

2022 Winter Closed

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Packet I

Tossups

1. **Makeup artist Mariquita (“mah-ree-KEE-tah”) Samper shoots an author in a mock “intimate diary” of this concept from Giannina Braschi’s *Empire of Dreams*. In a Nobel lecture titled for this concept, an author quoted William Faulkner’s line “I decline to accept the end of man” and linked colonial accounts to the “outsized reality” of his continent. That author smoked 60 cigarettes a day to finish a novel titled for this concept while holed up in a Mexico City apartment where he read (*) *Pedro Páramo*. In a novel titled for this concept, a patriarch who babbles in Latin upon going mad is left tied to a tree, and his great-grandson withdraws to a study after he survives a massacre of banana workers. As that novel titled for this concept begins, a colonel recalls his first time seeing ice as he faces a firing squad. For 10 points, a novel set in Macondo is titled for “One Hundred Years” of what concept?**

ANSWER: **solitude** [or **soledad**; accept *One Hundred Years of Solitude* or *Cien años de soledad* or “The **Solitude** of Latin America” or “Intimate Diary of **Solitude**”] (Samper shoots a stand-in for Gabriel García Márquez.)

<R. Keyal, Misc. Literature>

2. **Signum Records began as an effort to record this composer’s work, which includes a namesake “canon” published by Thomas Ravenscroft. Alessandro Striggio’s *Ecce Beatam Lucem* possibly inspired the number of performers for a piece by this composer in which rotating points of imitation end with “polyphonic detailism.” Matthew Parker’s version of Psalm No. 2 serves as the text for a (*) “Third Mode Melody” by this composer that forms the basis of a much later piece for double string orchestra and string quartet. The elegy *Ye Sacred Muses* was written to commemorate this composer by his student William Byrd. This composer’s song “Why fum’th in fight” was adapted into a Fantasia by Ralph Vaughan Williams. For 10 points, name this Renaissance-era English composer of the 40-person motet *Spem in alium*.**

ANSWER: Thomas **Tallis** [accept *Fantasia on a Theme by Thomas Tallis*]

<Evans, Classical Music>

3. **The positions of these objects determine the positions of cusps in the density function by Kato’s theorem. In Car–Parrinello dynamics, wave functions are propagated in parallel with these objects’ positions using an extended Lagrangian. Gaussian basis functions are less steep near these objects than Slater-type basis functions. A quantity associated with these objects equals the sum of volume, surface, Coulomb, symmetry, and pairing terms in a formula that (*) Carl Friedrich von Weizsäcker (“VYTE-secker”) derived from a model that likens these objects to incompressible fluids. These objects are stationary in the Born–Oppenheimer approximation. The mass defect times the speed of light squared gives these objects’ binding energy. The existence of these objects invalidated the plum pudding model. For 10 points, what objects are made of protons and neutrons?**

ANSWER: **nuclei** [or **nucleus**; prompt on **ions** until “basis functions” is read] (The sentence about Carl Friedrich von Weizsäcker refers to the formula for the binding energy.)

<Settle, Chemistry>

4. The chef Antonin Carême named a soufflé dish after this family while working for them at the Hôtel de Talleyrand. This family stretched its rivalry with the Portuguese Pereire (“pay-RAIR”) brothers into winemaking by purchasing the Châteaux Lafite and Mouton. A figure grasps five arrows on this family’s coat of arms, which features a white horse and the Latin phrase “Harmony, Industry, Integrity.” Legendarily, one member of this family heard about the result of the Battle of (*) Waterloo through a carrier pigeon, which was also how they supposedly gained advance knowledge of financial events. The five sons of this family’s patriarch Mayer were given the title “baron” by Francis I of Austria. Following the July Revolution, Louis Philippe thanked this family for refinancing government loans. For 10 points, name this Jewish banking family originating in Germany.

ANSWER: **Rothschilds** [accept Nathaniel de **Rothschild**, Meyer Amschel **Rothschild**, or James Mayer de **Rothschild**; accept Baron de **Rothschild**]
<Parameswaran, European History>

5. This woman called imagination the “Combining Faculty” in an essay written amid her correspondence with the logician Augustus De Morgan. A 2018 book by Miranda Seymour centers on Annabella Milbanke and this daughter of hers, both relegated to a relative’s “wake.” Originality is central to an “objection” named for this woman, which is one of nine discussed in a 1950 paper in the journal *Mind*. This woman’s *Note G* was part of a commentary on an article by Luigi Menabrea. This woman is generally considered to have inspired the character (*) Thomasina Coverley in Tom Stoppard’s play *Arcadia*. The first chapter of Walter Isaacson’s book *The Innovators* discusses this woman’s method for calculating Bernoulli numbers using the Analytical Engine of Charles Babbage. For 10 points, Lord Byron was the father of what woman, who is often called the first computer programmer?

