

2022 Winter Closed

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Packet F

Tossups

1. **An enzyme that forms this molecule enters cells alongside a “lethal” endopeptidase via channels formed by the “protective antigen” of *Bacillus anthracis*. The activities of nearly all isoforms of an enzyme that forms this molecule increase with the reversible binding of forskolin. After its B subunit binds to the GM1 ganglioside, the A subunit of cholera toxin activates an enzyme that forms this molecule. In a low glucose state, increased levels of this compound allosterically bind the (\*) catabolite activator protein to induce translation. Beta-blockers decrease the activity of an enzyme that forms this molecule by inhibiting the activation of the G<sub>s</sub> (“G-sub-S”) protein. This molecule is the most common substrate of phosphodiesterases, and is responsible for activating protein kinase A. For 10 points, what second messenger is formed by the enzyme adenylyl cyclase?**

ANSWER: **cAMP** [or **cyclic AMP**; or **cyclic adenosine monophosphate**]

<Naveh-Benjamin, Biology>

2. **A politician from this country and his health ministers will be tried for the death of Mamerita Mestanza in a forced sterilization program. A politician from this country defamed an opponent by linking them to the group responsible for the San Miguel del Ene (“EN-ay”) attack. For human rights violations such as the kidnappings of journalist Gustavo Gorriti and businessman Samuel Dyer, a politician from this country was sentenced to 25 years in prison. Rudy Giuliani served as an advisor during the 2011 campaign for the presidency of a politician from this country, who has lost three presidential elections in a row as the candidate for (\*) Fuerza Popular (“FWAIR-sah poh-poo-LAHR”). On Christmas Eve 2018, Pedro Pablo Kuczynski granted a later-overturned medical pardon to a politician from this country. This country’s 2021 presidential election was won by Pedro Castillo. For 10 points, what country is home to politicians Keiko and Alberto Fujimori?**

ANSWER: **Peru** [or Republic of **Peru**; or República del **Perú**]

<Settle, Current Events>

3. **In this decade, Black servicemen turned on their superiors during the Townsville Mutiny. The serial killer Eddie Leonski, known as the “Brownout Strangler,” was active in this decade and had previously served at Melbourne’s Camp Pell. In this decade, soldiers who fought the so-called “Battle of Brisbane” were described as “over-paid, over-sexed, and over here.” In this decade, “the strivers, the planners, the ambitious ones” were praised in the (\*) “Forgotten People” speech. In this decade, Papua New Guinean laborers along the Kokoda Track were given the nickname “fuzzy-wuzzy angels.” In this decade, John Curtin succeeded Robert Menzies as prime minister, and Australia faced its worst domestic attack when 242 planes bombed Darwin. For 10 points, name this decade during which Australia fought in World War II.**

ANSWER: **1940s** [prompt on the **40s**]

<Parameswaran, Other History>

4. In a novel, a teen from this country uses a gramophone box as a suitcase and trades a copy of *Faust* for a lice comb. A perennial Nobel favorite from this country used the wings and body of a butterfly to title the novels in his trilogy *Blinding*. A playwright born in this country created a man who sees a rally for Ma Piper while on his way to show Edward's briefcase to the police. Leo Auberg and other ethnic Germans from this country are sent to a gulag in the novel (\*) *The Hunger Angel* by an author born here, Herta Müller. In a play by an author born in this country, a logician uses a syllogism to prove that Socrates was a cat before a woman's cat is killed by an "Asian" or "African" creature. That play by an author from this country ends as a man shouts, "I'm not capitulating!" and refuses a transformation. For 10 points, name this birth country of the author of *The Killer* and *Rhinoceros*, Eugène Ionesco ("oo-ZHEN ee-oh-NESS-ko").

ANSWER: **Romania** (The author in the second sentence is Mircea Cărtărescu.)

