

2022 ARCADIA □

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Packet 9: oh god, does this mean i have to make the “Gingerbread Man” a hard / there are only 4 hits on aseems / nooo

Tossups

1. **This idea is suggested to give way to the “bastard form” of New Journalism in a Tom Wolfe essay titled for this idea. Four scripts, such as “Improbable Communities,” are discussed in Lawrence Buell’s book *The Dream of [this idea]*. Frank Norris quipped that this idea is “mythical like the hippogriff,” alluding to its origination as a yet-to-be-realized “tableau” in an 1868 essay by John De Forest. Henry James coined this idea’s common (*) three-letter acronym. A Communist plot erases the history of baseball’s Patriot League in a Philip Roth book titled for this idea. *Beloved*, *The Bell Jar*, and Jonathan Franzen’s *Freedom* have variously been called the “Black,” “feminist,” and “post-9/11” works of this sort. *Huck Finn* and *Moby Dick* are often cited as examples of, for 10 points, what works of fiction that capture the national spirit of the United States?**

ANSWER: the Great American Novel [accept “Why They Aren’t Writing the Great American Novel Anymore”; accept *The Dream of the Great American Novel*; prompt on novel; prompt on GAN]
<VD, American Literature>

2. **In Miccosukee Seminole folklore, the “little” form of this thing names a pair of hero twins. The Penobscot hero Snowy Owl and the night-witch’s daughter seek refuge with seven brothers named for this thing. Among the Lakota, individuals who see visions of beings named for this thing can become a sacred clown known as the *heyoka*. In Menominee lore, this thing names a mountain-dwelling creature who acts as the Sun’s messenger. Nanabozho creates a creature named for this thing to counter the (*) underwater panther and the horned serpent. That whale-eating creature is represented by an X-shaped motif on Algonquin totem poles and produces this phenomenon whenever it beats its wings. For 10 points, name this phenomenon that is summoned along with lightning by its namesake bird.**

ANSWER: thunder [accept Thunderbird; accept thunderstorms; reject “thunderbolts” or “lightning”]
<JF, Beliefs>

3. **For the Concertgebouw’s (“con-SAIRT-khuh-bao’s”) 50th anniversary, this composer wrote a piece based on the descending theme “long D, C, A, G, up to long C,” which is subsequently repeated a fifth lower. An ascending chromatic scale and a rapid, descending, solo piano scale open a piece by this composer due to a superstition about truth in storytelling. Because its source material references “freedom for poor prisoners,” the Nazis banned this composer’s *Peacock Variations*. In one suite, this composer used a shepherd’s trumpet melody in the main theme of an interlude about a (*) “Viennese musical clock.” John Curwen developed a visual system that is used to teach “movable *do* (“doh”)” as part of a music education method pioneered by this composer. This composer used wax cylinder recordings to collect folk music in his home country along with Béla Bartók. For 10 points, name this Hungarian composer of *Háry János* (“YAH-nohsh”).**

ANSWER: Zoltán Kodály (“KOH-dye”)
<JE, Auditory Arts>

4. **This substance undesirably mixes with the less-dense LNAPLs and more-dense DNAPLs. Specific capacity data is often used to estimate a parameter for this substance symbolized *T*. This substance’s equipotential**

lines are mapped in curvilinear “nets,” and are assumed to be vertical in the Dupuit-Forchheimer model. This substance’s transport equations combine mass conservation with a constitutive equation that sets flux equal to conductivity times the gradient of the hydraulic (*) head. This substance’s flow in the vadose zone is modeled by the Richards equation, which modifies Darcy’s Law. Reservoirs for this substance that are confined under an impermeable layer are called “artesian” and require no pumping. The Ogallala is a reservoir for, for 10 points, what substance that is accessed from aquifers using wells?

ANSWER: groundwater [prompt on freshwater; accept subsurface water or descriptions of water that is underground; reject “surface water”] (*T is transmissivity. The third clue describes flow nets.*)

<KJ, Other Science: Earth Sciences>

5. In this country, various noble scenes ranging from sacrificial self-decapitation to warrior martyrdom are portrayed on its hero stones. Greco-Roman texts speak of the pirate-infested waters of this country’s *Limyrike* (“lim-MIH-rick-ee”) region, which contained the trade ports of Tyndis and Muziris. A Perumal king in this country granted socioeconomic rights to a religious minority now known as the “Southists” through a lost set of copper plates. The south of this country was ruled by the “Three Crowned Kings.” Three assemblies of scholars contributed to this country’s (*) Sangam Period, which saw the creation of the Five Great Epics. A thalassocratic empire in this country conquered Srivijaya. The Cheras and Pandyas were dynasties established in this country, where black pepper was traded along the Malabar coast. For 10 points, name this country where the Cholas were based in the modern state of Tamil Nadu.