ANSWER: Ada **Lovelace** [or Augusta Ada **King**, Countess of Lovelace; or Lady **Lovelace**; or Augusta **Ada Byron**; prompt on **Ada** or **Byron**] (The book by Miranda Seymour is *In Byron’s Wake*. The paper is “Computing Machinery and Intelligence” by Alan Turing.)
<Morrison, Other Academic>

6. According to Edward McInnis, holders of this position were idolized by Antebellum American historians who connected social inequality to declining republicanism. The abolition of priests who cared for the Sibylline Books and the creation of praetors was part of the Licinian Rogations pushed by holders of this position. In *Discourses on Livy*, Machiavelli admires this position’s *auxilium* power to determine the lawfulness of actions, which may have inspired *habeas corpus*. A holder of this position broke tradition by presenting a bill directly to the Assembly, bypassing the Senate who opposed his (*) *Lex Agraria*. Two holders of this position were assassinated by the Optimates (“op-tim-AY-teez”) for attempting to transfer public land to the poor; those holders were the Gracchi (“GRAH-kee”). This position was created in response to the first *secessio* mass walk-out to the Sacred Mount. For 10 points, name this position in the Roman Republic that represented free citizens who weren’t patricians.

ANSWER: **Tribune** of the **Plebs** [or **Plebeian Tribune**; accept **Tribune** of the **People**; prompt on **tribune**]
<Evans, Other History>

7. A poet who likened these people to “sewing needles or hydraulic landscapes” wrote a poem in which one of them “[plays] her parchment moon” as the wind chases her. These people come “through the olive groves... bronzed and dreamy” to “[cry] loudly... within the forge” in a translation by Langston Hughes. In another poem, two friends climb to a balcony to see one of these people with “eyes of cold silver” swing from an “icicle of moon.” A collection titled for these people that draws on their (*) “deep song” includes a “romance” repetitively titled for the moon and a poem that opens “Green, how I want you green.” “Romance Sonámbulo” appears in a collection that its author followed with *Poet in New York*, titled for these people’s “ballads.” For 10 points, Federico García Lorca often wrote about the music and flamenco dancing of what ethnic group?

ANSWER: **Roma** [or **Romani**; accept **gitanos** or *Romancero* **Gitano**; accept **Calé**; prompt on the derogatory term gypsies or Gypsy Ballads or “The Gypsy and the Wind”]

<R. Keyal, Poetry>

8. Some eschatological sources claim that this figure’s relics will one day reassemble into a body and burst into flames. Beads like “jasmine buds,” pearls, and gold left by this figure almost sparked an eight-way war and inform the tradition of searching for *śarīra* (“shuh-REE-ruh”). In depictions of this figure, the fingers of their right hand are extended towards the ground while their left hand lays flat, calling the earth goddess to witness a great achievement. Aniconic representations of this figure include an empty (*) diamond throne under a parasol. Both natural and artificial footprints belonging to this figure are decorated with wheels. Since seeing a relic of this figure is equivalent to seeing this figure himself, pilgrims flock to see eight of his hairs enshrined in a golden pagoda in Burma and a left-eye tooth belonging to him in Sri Lanka. For 10 points, what figure achieved enlightenment under a Bodhi tree?

ANSWER: the **Buddha** [or **Siddhartha** Gautama; or Siddhartha **Gautama**; or **Shakyamuni**]

<Yang, Religion>

9. Robert Wald showed that this quantity is a Noether (“NOY-tur”) charge for diffeomorphism (“diff-ee-oh-morphism”)-invariant classical theories of gravity. By associating this quantity with local Rindler horizons and the Unruh (“UN-roo”) temperature, Ted Jacobson showed that the Einstein field equations are an equation of state. In a *Gedankenexperiment* (“guh-DAH-kin-experiment”) from 1929, Leo Szilard (“LAY-oh SEE-lard”) argued that this quantity is increased by measurement. Operations that erase bits dissipate heat and thereby increase this quantity by Landauer’s principle. (*) Marian Smoluchowski (“MAR-yahn smoh-loo-KOFF-skee”) explained how thermal fluctuations prevent this quantity from being decreased by a door that only opens for fast moving molecules. One explanation for the perceived “arrow of time” is that this macroscopic thermodynamic quantity is nondecreasing in isolated systems. The second law of thermodynamics forbids the decrease of, for 10 points, what measure of disorder?

ANSWER: **entropy** [accept black hole **entropy**; accept information **entropy**; prompt on **S**]

<Parameswaran, Physics>

10. This art form inspired Stuart Davis to make hard-edged Cubist paintings like *The Mellow Pad* and his *Egg Beater* series. Jean-Michel Basquiat (“bah-skee-ah”) celebrated performers of this art form in *King Zulu* and two oilstick triptychs covered in words, including *Charles the First*. A collection titled for this art form shows a solid-black falling Icarus against a blue starlit night in one of 20 *pochoir* (“pohsh-WAHR”) prints made by an artist confined to a wheelchair. That circus-themed book titled for this art form collects colorful (*) cut-outs by Henri Matisse. It’s not dance, but one of this art form’s styles titles both a “lozenge” painting dubbed “Victory” and an earlier Neo-Plastic painting of red, blue, and gray rectangles connected by yellow lines that imitate Manhattan’s grid layout. For 10 points, 20th-century artists like Piet Mondrian drew on the rhythms and improvisation of what genre of music?