<Morrison, Misc. Literature>

5. *Two answers required.* When one of these two composers wrote a set of eight fantasies for the other, the other only complimented its cover design. One of these composers titles a left-hand-arpeggio-filled A-flat major movement by the other that follows the movement "Chiarina" ("kee-ah-REE-na") in its suite. In an article, one of these composers restated the other's remark that "certain poems" by Adam Mickiewicz ("ah-DOM meets-k'YEV-itch") inspired a set of four works by that other composer. In a review written by one of these composers about the other composer's variations on (\*) "Là ci darem la mano" ("LAH chee dah-REM la MAH-noh"), the character Eusebius ("oy-ZAY-bee-us") exclaims "Hats off gentlemen, a genius!" These two composers respectively dedicated their *Kreisleriana* and second ballade to each other. For 10 points, name these two Romantic-era pianists who composed *Carnaval* and the "Revolutionary Étude."

ANSWER: **Robert Schumann** AND Frédéric **Chopin** [or **Robert Alexander Schumann** AND Frédéric François **Chopin** (or Fryderyk Franciszek **Szopen**); prompt on answers that don't give the first name or initial of **Schumann**]

<Egol, Classical Music>

6. This organization passed the 1948 "Sanity Code" that defined its principles, though a group of constituents called the "Sinful Seven" did not immediately implement the code. In 1984, John Paul Stevens wrote a dicta that has protected this organization against claims that it violates the Sherman Act. In a 2021 opinion, Brett Kavanaugh wrote that this organization's "business model would be flatly illegal in almost any other industry in America." A 2021 Supreme Court case brought by Shawne Alston against this organization resulted in a 9-0 decision ending its policy of not allowing payments for (\*) name, image, and likeness. A case concerning whether this organization should compensate those appearing in a series of video games was brought against it by former UCLA basketball star Ed O'Bannon. For 10 points, name this organization that oversees US college sports.

ANSWER: **NCAA** [or **National Collegiate Athletic Association**]

<Raje, Other Academic>

7. *Note to moderator: Read the answer carefully.* **An astronomer best known for supporting this political cause possibly served as a French spy while building an observatory in Tahiti. This cause gained surprise traction after Rudolf Gajda (“GUY-dah”) commanded troops to victory at the Battle of Zborov. Simultaneous declarations in the town of Martin and Washington, D.C., formally acknowledged this cause. At his farm in Stamford, Gutzon Borglum sheltered members of a World War I volunteer “legion” that supported this cause and that would later trek through (\*) Siberia during the Russian Civil War. Milan Štefánik (“sh’teh-FAH-nik”), Edvard Beneš (“BEN-esh”), and Tomáš (“toh-MAHSH”) Masaryk were the three most prominent supporters of this cause, which was achieved when Charles I of Austria-Hungary agreed to dissolve the Kingdom of Bohemia in October 1918. For 10 points, give this political goal that led to the creation of a European country named after two Slavic ethnicities.**

ANSWER: **independence** of **Czechoslovakia** [accept any answers indicating the **creation** of a **Czechoslovak** state; accept **independence** for **Czechs**; accept **independence** for **Slovaks**; reject “independence of the Czech Republic” or “independence of Slovakia”]

<Raje, European History>

8. **Charge carriers behave according to this model in heterostructures of gallium arsenide layers interleaved between aluminum arsenide layers. In the Brus equation, the band gap plus a term similar to this model’s energy gives the emission energy of confined electron-hole pairs. The wave function of this model can be written as a linear combination of the momentum eigenfunctions “ $e$  to the  $ikx$ ” and “ $e$  to the negative  $ikx$ .” A spherical version of this model is used to determine the properties of (\*) quantum dots. If this model is centered at the origin, then the wave function for the second energy state is a standing wave with a node at the origin. This model’s potential is zero in a given region, but infinite everywhere else. For 10 points, name this quantum model in which a small region is surrounded by insurmountable barriers.**

ANSWER: **particle in a box** [or **infinite square well** or **infinite potential well**; prompt on **quantum well** or **potential well**] (The first sentence refers to quantum-well semiconductor devices.)