ANSWER: India [or Bharat]

<KT, Other History: Ancient>

6. Two answers required. One thinker takes on a trilemma concerning the “orderly behavior” of one of these concepts as a reason to embrace her view that combines them. Margaret Cavendish identified one of these two concepts with motion. Anne Conway was a member of a school that understood reality as a hierarchy with one of these concepts at the top and the other at the bottom, alongside thinkers like Henry More. Baruch Spinoza identified these two concepts as (*) parallel attributes that were different ways of explaining the same reality. René Descartes argued that since these two concepts can be conceived as existing apart from each other, they must be distinct. For 10 points, name these two concepts, which name a type of dualism espoused by Descartes.

ANSWER: mind AND body [accept soul or intelligence or the mental in place of “mind”; accept matter or the physical or the material or extension in place of “body”; accept mind-body dualism]

<MB, Philosophy>

7. In one essay, an author from this country jokes how his “first name... has always been a sort of barometer of public mood” after describing why he changed his name from Kenneth. An essay from this country describes the Berlin Conference as a forerunner of a writers’ conference that excluded *another* country’s author Shabaan Robert. A writer from this country suggested using endings that consist of “rainbows or renaissances” in his essay “How to (*) Write About Africa.” An author from this country described the fictional nation of Aburiria in his novel *Wizard of the Crow*, which he wrote in a native language after decrying the imperialist “cultural bomb” of the English language in the book *Decolonising the Mind*. For 10 points, name this home country of Ngũgĩ wa Thiong’o, who wrote in Gikuyu.

ANSWER: Kenya [or Republic of Kenya or Jamhuri ya Kenya or Bururi wa Kenya] (“How to Write About Africa” is by Binyavanga Wainaina, who also wrote the essay in the first clue, “In Gikuyu, for Gikuyu, of Gikuyu.”)

<AS, World Literature>

8. An “ultrafast” version of this technique for fine needle aspiration samples improves on Romanowsky’s method. Sputum samples are heated and treated with acid alcohol in another version of this technique. Samples are steamed before a reagent named for malachite is applied in a version of this technique for endospores. It’s not mass spec, but one method of sample preparation before this process involves (*) paraffin

embedding and thin-sectioning with a microtome. Santiago Ramón y Cajal improved a procedure of this type that uses silver nitrate to produce his drawings of neurons. One of these procedures relies on thick peptidoglycan walls trapping crystal violet while thinner ones don't to visualize Gram positive and negative bacteria. For 10 points, name this process of treating specimens with dyes to enhance their visibility under a microscope.

ANSWER: staining [accept more specific answers like Papanicolaou staining or acid fast staining or Gram staining; accept immunostaining; prompt on immunohistochemistry or IHC by asking, "Which part of the IHC procedure?" reject "Pap smear" or "Pap test"]

<HK, Biology>

9. In one film, this director filmed eleven false takes to instill mounting hysteria for a scene in which a woman sobs against a boiler. This director's studio used his absence in Brazil to cut 40 minutes out of a film that ends with a Joseph Cotten-played character providing for the fallen heir George. Another film by this director begins with a tracking shot of a Mexican town as a ticking time bomb explodes, leading Hank Quinlan to investigate. This director of (*) *The Magnificent Ambersons* used a shrieking cockatoo to punctuate a butler's memory of the singer Susan Alexander in a film interspersed with newsreels that describe the protagonist's run for Governor of New York. For 10 points, name this director of *Touch of Evil*, who depicted a sled burning in a fireplace at the end of his film *Citizen Kane*.

ANSWER: Orson Welles [or George Orson Welles]

<HG, Other Arts: Film>

10. During a strike in this industry, the Daugherty Injunction cited an "outlaw resolution" to refuse arbitration with the "Big Four" unions such as BLET in 1922. Grover Cleveland first created the Interstate Commerce Commission to manage the Granger Laws, which regulated this industry. Milton Webster won union contracts for Black workers in this industry called "George's." Ten workers protesting "double-enders" were killed at Camden in 1877 during a (*) "Great" strike in this industry. The first Black-led labor union was in this industry and was founded by A. Philip Randolph. Labor Day was created in the wake of an 1894 strike in this industry that was led by Eugene V. Debs. For 10 points, the Pullman Strike occurred in what industry that employed sleeping car porters and conductors?

ANSWER: railroads [or railways; accept trains; accept locomotives]

<GE, American History>

11. An artist with this *first* name depicted a red comet on the back of a painting that features a lion based on Venetian emblems. A pathetic red dragon fights St. George in the bottom right of a lush forest scene by an artist with this first name. The Sun sets over a distant Nile River in a world landscape by an artist with this first name inspired by the Battle of Vienna. An artist with this first name led the Danube School and included a giant suspended (*) tablet explaining his painting *The Battle of Alexander at Issus*. An angel praying next to a polyhedron and a lion sleeping below a monk writing the Vulgate are two "master prints" by an artist with this first name. For 10 points, give this first name shared by the painter surnamed Altdorfer and the engraver Dürer.