ANSWER: **jazz** [accept **blues** or **swing** or **bebop**; accept *Broadway Boogie-Woogie*, *Victory Boogie-Woogie*, or **boogie-woogie** until read; prompt on **music**; prompt on **horn** or other descriptions of playing instruments] (The other Basquiat triptych is *Horn Players*.)

<R. Keyal, Painting and Sculpture>

11. *Description acceptable.* As a boy, this character moo’d at a grazing cow, who moo’d back and caused him to break his arm. A woman describes trying to carry this character “pure and unscathed... through the sick nights, and the pathetic, stupid days” while a man recites the “Liberate me” in Latin. A man calls this character a “bean bag” and “the apple of our three eyes” in a play set on the eve of this character’s twenty-first “birfday.” This character’s death mirrors a story about a (*) boy who caused a bar to erupt in laughter by ordering “bergin (“BERG-in”) and water.” A woman hysterically shouts “I will not let you decide these things!” after being told of a telegram stating that this character has died while swerving to avoid a porcupine, to the shock of Nick and Honey. For 10 points, name this character who is revealed to be imaginary in an Edward Albee play about the couple George and Martha.

ANSWER: the imaginary **son** in *Who’s Afraid of Virginia Woolf?* [accept the imaginary **child** in *Who’s Afraid of Virginia Woolf?*; accept answers mentioning **son** or **child** and at least one of **George** and/or **Martha**; prompt on **son** or **child**]

<Morrison, Drama>

12. Jean-Paul Sartre (“sart”) was first introduced to this book through conversations with Shuzo Kuki, the author of *The Problem of Contingency*. To emphasize its connection to the socially-conditioned understanding of “what one does,” Hubert Dreyfus (“DRY-fuss”) prefers to translate one term from this book as “the one” rather than “the they.” Jacques Derrida’s project of deconstruction was inspired by this book’s attempt to (*) destroy the history of metaphysics, starting with the ancient idea that being is presence. This book distinguishes between encountering being as a tool and as an object, modes that it calls “ready-to-hand” and “present-at-hand.” This book attempts to answer the “question of the meaning of Being” by investigating *Dasein* (“DAH-zyne”). For 10 points, name this magnum opus of Martin Heidegger.

ANSWER: **Being and Time** [or **Sein und Zeit**]

<French, Philosophy>

13. These phenomena are detected by the citizen science apps CREDO, DECO, and CRAYFIS using smartphone cameras. A dipolar anisotropy (“an-EYE-soh-truh-pee”) in the arrival direction of these phenomena was reported by an Argentina-based observatory consisting of an array of water-Cherenkov detectors overseen by 27 fluorescence detectors. HZE particles are a small component of these phenomena. A short-lived delta baryon (“BARE-ee-on”) is produced by the interaction between these phenomena and CMB photons that (*) suppresses these phenomena at energies above 3 times 10-to-the-19th electron-volts. Victor Hess discovered these phenomena by measuring ionizing radiation during balloon flights. Supernovae and active galactic nuclei are the primary extragalactic sources of, for 10 points, what high-energy beams of protons and nuclei?

ANSWER: **cosmic rays** (The second sentence is about the Pierre Auger Observatory. The fourth sentence refers to the GZK limit.)

<Settle, Other Science>

14. This woman and her father acted out of “realpolitik” instead of egalitarianism according to a 2004 history titled for a “dilemma” by Rutgers professor Camilla Townsend. This woman wears an extravagant costume and holds an ostrich-feather fan in the only known engraving of her made by Simon van der Passe. This woman names an exception to the Racial Integrity Act of 1924, as many citizens of one state proudly claimed to be (*) descendants of her. Samuel Argall convinced the *werowance* (“WAIR-uh-wunce”) Iopassus to give up this woman, leading to her being ransomed in exchange for English prisoners. This woman, who was given the name “Matoaka” by her father Powhatan, took the name Rebecca Rolfe after converting to Christianity. For 10 points, name this Native American woman who likely never saved John Smith.

ANSWER: **Pocahontas** [accept **Matoaka** until read; accept Rebecca **Rolfe** until read]

<Parameswaran, American History>

15. An Ashanti god of these things cheated his brother Bia out of inheriting the land of Ghana. The Yoruba goddess Oba became one of these things after a fellow wife of Shango tricked her into cutting off her ear. In an epic from the DRC, after being thrown into one of these things, Mwindo traveled in a drum to see his aunt. The return of the Distant Goddess was linked to a festival around one of these things. One of these things was home to a protector of the Tonga people, Nyami Nyami. Another deity controlled one of these things from caves at (*) Elephantine and used material from these things to form the bodies of humans. Another god’s body was retrieved at Byblos after it was cast into one of these things. That one of these things is formed from the sweat of Sobek. For 10 points, Hapi presided over the flooding of the Nile, an example of what geographical features?

ANSWER: **rivers** [prompt on whirlpools by asking “what larger place is it a part of?”; prompt on bodies of water; reject “dams”] (The first line refers to Tano.)