<Settle, Physics>

9. **This author declared, “Myself unto myself will give / this name, Katharsis Purgative” in his poem “The Holy Office.” In a novel by this author, a riddle beginning “The cock crew / The sky was blue” is said to refer to “the fox burying his grandmother under a holly bush.” This author combined words for thunder in several languages to construct one of his hundred-letter “thunder words,” which appear in a novel that describes a “commodius vicus of recirculation... from (\*) swerve of shore to bend of bay.” The initials ALP refer to Anna Livia Plurabelle in a novel by this author that coined the word “quark.” A novel by this author begins mid-sentence with the phrase “riverrun, past Eve and Adam’s,” and another concludes with a soliloquy ending “yes I said yes I will yes,” narrated by Molly Bloom. For 10 points, name this Irish author of *Finnegans Wake* and *Ulysses*.**

ANSWER: James **Joyce**

<French, Long Fiction>

10. These people are viewed as “catalysts” who create social situations in a relational theory proposed by Nicolas Bourriaud (“boor-YO”). R. G. Collingwood emphasized the collaborative nature of these people, whom he defined as individuals who “come to know... [their] own emotion.” Richard Wollheim explained that these people externalize their intuitions in his summary of the expressivist “ideal theory” proposed by (\*) Benedetto Croce (“KRO-chay”). Arthur Danto propounded the “institutional theory” by asserting that the work of these people is only realized within the context of a larger “world.” In a 1934 book, John Dewey considered the products of these people “as Experience.” Objects produced by these people lose their aura when they undergo “Mechanical Reproduction,” according to Walter Benjamin (“BEN-ya-meen”). For 10 points, the works of what people are analyzed in aesthetics?

ANSWER: **artists** [accept specific kinds of artists like **painters** or **sculptors** or **composers**; prompt on artworld]  
<Naveh-Benjamin, Philosophy>

11. A “double vision” of this domain is compared to Ludwig Wittgenstein’s duck-rabbit illusion in the opening of Wendy Doniger’s *The Hindus*. *Kheer* is left out to be sweetened by a god of this domain on a holiday named for Sharad. A god of this domain eloped with the wife of the teacher of the devas, Brihaspati. A god of this domain was cursed for favoring Rohini over his 26 other wives. It is forbidden to view this domain on Chaturthi because when Ganesh fell off his mouse, a god of this domain (\*) laughed at him. The Ganga flows through Shiva’s matted hair, which is often decorated with this object. This member of the Navagraha is celebrated on Purnimas. The Hindu god of this object was syncretized with the Vedic god Soma. A Jataka tale explains how, for 10 points, what astronomical object represented by Chandra got its rabbit-shaped mark?

ANSWER: **moon** [or **Chandra** until read; accept **Soma** until read]  
<A. Keyal, Religion>

12. This type of compound is placed on the corners that are [emphasize] *not* connected by the diagonal of a More O’Ferrall–Jencks plot. In the Wittig reaction, this type of compound converts between diastereomers in a phenomenon called stereochemical drift. Experiments on a compound of this type that has a zwitterionic carbonyl oxide structure infer its concentration using the concentration of 1,2,4-trioxolanes. This type of compound has a lifetime longer than a molecular vibration and corresponds to a local minimum on a (\*) potential energy surface. This type of compound is represented by a potential well in the middle of a reaction coordinate diagram. Carbocations (“carbo-cat-eye-ons”) and radicals are examples of this type of compound that is formed in each step of a multi-step reaction. For 10 points, what type of species is formed between reactants and products?

ANSWER: reaction **intermediate** [accept reactive **intermediate**; prompt on oxaphosphetanes after “Wittig reaction” is read by asking “what is the kinetic role of the oxaphosphetane in the Wittig reaction?”] (The third sentence refers to Criegee’s mechanism for ozonolysis. The fourth sentence comes from the IUPAC Gold Book definition of an intermediate.)  
<Settle, Chemistry>

13. An environmental journalist from this country named Darryl D'Monte documented the protests against a proposed hydroelectric dam in Silent Valley. John Ruskin's tract *Unto This Last* inspired the nonviolent Chipko movement in this country. This country's Bishnoi sect pioneered tree-hugging as a form of protest. An environmental disaster documented in *A Prayer for Rain* prompted this country to call for the extradition of CEO (\*) Warren Anderson. The world's tallest statue, the Statue of Unity, overlooks a dam in this country whose construction was protested by Adivasis ("AH-dee-VAH-sees"). Thousands of people in this country were exposed to methyl isocyanate due to a leak at a Union Carbide plant in Bhopal. For 10 points, name this country whose environmental movement is supported by author Arundhati Roy.

