a viola, and a cello.

ANSWER: string quartet [prompt on quartet]

<OL Music>

17. According to Legalism, a person in this role should use *fǎ*, or law, *shù*, or method, and *shì*, or power. For 10 points each:

[10] Name this role that is subject to the Mandate of Heaven. The five relationships of Confucianism are father to son, husband to wife, brother to brother, friend to friend, and the person with this role to their subjects.

ANSWER: ruler [or equivalents such as emperor, king, prince, etc.; or word forms such as ruling or governing]

[10] In a dialogue with King Xuān of Qí ("shwen of chee"), this thinker expressed his theory that a ruler should be deposed if he proves himself unworthy of power. This man is the second most important Confucian thinker after Confucius.

ANSWER: Mencius [or Mèngzǐ; or Master Mèng]

[10] Mencius's political philosophy is based on his idea that humans naturally have this trait, an idea disputed by the later Confucian thinker Xúnzǐ ("SHWIN-tzuh"). Mencius claimed that this trait is rooted in four beginnings, or "sprouts."

ANSWER: innate goodness [or equivalents such as virtue, morality, etc.; or rén; or jen; or human heartedness; or humaneness]

<JB Philosophy>

18. The two main characters of this novel fundraise for their newspaper *Lee Harvey Oswald* by selling marijuana, or "Acapulco Gold," to Mexican students. For 10 points each:

[10] Name this semi-autobiographical novel by Roberto Bolaño in which the poets Arturo Belano and Ulises Lima search for Cesárea Tinajero ("tee-na-HAY-roh"), the original visceral realist.

ANSWER: *The Savage Detectives* [or *Los Detectives Salvajes*]

[10] After accidentally receiving a reefer instead of a cigarette, this unnamed title character of Ralph Ellison's most famous novel smokes it while listening to a Louis Armstrong track.

ANSWER: the invisible man [or *Invisible Man*]

[10] It's unclear whether the sensation the narrator feels while drawing the title building of this author's story "Cathedral" is due to the weed he and his wife's blind friend Robert smoked or the defeat of his own mental "blindness."

ANSWER: Raymond Carver

<AP Other Literature>

19. ATOH1 codes for a regulatory protein that drives the differentiation of these cells that are held on the tectorial membrane of the organ of Corti. For 10 points each:

[10] Name these cells that compose the sensory epithelium of hearing.

ANSWER: auditory hair cells

[10] These hair cell organelles act as mechanosensors and respond to the motion of fluid in the inner ear. They are named for their resemblance to an organelle that paramecia use for motility.

ANSWER: stereocilia [prompt on cilia]

[10] Hair cells are found in this structure, whose three chambers are a namesake duct, the scala vestibuli, and the scala tympani. This snail-shaped structure converts sound waves to electrical impulses in the inner ear.

ANSWER: cochlea

<SY Biology>

20. George Gmelch argued that Bronislaw Malinowski's description of this practice also applies to American sports in his paper on its "Baseball" type. For 10 points each:

[10] Identify this practice that Malinowski claimed the Trobriand islanders used for open sea fishing, but not lagoon fishing. Malinowski also discussed the Trobrianders' use of this practice for cultivating gardens on coral atolls.

ANSWER: magic

[10] A Malinowski quote about magic closes Horace Miner's essay about "Body Ritual among" this fictional tribe, whose use of a charm-box in a shrine parallels the use of medicine cabinets in American bathrooms.

ANSWER: the Nacirema

[10] Stanley Tambiah, an anthropologist from this country, analogized Malinowski's account of the role of magic in the Trobrianders' practical life to Newton and Kepler's interest in the occult. Tambiah also wrote a book about the "Ethnic Fratricide" of this island country's conflict between Sinhalese and Tamils.

ANSWER: Sri Lanka [or Ceylon]

<JB Social Science>