<Yang, Mythology>

16. In a novel by this author, the protagonist cruelly presents a man with locks of hair that she claims are hers, but which actually belonged to her dead maid. A widower travels to a farm to find a new wife, only to fall for a shepherdess traveling with him, in a novel by this author that inspired the painting *Ploughing in the Nivernais* (“nee-vair-NAY”). Four pastoral novels by this author are gifted to the narrator by his mother in an early scene from (*) *Swann’s Way*. A novel by this author of *The Devil’s Pool* ends with the title woman and her lover nearly killing themselves by jumping into a waterfall after she leaves Colonel Delmare on the island of Réunion. A trip with a tubercular composer inspired her travelogue *A Winter in Majorca*. The novels *Consuelo* and *Indiana* are by, for 10 points, what French author and lover of Frédéric Chopin who wrote under a male pseudonym?

ANSWER: George **Sand** (“zhorzh sahnd”) [or Amantine Lucile Aurore **Dupin**]

<Morrison, Long Fiction>

17. To decorate the ceiling of a building honoring this ruler's wife, artists painted thousands of five-pointed stars against a deep blue background. A depiction of spies being beaten decorates one of two pylons flanking the entrance to a complex constructed by this ruler, whose tomb was built along a seemingly anachronistic "bent axis." A granite statue housed in the British Museum depicts this ruler as the "Younger (*) Memnon." Paris's Place de la Concorde houses a 75-foot-tall monument originally erected by this ruler. Four colossal, seated statues of this ruler flank the entrance to the hypostyle hall of a "Great Temple" originally built near Aswan. In the 1830s, the French secured the obelisks erected by this ruler at the Luxor Temple. For 10 points, name this pharaoh who commissioned a temple complex at Abu Simbel to commemorate his victory at the Battle of Kadesh.

ANSWER: **Ramesses II** [or **Ramesses the Great**; or **Ozymandias**; prompt on **Ramesses**]

<Naveh-Benjamin, Other Arts>

18. An emperor of this dynasty responded to an alleged plot by chancellor Hu Weiyong to overthrow him by ordering tens of thousands of executions and abolishing the position of chancellor. After the death of his oldest son, this dynasty's founder sent most of his sons to administer frontier regions to clear the way for his grandson, the Jianwen ("j'yen-wun") Emperor, to succeed him. After the exile of several of his brothers, a prince of this dynasty launched the (*) Jingnan Campaign to overthrow Jianwen. This dynasty's third ruler moved his capital from Nanjing to Beijing and sponsored the construction of the Forbidden City. That emperor from this dynasty also sponsored massive treasure voyages led by his admiral Zheng He ("jung huh"). For 10 points, name this dynasty of the Hongwu and Yongle Emperors, which overthrew the Mongol Yuan dynasty.

ANSWER: **Ming** dynasty

<Raje, World History>

19. *Note to moderator: Read the answer carefully. Description acceptable.* Justin Barrett theorized that experiences of this nature rely on a hyperactive agency "device" attuned to ambiguous stimuli like the sound of a twig snapping. Dean Hamer dubiously claims that the heritability of experiences of this nature is associated with an allele of the gene coding for VMAT2. The lack of introspection in the *Iliad* is used to support the claim that consciousness arose from "voices" of this nature in Julian Jaynes's bicameral theory. Temporal lobe (*) epilepsy is linked with experiences of this type, which can also be elicited by entheogens. William James posited that these experiences must be "ineffable, noetic, transient, and passive" in a book titled for their varieties. Oliver Sacks suggested that migraine auras were interpreted by Hildegard of Bingen as these kinds of experiences. For 10 points, peyote can bring about what kinds of experiences facilitated by shamans?

ANSWER: **religious** experiences [or word forms; accept word forms of **sacred**, **spiritual**, **divine**, or **numinous** or **mystical**; accept any answers indicating encountering **God** or **gods**; prompt on **consciousness** until read by asking "what did it develop from?"; prompt on **visions** or hearing **voices** until read by asking "of what specific type?"; prompt on **supernatural**, **ecstasy**, **hallucination**, or **out-of-body** experiences by asking "of what specific type?"]

<Yang, Social Science>

20. **One of these molecules with a high affinity for endothelin was used to target Tendamistat on the surface of M13. Protein L, Protein G, and Protein A are common ligands used to purify these molecules. Carrier proteins such as keyhole limpet hemocyanin and bovine serum albumin enhance the binding of these molecules to haptens. The epigenetic machinery of gene expression is studied by using these molecules to (*)** precipitate chromatin fragments in ChIP. The nonspecific binding of these molecules is prevented by incubating with a blocking buffer before exposing the protein of interest to them in ELISA and western blot protocols. These molecules must be isotyped to determine whether they are of class M, G, A, D, or E. For 10 points, immunoassays rely on which molecules that bind to antigens?

ANSWER: **antibodies** [or **antibody**; or **immunoglobulin**s or **IGs**]

<Settle, Biology>

Bonuses

1. The eruption of Laki in Iceland during this decade led to a drop in global temperatures that caused crop failures in much of Europe. For 10 points each:

[E] Name this decade during which France's economy was devastated by the resulting famines and by debts from financing the American Revolution. The storming of the Bastille took place during the last year of this decade.