ANSWER: Albrecht [accept Albrecht Altdorfer or Albrecht Dürer; accept Albert; accept Alberto] ([The first painting is Dürer's *St. Jerome in the Wilderness*.](#))

<HG, Visual Arts>

12. An essay in the "Fortnightly Notebooks" translated as "Our Youth" denounces this event's mystique for ruining intellectual politics. A group formed in response to this event held the dubious title of publishers of the first newspaper banned in the Catholic Index. A political cartoon depicted this event as a "family dinner" ending in a brawl. Bernard Lazare engaged in a pamphlet war, and then a duel, over this event with the editor of a newspaper that had emerged for breaking the (*) Panama Scandal. Charles Maurras ("mo-RAH") rose to prominence during this event after endorsing a forgery created by Colonel Henry ("awn-REE"). During this event,

a German spy named Ferdinand Esterhazy escaped conviction. For 10 points, name this 1894 affair that provoked Émile Zola's vitriolic letter "J'accuse...!"

ANSWER: **Dreyfus** Affair (The "Fortnightly Notebooks" and "Our Youth" were authored by Charles Péguy. The eponymous newspaper of the *Action Française* was banned by Pope Pius XI in 1927. Édouard Drumont edited the antisemitic *La Libre Parole*, which broke the Panama Scandal.)

<GP, European History>

13. *Note to moderator: read the answerline carefully.*

Two answers required. **Reacting one of these two functional groups with an alpha-silyl carbanion yields the other in a reaction named for Peterson. Kocienski developed a one-pot modification of a stereoselective reaction that treats one of these functional groups with a phenyl-sulfone to afford the other. A reaction that converts between these two functional groups involves treating one of them with a triphenyl-phosphonium (*) ylide ("ILL-id").** Acrolein is the simplest molecule with both of these functional groups. One of these functional groups can be cleaved into two of the other upon treatment with ozone and a dimethyl sulfide reducing agent, which can reverse the transformation of a Wittig reaction. For 10 points, ozonolysis converts what functional group with a carbon-carbon double-bond into what other functional group with a carbon-oxygen double bond?

ANSWER: **alkene** AND **carbonyl** [accept **olefin** in place of "alkene"; accept **ketone** or **aldehyde** in place of "carbonyl"; reject "alkyne" or "alkane"]

<ME, Chemistry>

14. **In a short story by this author, a self-described adulterer, murderer, blasphemer, and deceiver seeks out the mother-in-law of a drunken official for salvation. In that story by this author, a divorcee attempts to seduce the title "handsome hermit," but becomes an abbess after the hermit cuts off his own finger to repress his lust. A man created by this author dreams of the chief transforming first into a peasant, then the (*) Devil, before that man dies the next day. In that story by this author, a man who was promised all the Bashkir land that his spade could touch by sunset instead receives six feet for his grave. Gerasim cares for a man who dies after injuring himself while hanging curtains in a novella by this author.** For 10 points, name this author of "How Much Land Does a Man Need?" and *The Death of Ivan Ilyich*.

ANSWER: Leo **Tolstoy** [or Lev **Tolstoy**; or Count Leo Nikolayevich **Tolstoy**]

<GE, European Literature>

15. **The hidden nature of these objects derived from the Udumbara is used as a Buddhist literary metaphor for rare occurrences. The Seven-Line Prayer reveres a guru born from one of these objects who introduced tantra to Tibet. A Chinese Buddhist school named for these objects reveres a text that describes interpenetration as exemplified by Indra's net. A text named for these things teaches that there is in truth only (*) One Vehicle, as the divisions are applications of *upaya*, or skillful means. Mahakasyapa smiled, and thereby received Zen transmission, after the Buddha held up one of these objects during a namesake sermon. The Nichiren and Tendai schools follow a text named for one of these objects which emphasizes that everyone has the capability to obtain Buddhahood.** For 10 points, the Buddha is often depicted sitting atop what part of a plant rising from the water?

ANSWER: **flowers** [accept **lotuses** or **Padmasambhava**; accept **Flower** Garland School or **Huáyán** School; accept **Flower** sermon; prompt on **garlands**; prompt on **Avatamsaka**]

<AY, Beliefs>

16. **The speaker describes this country mingled "with the rude / Wasting of old time—with a billowy main—" and compares himself to "a sick eagle looking at the sky" in a poem titled for objects from this country. The speaker of a poem titled for this country cries, "For ever warm and still to be enjoy'd, / For ever panting, and for ever young," after calling for "More happy love! more happy, happy love!"** It's not the United Kingdom,

but a “deep-brow’d” writer from this country (*) ruled “one wide expanse” “as his demesne” (“dim-MANE”) in a poem in which the speaker feels “like some watcher of the skies.” A poem calls an object from this country a “foster-child of silence and slow time” and “unravish’d bride of quietness.” For 10 points, John Keats wrote an ode on an urn from what country?