ANSWER: **India** [or Republic of **India**; or **Bharat** Ganrajya]

<Parameswaran, World History>

14. One should accept this movement's "tremendous truth... Leaving all those / —Knick-knacks.—", according to a set of "aphorisms" from the collection *The Lost Lunar Baedeker* ("BAY-duh-ker"). This movement's founder sought to "destroy syntax" by writing "words in freedom" like his concrete sound poem *Zang Tumb Tumb*. This movement's Hylaea group experimented with sound by creating the language *zaum*, delivered "A Slap in the Face of Public Taste," and wrote poems like "Backbone Flute" and (\*) "A Cloud in Trousers" as part of its Russian offshoot. This movement's poetry is said to be a "violent assault" of "courage, audacity and revolt" in a 1909 text that calls a "roaring motor car" more beautiful than the "Victory of Samothrace." For 10 points, the poet Filippo Marinetti wrote the manifesto to what movement that celebrated speed and technology?

ANSWER: **Futurism** [accept Russian **Futurism** or Italian **Futurism**; accept "Aphorisms on **Futurism**"] (*The Lost Lunar Baedeker* is by Mina Loy. "Backbone Flute" and "A Cloud in Trousers" are by Vladimir Mayakovsky.)

<R. Keyal, Poetry>

15. An instrument that accompanies singing in this language is a 78-stringed zither whose name translates to English as "canon." Over 4 million people attended the 1975 funeral of a singer in this language who inspired emotional ecstasy in listeners with songs that lasted for hours. Along with French, this language is used by *cheb* singers to perform *rai* music. The line dance *dabke*, whose name comes from a word in this language, is accompanied by instruments like a double-piped clarinet and (\*) tambourine. Traditionally, music in this language is played during a dance whose performers wear zills, or finger cymbals, and execute shimmies. Songs in this language are accompanied by a goblet-shaped drum called a *doumbek* or *darbuka*, as well as a pear-shaped lute known as an *oud*. The name of the modal system *maqam* derives from, for 10 points, what language that accompanies belly dancers in Egypt?

ANSWER: **Arabic** [or al-**arabiyya**; or **arabi**; accept Moroccan **Arabic** or **Darija** or Egyptian **Arabic** or **Masri**; prompt on specific dialects like **Moroccan** or **Egyptian** that do not mention "Arabic"] (The instrument is the *qanun*.)

<Golden, Other Arts>

16. Fuwaad ibn Abbas illustrates the futility of this action by narrating tales about a weaver and a “fortunate rope-maker” in the story “The Merchant and the Alchemist’s Gate.” A 130-year-old man nicknamed for performing this action reveals his fraud to a reporter in the story “The Toynbee Convectoor.” After performing this action, the protagonist of another story learns that Deutscher, not Keith, has won the election and hears Travis’s rifle make the title (\*) noise. While doing this action to go on a safari, Eckels accidentally kills a butterfly in Ray Bradbury’s story “A Sound of Thunder.” After the unnamed protagonist of an 1895 book performs this action, he saves Weena, an Eloi, from ravenous Morlocks. For 10 points, name this action undertaken by a Victorian scientist using a “machine” in an H. G. Wells novella.

ANSWER: time travel [or equivalents such as going to the past or going to the future; prompt on safari until read by asking “by what means?”]

<Parameswaran, Short Fiction>

17. After this man moved to Montreat (“mon-treet”), North Carolina, the town received some two million telegrams from supporters of Barry Goldwater, who unsuccessfully sought this man’s endorsement. After William Randolph Hearst attended one of this man’s speeches in disguise, he reportedly told all his editors to “puff” him. This man responded to complaints about *The Washington Post* by calling Jewish journalists a “synagogue of Satan” in declassified (\*) Nixon Tapes. This man recounts partnering with Cliff Barrows to found the radio program *Hour of Decision* in his autobiography *Just as I Am*, a phrase he frequently repeated during speeches. This “Great Legitimater” claimed to have influenced the decision to send federal troops to protect the Little Rock Nine. For 10 points, name this Southern Baptist evangelist who held audiences with twelve sitting US presidents.