ANSWER: **1780s** [prompt on the '80s]

[H] Grain shortages in the spring of 1789 led to this mass panic among French peasants due to the belief that aristocrats were attempting to starve them. Mary Matossian controversially argues that this panic was caused by hallucinogens in rye bread.

ANSWER: **Great Fear** [or la **Grande Peur**]

[M] The failure to place taxes on the nobility was blamed on these provincial courts. René de Maupeou ("moh-poo") attempted to abolish these courts in the 1770s, though they were only abolished after the Estates-General was called in 1789.

ANSWER: **parlements** ("par-luh-MAWN") [accept **parliaments**]

<Raje, European History>

2. Lucia Berlin's story "Point of View" praises this author's "impartial voice" and asks to imagine his story "Grief" in the first person. For 10 points each:

[M] John Cheever is often nicknamed what author "of the suburbs?" Joyce Carol Oates updated this author's story about the unhappily-married Anna, setting it in Nantucket rather than Yalta.

ANSWER: Anton **Chekhov** [or Anton Pavlovich **Chekhov**; accept "**Chekhov** of the suburbs"] (Oates's story is "The Lady with the Pet Dog.")

[E] Berlin is often compared to this author, called the "American Chekhov," whose story "Errand" depicts Chekhov's death. This "dirty realist" wrote *What We Talk About When We Talk About Love* and *Cathedral*.

ANSWER: Raymond **Carver** [or Raymond Cleve **Carver** Jr.]

[H] Chekhov informed Berlin's writings set in these facilities, like her one-pager "My Jockey" and a "notebook" dated 1977. The narrator smothers a rabbit's babies while returning from a fair with Georgie in a story from Denis Johnson's book *Jesus' Son* titled for one of these facilities.

ANSWER: **emergency** room [or **ER**; or accident and **emergency** department; or **emergency** ward; accept "**Emergency** Room Notebook, 1977"; accept "**Emergency**"; prompt on **hospital** or **ward**; reject "mental hospital"]

<R. Keyal, Short Fiction>

3. A theory of this phenomenon influenced Mulla Sadra to view existence as a fundamental principle that occurs with varying intensity. For 10 points each:

[H] Name this phenomenon. The "Murdered Master," Suhrawardi ("SOO-ra-var-DEE"), defined pure and accidental types of this phenomenon, the first of which includes immaterial things like the soul and the Platonic Forms.

ANSWER: **light** [or **illumination** or **ishraq** or **nur**; accept **sunrise**]

[E] In Suhrawardi's metaphysics, this being is the Light of Lights from which all lights emanate. Mulla Sadra's ontological proof of this being's existence describes this being as perfection in existence.

ANSWER: **God** [or **Allah**; accept the **One**]

[M] Suhrawardi and Mulla Sadra both rejected the metaphysics of this thinker, who distinguished between essence and existence. This thinker proposed the floating man argument for the existence of the soul.

ANSWER: **Avicenna** [or **ibn Sina**]

<French, Philosophy>

4. The only domain named after its discoverer in the SCOP (“skahp”) database is this one. For 10 points each:
[H] Name this common protein structural motif made up of a series of alternating beta strand and alpha helical segments. It is found in many dinucleotide-binding enzymes.

ANSWER: **Rossmann fold** [or **Rossmann-like fold**; or **Rossmannoid fold**]

[E] In enzymes with a Rossmann fold, three conserved residues of this amino acid are found in the loop between the beta-1 and alpha-A that is in contact with dinucleotides. This simplest amino acid’s side chain is a hydrogen atom.

ANSWER: **glycine** [or **Gly**; or **G**]

[M] In Rossmann folds that bind this dinucleotide, an alanine substitutes for one of the glycines. The pentose phosphate pathway generates this molecule whose non-reduced form receives electrons from ferredoxin (“fair-uh-DOX-in”).

ANSWER: **NADPH** [or **NADP+**; or **nicotinamide adenine dinucleotide phosphate**; reject “NAD” or “nicotinamide adenine dinucleotide”]

<Settle, Biology>

5. In 1953, this musical’s creators threatened to cancel a performance of it in a segregated Delaware theater unless the theater could be integrated. For 10 points each:

[M] Name this musical in which the nurse Nellie rejects the French plantation owner Emile because of his past interracial relationship. The popular standard “Some Enchanted Evening” was written for this musical.

ANSWER: ***South Pacific***

[E] *South Pacific* was a collaboration between composer Richard Rodgers and this lyricist with whom Rodgers also created *The King and I*.

ANSWER: Oscar **Hammerstein** II [or Oscar Greeley Clendenning **Hammerstein** II]

[H] This short song was included in *South Pacific* despite warnings that it could risk the entire production given its hints of a Communist agenda. In this song, Joe Cable claims that prejudice is “drummed in your dear little ear.”