ANSWER: Greece [accept “Ode on a Grecian Urn”] (The other poems are Keats’s “On Seeing the Elgin Marbles” and “On First Looking into Chapman’s Homer.”)

<CM, British Literature>

17. A thinker from this country, Romeo Horton, chaired the Committee of Nine responsible for the establishment of the African Development Bank. A “gradualist” bloc named after a city in this country opposed federalism espoused by the rival Casablanca bloc. Hilary Teague drafted a declaration of independence for this country and served as an advisor to Joseph (*) Jenkins Roberts. A leader of this country supposedly ordered the 1987 assassination of Burkina Faso president Thomas Sankara according to Prince Johnson, better known for torturing and executing Samuel Doe. During the first of two civil wars in this country, Africa’s first female head of state, Ellen Johnson Sirleaf, controversially supported warlord Charles Taylor. For 10 points, name this country founded by freed American slaves.

ANSWER: Liberia [or Republic of Liberia]

<GP, World History>

18. By Halāyudha’s account, Pingala used this construct to solve the *lagakriyā* for musical meter in Sanskrit prosody, and called its construction the *meru-prastāra*, or “steps of Meru.” This construct, which appears in Gottfried Leibniz’s *Dissertatio*, was used in one treatise to solve the problem of points. This construct was known in China by the 11th-century scholar Jiǎ Xiàn (“sh’yen”), and in 10th-century Persia by al-Karajī, whose work was referenced by (*) Omar Khayyām. The figurate numbers lie along this construct’s diagonals, and highlighting the odd entries in this construct produces the Sierpiński (“sir-PIN-ski”) gasket. The k -th entry in the n -th row of this construct is n -choose- k , and this construct’s rows sum to powers of two. The binomial coefficients are the entries of, for 10 points, what shape whose entries are the sum of the two above them, named for a French mathematician?

ANSWER: Pascal’s triangle [accept the arithmetic triangle or Yáng Huī’s triangle; accept meru prastara or Khayyām’s triangle until “Khayyām” is read]

<VD, Other Academic>

19. This variable is the independent x -variable of a 3ITT test, from which it is analyzed along with an associated recovery ratio. Unlike a related class of materials whose viscosity also increases in response to shear stress, a dilatant material’s viscosity does not depend on this variable. Those aforementioned rheopectic materials have a viscosity-response dependent on this variable that is similar but opposite in (*) thixotropic materials. The material derivative of the density, which is taken with respect to this variable, is constrained to be zero for incompressible flows. In the steady-state flow condition, a fluid’s properties do not change with respect to this variable. For 10 points, name this variable for which the change of different properties with respect to is measured by rate.

ANSWER: time

<JF, Physics>

20. A book titled for this process offers heresies in the early church as an example of challenges to the social order that require “universe-maintenance.” Alfred Schütz’s phenomenological approach influenced a theory of this process by two of his students, which discusses stages of externalization, objectivation, and internalization. The contingency of the “self-help” international system is argued for in the paper that introduced this viewpoint to international relations, “Anarchy is What States Make of It” by (*) Alexander

Wendt. This process produces social systems of knowledge according to a book by Berger and Luckmann that applies it to “reality.” Haslanger’s *Resisting Reality* counters the common misconception that social categories created via this process are unreal or non-objective. For 10 points, race and gender are often described as not biological, but rather defined via what process?

ANSWER: social **construction** [accept word forms like social **construct** or socially **constructed**; accept **constructivism**]

<VD, Social Science>

Bonuses

1. Francesca Caccini's only surviving opera uses flat keys to represent this evil character, who turns her lovers into plants as she tires of them. For 10 points each:

[10h] Name this sorceress forced to flee her island by Melissa in that opera. In a Handel opera titled for her, a character sings the aria "Verdi prati" after he dons a magic ring to see that this character's island is a barren desert.

ANSWER: Alcina

[10m] Alcina and Circe were inspirations for the sorceress Armide, who titles an opera by this composer. This inventor of the French Overture wrote incidental music for plays like *Le Bourgeois Gentilhomme*.

ANSWER: Jean-Baptiste Lully [or Giovanni Battista Lulli]

[10e] This first title character of a Purcell opera sings her famous "Lament" after rejecting her lover Aeneas, who was forced to abandon her when a sorceress threatened Carthage.

ANSWER: Dido [or Elissa; accept Dido and Aeneas]

<IZ, Other Arts: Auditory>

2. This character curses that his assassins "shall never rule [my land]. Only the swallows shall rule over it!" in a "Dirge of the Palm Race" that appears at the end of a poem about him. For 10 points each:

[10h] Name this character who kills his beloved Noliwa with a knitting needle and drinks her blood to become all-powerful under the influence of the doctor Isanusi in a Thomas Mofolo novel.