ANSWER: Billy Graham [or William Franklin Graham Jr.]

<Suh, American History>

18. An American professional organization of this field condemned its members’ involvement in the US Army’s HTS program in Afghanistan. A Herbert Lewis essay on the “Misrepresentation of [this field] and its Consequences” argues that critics of this field have invented a version of it that never existed. That essay takes issue with Johannes Fabian’s (“FAH-bee-ahn’s”) assertion that this field’s work takes subjects “out of (\*) time” and “makes its object.” A “processual” version of a [emphasize] *subfield* of this field was introduced by Lewis Binford, who also wrote on “Archaeology as [this field].” A member of this field borrowed Gilbert Ryle’s term “thick description” to describe his practice of it. Postcolonialists have referred to this field’s practitioners as “handmaidens of imperialism” due to its roots in colonial studies of “primitive” subjects. For 10 points, ethnography is the primary method of what field that studies human society and culture?

ANSWER: anthropology [accept anthropologists or word forms; accept ethnography or word forms until read; prompt on archaeology or word forms by asking “archaeology is a subfield of what broader field?”]

<Karim, Social Science>

19. Henri Guérard (“gay-RARR”) looks behind the artist’s sister Jeanne in a painting set in an “Italian” one of these places by Eva Gonzalès. Near the end of “Modernity and the Spaces of Femininity,” Griselda Pollock notes how women in these places became spectacles by citing a painting that shows a spying flâneur (“fla-NURR”) in the background. Nini Lopez first modeled for Pierre-Auguste Renoir for a painting depicting her wearing a black-and-white dress in one of these places. Mary Cassatt painted her sister using a pair of (\*) binoculars in one of these places. In 1880, an artist created a wax sculpture of Marie van Goethem (“GUH-tem”), a 14-year-old worker at one of these places. Marc Chagall painted the ceiling of Paris’s largest one of these locations, which was designed by Charles Garnier. For 10 points, Edgar Degas and other impressionists painted what venues where ballets are staged?

ANSWER: **theater** [accept **opera houses**; accept **ballet** until read; accept **loges**, **theater** boxes, or **opera** boxes; prompt on **boxes**; prompt on **balcony**] (The paintings are *A Loge at the Théâtre des Italiens* by Eva Gonzalès, *The Loge* by Pierre-Auguste Renoir, and *In the Loge* by Mary Cassatt.)

<Parameswaran, Painting and Sculpture>

20. If an object described by this adjective is trivial, then the corresponding manifold is called parallelizable. A Riemannian (“ree-MAHN-ee-in”) metric is a collection of inner products that each act on a space described by this adjective. For a point  $p$  on a differentiable manifold, equivalence classes of curves that pass through  $p$  define a space described by this adjective, which is isomorphic to Euclidean space. The integral of the norm of a vector described by this adjective gives the (\*) arc length of a parametrized curve. This adjective describes the first vector in the Frenet–Serret (“fruh-NAY say-RAY”) frame, which forms an orthogonal basis with the normal and binormal vectors. The gradient vector is perpendicular to a plane described by this adjective. For 10 points, a function’s derivative gives the slope of a line described by what adjective, which touches a curve at a point?

ANSWER: **tangent** [accept **tangent** bundle or **tangent** space or **tangent** vector or **tangent** plane or **tangent** line] (The first clue refers to a tangent bundle.)

<Morrison, Other Science>

## Bonuses

1. *Two answers required.* One of these authors lambasted a type of idolatry named for the other in the three-part preface to his *Three Plays for Puritans*. For 10 points each:

[H] Name these two authors who feature in a 10-minute Punch-and-Judy style puppet show from 1949 in which they beat up one another in a feud to prove whose plays are better.

ANSWER: George Bernard **Shaw** AND William **Shakespeare** [accept in either order; prompt on *Shakes versus Shav*]

[E] In a rare moment of “Bardolatry,” Shaw’s preface calls Lear a masterpiece, unlike this “failure” of a character. He’s not Mark Antony, but the *Three Plays for Puritans* contains a play about this man and his lover Cleopatra.