ANSWER: “You’ve Got to Be **Carefully Taught**” [or “**You’ve Got to be Taught**”]

<Lo, Other Arts>

6. A literary “biography” by Christine Corton cites George Gissing and H. V. Morton to justify the claim that Charles Dickens brought this stuff into popular consciousness. For 10 points each:

[H] Name this stuff, which *Bleak House*’s celebrated second paragraph describes as “everywhere,” including “in the eyes and throats of ancient Greenwich (“GREN-itch”) pensioners” and in “the cabooses of collier-brigs.”

ANSWER: London **fog** [accept **pea soup** fog or **London particular**; accept *London **Fog**: The Biography*]

[M] Corton also praises Dickens’s use of fog to characterize the wicked and dwarfish moneylender Daniel Quilp, who gets lost in the fog and drowns in the Thames near the end of this Dickens novel about the orphan Nell Trent.

ANSWER: *The **Old Curiosity Shop***

[E] In the opening pages of *A Christmas Carol*, Dickens uses the fog “pouring in at every chink and keyhole” to characterize this miserly protagonist.

ANSWER: Ebenezer **Scrooge** [or **Ebenezer** Scrooge]

<R. Kyal, Long Fiction>

7. The coefficient that relates rainfall rate to the rate of this process is much higher within urban drainage basins. For 10 points each:

[E] Name this process in which excess water from rain and snowmelt moves across the land surface.

ANSWER: surface **runoff** [or **overland flow**]

[H] This quantity is lowered by impervious surfaces in urban areas. The SCS Curve Number method separates total rainfall into three quantities: initial abstraction, runoff depth, and this quantity that measures the amount of rainfall lost to infiltration.

ANSWER: actual **storage** [or potential maximum **storage** or actual **retention** or potential maximum **retention**]

[M] Modern runoff models estimate parameters using this technology that was first implemented by Roger Tomlinson for the Canadian government. This technology creates a relational database between satellite data and spatiotemporal location data.

ANSWER: **GIS** [or **geographic information systems**; prompt on **geoinformatics**]

<Settle, Other Science>

8. A polemic against this practice compares its practitioners to Barbary pirates and claimed that its beneficiaries had a “moral malady.” For 10 points each:

[H] Name this practice that is the subject of William Rufus Scott’s polemic *The Itching Palm*. This was primarily a European practice before the Civil War, as recounted in Kerry Segrave’s “American social history” of this practice.

ANSWER: **tipping** [or giving **tips**; accept **gratuity** or **gratuities**]

[M] This businessman was one of the first to establish tipping as a way to pay his employees less when he hired southern Black men to serve as porters. This man built a namesake company town in the South Side of Chicago.

ANSWER: George **Pullman** [accept **Pullman** Car Company]

[E] This president prided himself on never tipping his barber, and the first statewide anti-tipping law was passed during his term. This man is better known for tipping the scales as America’s heaviest president.

ANSWER: William Howard **Taft**

<Raje, American History>

9. *Description acceptable.* Konrad Wolf designed a still-active rotating restaurant in the Alps near Schilthorn (“SHILT-orn”) to serve this purpose. For 10 points each:

[H] Give this purpose served by “Battleship Island” off the coast of Nagasaki. Ko Tapu off the coast of Thailand is nicknamed for being used for this purpose.

ANSWER: hideout from a James **Bond** movie [accept any answers indicating the location was used to film a James **Bond** movie or a **007** movie; prompt on **movie set** or other vague answers by asking “for what series?”] (Ko Tapu is called “James Bond Island.”)

[M] *Quantum of Solace*’s Perla de las Dunas Hotel was built as a resort for workers at one of these locations on Cerro Paranal in Chile. The final fight of *GoldenEye* was filmed at one of these locations built in a sinkhole in Puerto Rico.

ANSWER: **observatory** [accept **telescope**; accept the Paranal **Observatory**; accept the **National Astronomy and Ionosphere Center**; accept **NAIC**; accept the Arecibo Ionosphere **Observatory**; accept Arecibo **Telescope**]

[E] Monks protested the filming of *For Your Eyes Only* in this country by flying flags and laundry out of monastery windows at Meteora. This country’s Mount Athos is home to a community of Orthodox monks.

ANSWER: **Greece** [or **Hellas**]

<Evans, Geography>

10. *Note to players: You may give the original-language term or a modern translation.* NYRB Classics' 2020 translation of a pair of lectures named for this concept, *Charisma and Disenchantment*, is titled after the ideas of charismatic authority and the "disenchantment of the world." For 10 points each:

[M] Name this concept that a chapter translated by Talcott Parsons calls, in Martin Luther's view, an "absolute end in itself." The aforementioned lectures are titled for analyzing "science" and "politics" as forms of this concept.

ANSWER: **vocation** [or *beruf* ("buh-ROOF"); or **calling**; prompt on answers such as jobs or occupation or profession or labor]

[E] This author of "Politics as a Vocation" emphasized the religious origins of vocation, or calling, in his book *The Protestant Ethic and the Spirit of Capitalism*.

ANSWER: Max **Weber** [or Maximilian Karl Emil **Weber**]

[H] With Hans Gerth ("gairt"), this sociologist helped popularize Weber in America with a set of 1946 translations. Echoing Weber, a book by this man calls individuals "cheerful robots" who "feel that their private lives are a series of traps."