ANSWER: Shaka [or Shaka Zulu or Shaka kaSenzangakhona; accept Chaka or Emperor Shaka the Great: A Zulu Epic or uNodumehlezi kaMenzi: iEphiki yesiZulu] (The poem in the lead-in is Emperor Shaka as compiled and translated by Mazisi Kunene; the Thomas Mofolo novel is Chaka.)

[10m] Traditionally, the epic *Emperor Shaka* is orally recited by *imbongi*, or Zulu praise singers. In a similar tradition, these Mande storytellers are revered for singing the Epic of Sundiata, the foundational epic of Mali.

ANSWER: griots [accept jeliw]

[10e] *Description acceptable*. Daniel P. Kunene uses *Emperor Shaka* and the Epic of Sundiata to show that this action is a common feature of African epics. The protagonist does this action for 10 years to return to his wife Penelope in a Homeric epic whose title is now synonymous with this action.

ANSWER: journey [accept word forms; accept odyssey or the Odyssey or Odysseia; accept epic journey; accept answers like returning home or returning from exile or returning from war or returning from the Trojan War or returning to Ithaca; accept answers like going back home or coming back home or traveling home; accept voyage] (Daniel P. Kunene also produced the main translation of Chaka by Thomas Mofolo, clued in the first part.)

<AS, World Literature>

3. Two queens of these people, the sisters-in-law Brunhilda and Fredegund, carried out a lifelong feud that influenced the politics of Austrasia and Neustria. For 10 points each:

[10e] Name these Germanic people whose Merovingian and Carolingian dynasties ruled in the Early Middle Ages.

ANSWER: Franks

[10m] The friendship of a bishop of this city and Brunhilda led to a favorable depiction of her and a cruel portrayal of Fredegund in his *History of the Franks*. Abd al-Rahman was killed at a battle fought somewhere between this city and Poitiers.

ANSWER: Tours [accept Gregory of Tours; accept Battle of Tours]

[10h] Queen Balthild later ruled a united Austrasia, Neustria, and this kingdom to the south after the death of her husband Clovis II. This kingdom was later divided between East and West Francia by the Treaty of Meerssen.

ANSWER: Kingdom of Burgundy

<DC, European History>

4. Donald Campbell and Donald Fiske developed the multitrait-multimethod matrix to interpret the "construct" type of this quantity using its convergent and discriminant types. For 10 points each:

[10m] Name this quantity whose “face” type refers to the intuitive judgment of whether a test accurately measures what it is intended to measure.

ANSWER: **validity** [accept construct **validity**; accept convergent **validity**; accept discriminant **validity**; accept a priori **validity** or face **validity**]

[10e] The MTMM is widely used to find correlation among the “Big Five” grouping of this set of characteristics, which is sometimes remembered with the mnemonic OCEAN.

ANSWER: **personality**

[10h] In MTMM, the “trait” and “method” scores modified by this prefix are typically the lowest in the matrix and never exceed the validity coefficients of their own columns. This prefix partly modifies a type of plasticity that occurs as a result of neuromodulation.

ANSWER: **hetero-** [accept **heterotrait** score; accept **heteromethod** score; accept **heterosynaptic** plasticity]
<GP, Social Science>

5. A system with this orientation is a classic example in control theory used to test different feedback strategies, which try to maintain balance by manipulating the pivot. For 10 points each:

[10m] Name this unstable pendulum orientation whose center of mass is above its pivot point.

ANSWER: **inverted** pendulum [accept equivalents like **upside-down** pendulum]

[10e] Another strategy for keeping the inverted pendulum balanced is to apply this rotational analogue of force to the pivot point. In the rotational form of Newton’s second law, this quantity is the time derivative of angular momentum.

ANSWER: **torque**

[10h] This Russian physicist developed the theory behind the strategy of balancing the inverted pendulum by oscillating the pivot point vertically, and he names that example of a parametric oscillator.

ANSWER: Pyotr **Kapitza** [or Pyotr Leonidovich **Kapitsa**]
<JF, Physics>

6. Twenty-four of these objects are mounted on pedestals and arranged in an arc to measure time in one installation. For 10 points each:

[10m] Name these objects, three of which made up a cello played by Charlotte Moorman in a performance art piece. These objects comprise a neon-bordered map of the United States in the installation *Electronic Superhighway*.

ANSWER: **televisions** [or **TVs**; accept video **monitors**; accept **TV** screens; prompt on **screens**]

[10e] Those installations were created by Nam June Paik, who created numerous depictions of this figure observing himself through a closed circuit television system. Statues of this figure, who is often sculpted with a topknot and elongated earlobes, depict different hand positions called mudras.