ANSWER: Julius **Caesar** [or Gaius Julius **Caesar**; accept **Cassar**; accept **Caesar and Cleopatra**]

[M] In another Shaw play, Shakespeare apologizes for “potboilers” like *As You Like It* after failing to woo Queen Elizabeth when he mistakes her for this woman. A poem likens this woman’s hair to “black wires.”

ANSWER: **Dark Lady** [accept *The **Dark Lady** of the Sonnets*] (That poem is Shakespeare’s Sonnet 130.)

<R. Keyal, Drama>

2. Antoine-Augustin Parmentier went to great lengths to popularize this good in France, even having Louis XVI (“the sixteenth”) pose with it on his navel. For 10 points each:

[M] Name this crop, which was widely grown in France despite fears that it caused leprosy. This crop and plums provide alternate names for the War of the Bavarian Succession.

ANSWER: **potatoes** [or *Solanum tuberosum*; accept **Potato War** or **Kartoffelkrieg**]

[E] This king ordered the mass cultivation of potatoes during a 1774 famine, leading to his nickname of *Der Kartoffelkönig* (“dair kar-TOFF-full-kur-nish”). This “enlightened despot” led Prussia during the mid-18th century.

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

[H] This historian argued that the potato was crucial in Europe’s domination of 400 years of world history in a 1999 paper. This author of *The Rise of the West* coined the term “gunpowder empires” with Marshall Hodgson.

ANSWER: William Hardy **McNeill**

<Parameswaran, European History>

3. LNAPLs move downward through this region until they reach its lower boundary, where they begin to spread laterally. For 10 points each:

[H] Name this region of the terrestrial subsurface. Air sparging forces contaminants into this region, where soil vapor extraction wells can then remove the contaminants.

ANSWER: **vadose** zone [or **unsaturated** zone]

[E] Contaminants must have this property for soil vapor extraction to be an effective remediation method. Chemicals with this property readily vaporize.

ANSWER: **volatile** [or **volatility**]

[M] Under significant head pressure, this structure can be depressed by LNAPLs, or light non-aqueous phase liquids. The capillary fringe extends upward from this structure that separates the unsaturated and saturated zones.

ANSWER: **groundwater table**

<Settle, Other Science>



4. David Bordwell's *The Rhapsodes* ("RAP-sodes") emphasizes how James Agee's ("AY-jee's") film criticism in *The Nation* and *Time* paved the way for Pauline Kael and Andrew Sarris. For 10 points each:

[M] Agee's *Life* profile of this "Undirectable Director" led Sarris to quip that Agee "canonized [him] prematurely." Agee later wrote the screenplay to *The African Queen*, a film by this director of *The Maltese Falcon*.

ANSWER: John **Huston** [or John Marcellus **Huston**]

[H] Railing against critics, Agee wrote a three-part defense of the film *Monsieur Verdoux*, in which this actor uncharacteristically played a Parisian bank teller who marries and murders rich wives to collect their money.

ANSWER: Charlie **Chaplin** [or Charles Spencer **Chaplin**]

[E] Critics preferred Chaplin's work in this genre, whose "Greatest Era" titles a celebrated 1949 *Life* article by Agee that discusses the silent slapstick films of Chaplin, Harold Lloyd, and Buster Keaton.

ANSWER: **comedy** [accept "**Comedy**'s Greatest Era"; accept silent **comedy** or slapstick **comedy**]

<R. Keyal, Other Arts>

5. In Mary Douglas's *Purity and Danger*, a chapter titled for the "abominations" of this Biblical book analyzes the origins of the dietary rules outlined in its "holiness code." For 10 points each:

[E] Name this third book of the Old Testament, whose emphasis on cleanliness is linked to completeness in that Douglas work.

ANSWER: Book of **Leviticus** [or *Vayikra*; accept "The Abominations of **Leviticus**"]

[M] Douglas's book *Leviticus as Literature* suggests that the three sections of Leviticus map to the three parts of this structure. Leviticus opens by describing an offering at this portable structure, which contained the Holy of Holies.

ANSWER: the **Tabernacle** [or the **Tent of the Congregation** or the **Tent of Meeting**; or *mishkan*]

[H] Douglas credits her idea to this rabbi, whose Kabbalistic commentaries on the Torah compared the Tabernacle to Mount Sinai. This rabbi rejected Maimonides's views on sacrifice and theorized a ten-dimensional universe.