ANSWER: C. Wright **Mills** [or Charles Wright **Mills**] (Those two books are *From Max Weber: Essays In Sociology* and *The Sociological Imagination*.)

<R. Keyal, Social Science>

11. Exotic metaphors in this book that compare its title subject to volcanic eruptions and hurricanes are discussed in Inge van Rij's ("ING-uh van RY's") study of its author's *Other Worlds*. For 10 points each:

[H] Name this book whose taxonomically arranged chapters focus on the intersection of range and timbre ("TAM-burr"). Though influential as the first textbook in its field, this book has been superseded by similar studies by Walter Piston and Samuel Adler.

ANSWER: ***Treatise on Instrumentation*** [or ***Treatise on Orchestration***; or ***Treatise on Instrumentation and Orchestration***; or ***Traité d'instrumentation et d'orchestration modernes***]

[E] This French composer used examples from his own *Grand Messe des morts* and *Symphonie fantastique* in his *Treatise on Instrumentation*.

ANSWER: Hector **Berlioz**

[M] Berlioz's experimentation with orchestral timbres includes his use of this string-instrument technique to imitate skeletons in the Witches' Sabbath movement of *Symphonie fantastique*. This percussive technique involves tapping the string with the back of the bow.

ANSWER: ***col legno*** ("coal LANE-yo") [or ***col legno battuto***]

<Strombeck, Classical Music>

12. The nun Egeria wrote a 4th-century memoir detailing an early instance of this practice. For 10 points each:

[H] Name this practice, the subject of an allegorical poem by Guillaume de Deguileville. The conversation between Mendemus and Ogygias ("oh-JIJ-ee-us") frames a satire titled "[This Practice] for Religion's Sake."

ANSWER: **pilgrimage** [accept **pilgrimage** to the Holy Land; accept "**Pilgrimage** for Religion's Sake"]

[M] This theologian wrote the aforementioned "Pilgrimage for Religion's Sake" in addition to the first published New Testament in Greek. A daughter of Plutus narrates a satirical work on the Catholic Church by this theologian.

ANSWER: Desiderius **Erasmus** (The second sentence refers to *In Praise of Folly*.)

[E] This city was the start of the Via Francigena, a route taken by pilgrims to Rome. Many pilgrims visited Thomas Becket's remains in this city, whose archbishop is the leader of the Anglican Church.

ANSWER: **Canterbury**

<Parameswaran, Religion>

13. This country contains a circular rock formation known as Adam's Calendar, built by the Bakoni people. For 10 points each:

[M] Name this modern-day country where the Taung Child was found. The discovery of a new humanoid species, *Homo naledi*, led archaeologists to claim that a site in this country was the "Cradle of Humankind."

ANSWER: **South Africa** [or Republic of **South Africa**]

[H] *Two answers required.* Similar to Adam's Calendar, the region including these two African countries contains a stone circle formation that was built as early as the 3rd century BC. The Serer kingdoms of Sine ("seen") and Saloum ("sa-LOOM") were located in these two countries.

ANSWER: **Senegal** AND the **Gambia** [accept **Senegambia**]

[E] The Bakoni settled in eastern South Africa during a migration of this ethnic group from Western Africa. This broad ethnic group names a tonal language family that includes Swahili as well as Nguni languages like Zulu.

ANSWER: **Bantu** [accept **Bantu** migration]

<Parameswaran, Other History>

14. In a 2002 introduction, a translator claimed that these punctuation marks are "exciting" because they "gesture toward the papyrological event." For 10 points each:

[H] What punctuation marks "imply a free space of imaginal adventure" according to Anne Carson, who scattered them throughout the translations found in her collection *If Not, Winter* to represent the fragmented work of Sappho?

ANSWER: **brackets** [or **square brackets**; reject "angle brackets" or "braces"]

[M] Carson included an angle bracket in the title of her sequel to *Autobiography of Red*, a verse novel based on a poem about this creature by Stesichorus ("steh-SICK-uh-russ"). In the *Inferno*, Dante and Virgil ride on this creature to the Circle of Greed.

ANSWER: **Geryon** (The sequel is *Red Doc*>.)

[E] Right brackets open every line of Carson's translation of a Sappho fragment mentioning the Graces and these "Pierian" beings. Plato dubbed Sappho the "tenth" of these inspirational goddesses.

ANSWER: **Muses** [or **Musae**; or **Mousai**]

<R. Keyal, Misc. Literature>

15. Answer the following about photoredox catalysts, for 10 points each.

[M] Photoredox catalysts absorb visible light and then participate in this type of reaction with an organic substrate, creating open-shell reactive species. The kinetics of this type of reaction are described by Marcus theory.

ANSWER: (single) **electron transfer** [accept inner-sphere or outer-sphere **electron transfer**; prompt on **SET**; prompt on **redox** reaction or **reduction-oxidation** reaction or **reduction** or **oxidation**]

[H] *Two answers required.* Polypyridine ("poly-PEER-ih-deen") complexes of these two elements are the most well-studied photoredox catalysts. Neither of them is rhodium, but the Cativa process employs a catalyst of one of these two elements promoted by the other.