ANSWER: **Buddha** [accept **Siddhartha** Gautama]

[10h] This Japanese video artist and wife of Paik embedded TVs with images of nude women into a staircase in a tribute piece to Duchamp. This artist attached a paintbrush to her underwear to create action paintings.

ANSWER: Shigeo **Kubota**
<IH, Visual Arts>

7. Conceptual artist Wú Mǎlì reconstructed a national tragedy in this country, focusing on untold stories of female victims, in the piece *Epitaph*. For 10 points each:

[10m] Name this country where Chén Yí perpetrated the 228 incident. In 2022, native leaders executed by this country’s government during the 44-year-long White Terror were posthumously exonerated.

ANSWER: **Táiwān** [or **Republic of China** or **Zhōnghuá Mínguó** or **Tiong-hûa Bîn-kok**; reject “China” or “People’s Republic of China” or “Zhōngguó” or “Zhōnghuá Rénmín Gònghéguó”]

[10e] This Taiwanese political party targeted Indigenous dissidents to promote Hàn homogeneity in Táiwān. During the White Terror, Dǎngwài activists ran native independent candidates to counter this party’s hegemony.

ANSWER: **Kuomintang** [or **KMT** or **Guómíndǎng** or **GMD** or **Kok-bîn-tóng**]

[10h] As the first directly-elected President of Táiwan, this leader ended the White Terror in 1992 and sponsored remedial Indigenous gestures like the removal of the Wu Feng Legend from history books.

ANSWER: Lee Teng-hui [or Lǐ Dēnghuī or Lǐ Ting-hui]

<AS, World History>

8. A novel ends with the protagonist reaching the end of this location and emerging on the other side, where she hitches a ride on Ollie's wagon headed for California. For 10 points each:

[10m] Name this place for which Royal works before he is killed during a raid on an Indiana farm. In a novel titled for it, Cora and Caesar find this place during their travels as they try to elude Ridgeway.

ANSWER: the Underground Railroad (The novel is by Colson Whitehead.)

[10h] Harriet Tubman and Hiram work together to teleport on the Underground Railroad in this author's novel *The Water Dancer*. An essay by this author discusses Clyde Ross's efforts to battle predatory housing policy in North Lawndale.

ANSWER: Ta-Nehisi Coates (The essay is "The Case for Reparations.")

[10e] In a "Haiku and Tanka" by Sonia Sanchez, Harriet Tubman says, "I am the real thing," to this book. Eliza escapes to freedom across the Ohio River in this Harriet Beecher Stowe novel.

ANSWER: Uncle Tom's Cabin

<CM, American Literature>

9. Recursive data types such as lists and natural numbers are these things for functors. For 10 points each:

[10h] Name these things. A recursive function can be constructed as one of these things for an appropriate higher-order function. In the lambda calculus, the Y combinator computes one of these things for its argument.

ANSWER: least fixed points [or fixpoints; accept fixed point combinator]

[10e] This recursive data structure can be constructed as a fixpoint of the functor "*F*-of-*X* equals one plus *X*-squared." Non-leaf nodes in these data structures can have up to two branches, and their "search" type allows for fast lookup.

ANSWER: binary trees [accept binary search trees; prompt on search trees]

[10m] One advantage of writing recursive functions with the fixed-point combinator is that it naturally allows this technique of storing results of intermediate function calls. Top-down dynamic programming uses this technique to store solutions of sub-problems.

ANSWER: memoization [accept word forms like memoizing]

<RA, Other Science: Computer Science>

10. One hadith found in Muslim ibn al-Hajjaj's *Kitab al-Adab*, or Book of Etiquette, recommends that new parents perform *tahnīk* by rubbing either honey or the juice of this fruit in the newborn's mouth. For 10 points each:

[10e] Name these fruits whose intensely sweet dried varieties after often used to break the fast during Ramadan.

ANSWER: dates [accept specific types of dates like medjool, deglet nour, or 'ajwa]

[10m] The nineteenth surah recounts how horrible pains drove this figure to the trunk of a previously-barren date tree, which miraculously provided ripe, fresh fruit once shaken on Allah's instruction.

ANSWER: Maryam bint Imran [or the Virgin Mary]

[10h] Anas bin Malik narrated a hadith about how Muhammad only ever ate dates in this manner. Another hadith relates Muhammad saying that because this attribute fits Allah, He loves things with this attribute, in response to a question about his ninety-nine names.

ANSWER: in odd numbers (The first hadith recounts how Muhammad only ate odd numbers of dates; the other one recounts Muhammad saying, "Verily, Allah is numerically odd and He loves what is odd in number.")

<HK, Beliefs>

11. In a critique of this stock character, the Native American-raised Hermsprong disapproves of the qualities of English high society while on a visit to England in Robert Bage's novel *Man as He is Not*. For 10 points each:

[10m] Give this two-word phrase for a stock character that was likely first referenced in novels by Marc Lescarbot (“less-car-BO”), but is frequently misattributed to Jean-Jacques Rousseau as the ideal of human nature.