ANSWER: **Nachmanides** [or **Ramban**; or Moses ben **Nahman**; reject "Maimonides" or "Rambam"]

<R. Keyal, Religion>

6. This politician so detested Graham Sutherland's portrait of him that he had his wife burn it. For 10 points each:

[M] Name this politician. Yousuf Karsh described angering this politician by taking his cigar out of his mouth prior to taking a photo of him called *The Roaring Lion*.

ANSWER: Winston **Churchill**

[E] Sutherland was employed by Sir Kenneth Clark, who would later partner with this network to produce the TV series *Civilisation*. This largest broadcaster in the UK also produced Michael Wood's *Art of the Western World*.

ANSWER: **BBC** [or **British Broadcasting Corporation**]

[H] Clark also commissioned an artist with this surname for his painting *Totes Meer*, which depicts the snowy remains of WWII planes. Two British surrealists with this surname painted the devastation of World War I in the works *Menin Road* and *Over the Top*.

ANSWER: **Nash** [accept Paul **Nash** or John **Nash**]

<Parameswaran, Painting and Sculpture>

7. A poetry collection by Lucie Brock-Boido titled for these texts calls them “gracious, sometimes nearly erotic, worshipful documents” written by a “breathless renouncer.” For 10 points each:

[H] Name these three texts addressed to a mysterious figure that refer to their author in the third-person as “Daisy.” One of them opens, “If you saw a bullet hit a Bird – and he told you he was’nt shot – you might weep at his courtesy.”

ANSWER: **Master** letters [prompt on letters; prompt on, but DO NOT REVEAL, descriptions of letters written by Emily **Dickinson**]

[E] This reclusive poet may have written the Master letters for her friend Thomas Wentworth Higginson. She was nicknamed the “Belle of Amherst.”

ANSWER: Emily **Dickinson** [or Emily Elizabeth **Dickinson**]

[M] Judith Thurman compared the Master letters to a text by this Transcendentalist addressing Beethoven as her “master.” This first editor of *The Dial* expanded the essay “The Great Lawsuit” into her book *Woman in the Nineteenth Century*.

ANSWER: Margaret **Fuller** [or Sarah Margaret **Fuller** Ossoli]

<R. Keyal, Misc. Literature>

8. This organization’s head William Bratton used the “broken windows theory” to justify aggressive policies like “stop-and-frisk.” For 10 points each:

[E] Name this organization, one of whose members killed Eric Garner.

ANSWER: **New York Police** Department [or **NYPD**]

[M] This mayor established the Mollen Commission to investigate corruption in the NYPD. This first African-American mayor of New York City was accused of not properly responding to the Crown Heights riots.

ANSWER: David **Dinkins**

[H] Bratton also introduced this crime database to help police strategically allocate resources to fight crimes. Its accuracy in showing decreasing crime rates in New York City has been questioned due to data manipulation.

ANSWER: **CompStat** [or **COMP**uter **STAT**istics]

<Parameswaran, American History>

9. Robert Pindyck has claimed that integrated assessment models to estimate this quantity are “close to useless.” For 10 points each:

[H] Name this unobserved marginal impact, which a US Interagency Working Group currently estimates to be about 51 dollars. This quantity is estimated by William Nordhaus’s DICE and RICE models.

ANSWER: **social cost of carbon** [or **SCC**; prompt on descriptive answers such as the economic impact or cost of carbon emissions]

[M] Gilbert E. Metcalf’s book *Paying for Pollution* advocates a carbon tax to offset its social cost and critiques this alternative. In this approach, firms can buy and sell permits to each other, and they must surrender a permit for each unit of their emissions.

ANSWER: **cap and trade** [prompt on emissions trading]

[E] A carbon tax is a classic example of a Pigouvian tax meant to penalize one of these effects, which are harmful costs incurred by a third party due to one’s use or production of a good.

ANSWER: **negative externality** [prompt on externality]

<Evans, Social Science>

10. Block copolymers are used for drug delivery because they form these structures through self-assembly. For 10 points each:

[M] Name these structures that form readily above the Krafft temperature when substances like Triton-X100 and sodium dodecyl (“doh-DEH-sil”) sulfate are dispersed in water.