ANSWER: **iridium** AND **ruthenium** [or **Ir** in place of "iridium"; or **Ru** in place of "ruthenium"]

[E] For photoredox catalysts, the excited state with this number of allowed spins has a long lifetime. Atoms have this many *p* orbitals.

ANSWER: **three** [accept **triplet**]

<Settle, Chemistry>

16. For a 2017 installation spanning 400 feet of the Hirshhorn Museum, Mark Bradford applied horizontal bands of colorful shredded paper to a cyclorama of this conflict by Paul Philippoteaux. For 10 points each:

[H] Name this conflict. Another artist was inspired by the cyclorama form to create installations of cut-outs that highlight gruesome acts of violence perpetrated during this war.

ANSWER: American **Civil War** (Mark Bradford's piece is titled *Pickett's Charge*.)

[E] Kara Walker's art fuses the cyclorama with this technique, which renders the profiles of figures as a solid black cut-out against a white background.

ANSWER: **silhouette**

[M] A series of prints by Walker reinterpret a "Pictorial History of the Civil War" created by this publication, which featured illustrations of the front line of the Civil War by Winslow Homer.

ANSWER: **Harper's Weekly** [reject "Harper's Magazine" or "Harper's Bazaar"]

<R. Keyal, Painting and Sculpture>

17. A woman nicknamed La Corregidora ("kor-eh-hee-DOR-ah") for her husband's administrative position organized secret meetings for independence activists such as Ignacio Allende and this man. For 10 points each:

[H] La Corregidora's warning helped this man avoid capture by Spanish authorities, enabling him to release local prison inmates the night before celebrating Mass.

ANSWER: Miguel **Hidalgo** y Costilla ("ee-DAHL-go ee ko-STEE-yah") [or Father **Hidalgo**]

[M] The warning enabled Hidalgo to give this speech, generally considered the beginning of the Mexican independence movement.

ANSWER: Grito de **Dolores** [or Cry of **Dolores**]

[E] Due to her republican ideals, La Corregidora refused a position offered by Agustín de Iturbide ("ee-tur-BEE-day"), the first person to hold this office. The second and last holder of this office was the Austrian-born Maximilian I.

ANSWER: **Emperor** of Mexico [or **Emperador** de México]

<Raje, World History>

18. One poem claims that "No language is old—or young—beyond [this language]." For 10 points each:

[E] Name this language. That poem concludes that its poet is "waging a war (no, *jung*,) beyond" this colonial language of Kenya, which Ngũgĩ wa Thiong'o ("GOO-ghee wah thee-ONG-oh") renounced in favor of Kikuyu in "Decolonizing the Mind."

ANSWER: **English**

[H] "Beyond English" is a poem by this author, who advocated free verse by arguing "surely one should write in forms to save oneself *from* Western civilization." This Kashmiri-American poet wrote the poem "Tonight."

ANSWER: Agha **Shahid** Ali [or Agha Shahid **Ali**] (That passage is from *Ravishing DisUnities*.)

[M] The main form Ali championed to "save himself" from the West was this Persianate one that he used for "Tonight" and "Beyond English." This form consists of rhyming couplets containing a repeated *radif*, or refrain.

ANSWER: **ghazal** ("GUH-zall")

<Karim, Poetry>

19. Ernst Chladni (“KLAHD-nee”) visualized these phenomena by sprinkling sand onto metal plates and then stroking the plates with a violin bow. For 10 points each:

[M] Name these fundamental vibrations of a coupled oscillator that are obtained from eigenvector analysis.

ANSWER: **normal modes**

[H] The number of concentric circles in each normal mode for a circular plate is given by one of these functions. The zeroth (“zero-ith”) order one of these functions gives the amplitude of vibration of the skin of a drum.

ANSWER: **Bessel** functions of the **first kind** [prompt on **Bessel** functions]

[E] Chladni’s law sets this quantity proportional to the square of the sum of the number of nodal diameters and twice the number of concentric circles. This quantity equals one over the period of oscillation.

ANSWER: **frequency**

<Settle, Physics>

20. Most chapters of Annie Proulx’s (“proo’s”) novel *The Shipping News* are titled for these things and open with illustrations drawn from Clifford W. Ashley’s encyclopedic “Book” of them. For 10 points each:

[M] Name these things, which Ashley’s book contrasts with hitches, bends, and splices. The Jones and Alexander polynomials are invariants in a subfield of topology that studies these things.

ANSWER: **knots** [accept *The Ashley Book of Knots*]

[E] Besides being an author and illustrator, this was Ashley’s primary profession. The *Book of Knots* opens by calling this profession the most reliant on knots, which it uses for rigging.

ANSWER: **sailor** [accept word forms; accept equivalents such as **mariner** or **seafarer**]

[H] Ashley names a stopper knot that takes on this shape. In knot theory, this is the simplest nontrivial knot and the unique prime knot with minimal crossing number.

ANSWER: **trefoil** knot [or **threefoil** knot; prompt on **overhand** knot]

<Morrison, Other Academic>