ANSWER: **noble savage**

[10e] Miss Fluart contrasts Hermsprong’s ingenuity and common sense with these two qualities possessed by Lord Grondale. These two qualities title a Jane Austen novel about Elizabeth Bennet.

ANSWER: **pride** AND **prejudice**

[10h] Michel de Montaigne helped originate the “noble savage” in “Of Cannibals” and an essay on these objects, in which he muses that the last king of Peru did not use one of them. An essay titled for one of these objects relates its narrator’s “vision of sudden death.”

ANSWER: **coaches** [accept **mail-coaches**; accept “**Of Coaches**” or “The **English Mail-Coach**”] (Thomas de Quincey wrote “The English Mail-Coach.”)

<GP, British Literature>

12. Hartry Fields argues that since math is a merely practical tool for the application of science, it is not “indispensable” to science at all, contrary to an argument coauthored by this thinker. For 10 points each:

[10m] Name this thinker who, with W.V.O. Quine, argued that we must consider mathematics to be real because it is indispensable to our best scientific theories.

ANSWER: Hillary **Putnam** [or Hilary Whitehall **Putnam**]

[10e] Quine and Putnam’s position on the reality of numbers is named for this ancient Greek thinker. Socrates identifies the highest level of reality with abstract forms in this philosopher’s dialogues.

ANSWER: **Plato** [accept **Platonism**]

[10h] Yoshimura and Baker argue that, in addition to being necessary for our best scientific theories, mathematics must be a part of this process in science to be considered real. Hempel and Oppenheim support the deductive-nomological version of this process.

ANSWER: scientific **explanation**

<MB, Philosophy>

13. In a book titled for this company “and the Holocaust,” Edwin Black documents how its *Hollerith* punch card technology helped the Nazis keep tabs on Jewish prisoners. For 10 points each:

[10m] Name this American company that worked with Howard Aiken to build Harvard’s Mark I computer to simulate the atomic bomb.

ANSWER: **IBM** [or **I**nternational **B**usiness **M**achines Corporation; accept **IBM and the Holocaust**]

[10e] IBM’s punch cards were used to monitor victims of this policy at facilities like Tule Lake and Manzanar. The Census Bureau provided data on people like Fred Korematsu for this policy following Executive Order 9066.

ANSWER: **Japanese**-American **internment** [accept answers like **Japanese imprisonment**; prompt on **internment** or **imprisonment**]

[10h] The OP-20-G used IBM punch cards for this task during World War II. J. Edgar Hoover took credit for this task from Elizebeth Smith Friedman, whose husband William performed it on PURPLE.

ANSWER: **codebreaking** [or **cryptography**; or **cryptanalysis**; accept **decryption**; accept **cracking** the **code**; accept **cracking ciphers**; accept specific answers like **cracking** the German **cipher**; accept descriptive answers regarding **codebreaking**]

<AS, American History>

14. After Mitsutoshi Setou and Hiroshi Ageta discovered the SCRAPER synaptic protein, this artist depicted it as an android slapping ubiquitins on monsters for a 2005 cover of the journal *Cell*. For 10 points each:

[10h] Name this artist who created the series Rohan at the Louvre for a 2009 exhibition. This artist also created *JoJo’s Bizarre Adventure*.

ANSWER: Hirohiko **Araki**

[10e] At the same time as Araki's Louvre exhibition, this studio created a miniature replica of the Louvre to illustrate early zoetrope animation. A 2022 exhibit at the Academy Museum featured art for *Howl's Moving Castle* and *Spirited Away*, films by this studio.

ANSWER: Studio **Ghibli**

[10m] A 2022 exhibit on the "Architecture of Neo-Tokyo" includes unseen sketches by Toshiharu Mizutani for this film. Jordan Peele's *NOPE* references a motorcycle slide in this film, whose gamelan-inspired soundtrack accompanies Tetsuo's mutation in an arena.

ANSWER: **Akira**

<GE, Other Academic>

15. Note to moderator: "Glymphatic" is not a typo.

This substance is produced primarily by the choroid plexus. For 10 points each:

[10e] Name this largely acellular substance that participates in the recently-characterized "glymphatic system's" clearance of interstitial solutes. This substance can be sampled via a lumbar puncture.

ANSWER: **cerebrospinal fluid** [or **CSF**]

[10m] Glymphatic CSF movement distributes lipids like ApoE, synthesized by these glial cells whose ends encircle the blood-brain-barrier's endothelial cells. Loss of AQP4 from these cells' endfeet reduces glymphatic clearance.

ANSWER: **astrocytes**

[10h] CSF circulates signaling factors like PDGF, which promotes cell proliferation in this region lining the lateral ventricles. Type A, B, and C cells in this region serve as a stem cell niche, making it a site for adult neurogenesis in the rostral migratory stream.

ANSWER: **subventricular zone** [or **SVZ**]

<AY, Biology>

16. In his namesake "doctrine," this economist argued that businesses have a social responsibility to increase profits, as they have no social responsibility but rather only accountability to shareholders. For 10 points each:

[10m] Name this economist who suggested that the presence of a natural monopoly, neighborhood effects, or a breakdown in free exchange were reasons for government intervention in a certain type of institution.

ANSWER: Milton **Friedman**

[10e] Friedman's proposal for intervention to allow a "choice" of these institutions was based around government-funded vouchers to incentivize productivity in public *and* private types of these institutions.

ANSWER: **schools**

[10h] More recently, Atila Abdulkadiroglu, Parag Pathak, and Alvin Roth have used this methodology to analyze school choice. Matching theory is used to understand this methodology in certain systems without prices.

ANSWER: **market design** [prompt on **mechanism design**; reject "auction theory"]

<KJ, Social Science>

17. Answer the following about solid-state electrolytes that conduct ions, but not electrons, for 10 points each.

[10e] The selective diffusion of ions through crystal lattices is the basis for ion-selective electrodes, such as fluoride through this element's trifluoride. This first element in the *f* block sits above actinium on the periodic table and lends its name to a series of rare earth metals.

ANSWER: **lanthanum** [or **La**]

[10m] The ability of yttrium-stabilized zirconia membranes to conduct oxide anions is key to solid oxide examples of these devices. Unlike batteries, these devices need a continuous stream of reactants to produce a voltage.

ANSWER: **fuel cells** [accept hydrogen **fuel cells** or solid oxide **fuel cells**]

[10h] Under intense temperature and pressure conditions, this phase of ice forms, in which the hydrogen atoms give up their electrons to become protons and conduct freely through a lattice of oxygen atoms.

ANSWER: **superionic** ice [accept ice **XVIII** or ice **18**]

<VD, Chemistry>

18. Inspired by the sagas of the Great Heathen Army's conquest of half of England, you venture out from Denmark thirty years later in hopes of achieving a similar glory. Answer some questions about your failures, for 10 points each.

[10m] Upon arriving in England, you quickly discover the difficulty in sacking these fortified towns constructed by Alfred the Great and connected by *herepaths*.

ANSWER: burhs [or burgs]

[10h] While leaving Kent, you are unable to escape the reorganized forces of this son and successor of Alfred. This ruler integrated Mercia into Wessex with the help of his sister Aethelflaed ("[ethel-fled](#)").

ANSWER: Edward the Elder [prompt on Edward]

[10e] You flee to the valley of this river, which was agreed to form the border between Anglo-Saxon and Danish lands. Edward was crowned upon this river at Kingston, part of modern-day London.

ANSWER: River Thames

<DC, Other History: British>

19. Karl S. Weimar considers challenges translating this poem, like the failure to maintain the pronoun shift from "sie" to "dich" that creates a "morbid...familiarity" in the Jewish perception of a metaphor for lethal gas. For 10 points each:

[10h] Name this poem, which describes "a man who lives in the house" who "plays with the snakes and dreams" and imagines Death as a blue-eyed "master from Deutschland."

ANSWER: "Death Fugue" [or "Fugue of Death" or "Todesfuge"]

[10e] While "Todesfuge" was first published in Romanian, it was originally written in this language whose literature was pioneered by authors such as Friedrich Schiller.

ANSWER: German [or Deutsch]

[10m] Translators of "Todesfuge" often forgo meter to keep the parallel between this thing belonging to the Jewish Shulamit and this thing belonging to Margarete. In another poem, this thing becomes a constellation after the Baron steals it from Belinda.

ANSWER: hair [accept ashen hair or golden hair; accept *The Rape of the Lock*]

<AS, European Literature>

20. Ted Gioia describes this piece as "the aesthetic of Ellington applied to the...electronic pop style of the 1970s," with "contrasting moods" such as a harmonic-laden bass intro by Jaco Pastorius. For 10 points each:

[10m] Name this standard that Joe Zawinul wrote for Weather Report as a tribute to a New York jazz club named after Charlie Parker.

ANSWER: "Birdland"

[10h] Weather Report pioneered jazz fusion with pieces such as "Birdland," alongside groups like this band led by John McLaughlin. Most of this Indian-inspired band quit amid tensions that arose after it released *Birds of Fire*.

ANSWER: Mahavishnu Orchestra

[10e] Before they formed Weather Report and the Mahavishnu Orchestra, Zawinul, Shorter, and McLaughlin played together on this musician's fusion album *Bitches Brew*. This trumpeter also recorded *Kind of Blue*.

ANSWER: Miles Davis [or Miles Dewey Davis III]

<AS, Auditory Arts>