ANSWER: **micelles** (“my-SELLS”)

[E] Some blocks coalesce into domains resembling one of these materials in thermoplastic elastomers based on block copolymers. Silica makes up the most common of these brittle, amorphous, and transparent solids.

ANSWER: **glasses** [accept **glass** transition]

[H] Symmetric diblock copolymers undergoing this process on a microscale assume a lamellar structure. This process can be induced in polymer mixtures by a temperature jump into the area bounded by the spinodal curve.

ANSWER: **phase separation** [accept **phase segregation** or **demixing**; prompt on spinodal **decomposition** by asking “spinodal decomposition is one mechanism by which what process occurs?”]

<A. Keyal, Chemistry>

11. Scholars have cast doubt on a composer having this condition because his assignment of a circle of fifths on an instrument invented by Preston Miller could be inspired by theosophic theory. For 10 points each:

[E] Name this mental condition that led Alexander Scriabin to associate the pitch D with yellow and D-flat with dark purple.

ANSWER: **synesthesia** [accept sound-to-color **synesthesia**; accept **chromesthesia**]

[M] This synesthetic composer evoked Salvador Dalí’s melting clocks with differently set timepieces in works like *Poème symphonique* for 100 metronomes. This proponent of micropolyphony unknowingly had excerpts from his *Lux Aeterna* and *Atmosphères* featured in *2001: A Space Odyssey*.

ANSWER: György **Ligeti** [or György Sándor **Ligeti**]

[H] In a preface, this piece’s composer describes how its “blue-orange” chords were inspired by the Northern Lights. Two duet movements in this piece are dedicated to the “eternity” and “immortality” of Jesus.

ANSWER: **Quartet for the End of Time** [or **Quatuor pour la fin du temps**] (by Olivier Messiaen)

<Evans, Classical Music>

12. This language was used to document Spanish atrocities such as a massacre carried out by Pedro de Alvarado during a celebration honoring the speakers’ war god. For 10 points each:

[M] Name this language whose native speakers assisted Bernardino de Sahagún (“sah-ah-GOON”) in writing the Florentine Codex.

ANSWER: **Nahuatl** [prompt on **Aztec** or **Mexicano**]

[E] This conquistador contracted the scholar Francisco López de Gómara to write an account of his conquest of Tenochtitlan (“teh-nohch-teet-LAHN”).

ANSWER: Hernán **Cortés** [or Hernán **Cortés** de Monroy y Pizarro Altamirano]

[H] Responding to Gómara’s account, this associate of Cortés wrote a “True History” of the conquest many years after it. This man later served as governor in the capital of what is now Guatemala.

ANSWER: Bernal **Díaz** del Castillo

<Raje, Other History>

13. The Holman–Miller sign is present in a class of angiofibromas that present with frequent occurrences of these episodes. For 10 points each:

[H] Identify these episodes that typically originate from Kiesselbach’s plexus. They can be treated non-specifically with topical application of tranexamic acid.

ANSWER: **nosebleeds** [or **bloody noses**; accept **epistaxis** or **epistaxes**]

[M] Tranexamic acid acts by decreasing available plasmin levels, thereby preventing the breakdown of meshes of this protein, whose cross-linking is aided by Factor XIII. This protein is cleaved from its precursor by thrombin.

ANSWER: **fibrin** [or **Factor Ia**; reject “fibrinogen”]

[E] The fibrin mesh serves as the protective outer layer for blood clots by forming over a “plug” made of these cell fragments. They lack a nucleus and are much smaller than red blood cells.

ANSWER: **platelets** [or **thrombocytes**]

<Naveh-Benjamin, Biology>

14. The three-pupiled prophetess Fedelm sees the army of Queen Medb (“mayv”) “crimson-red from blood” because they will encounter this figure in battle. For 10 points each:

[E] Name this figure who seeks arms from his uncle Conchobar (“KON-koh-bar”) after hearing a prediction that he will achieve renown, despite being short-lived, if he does so. This Hound of Ulster fights in the Cattle Raid of Cooley.

ANSWER: **Cú Chulainn** (“koo KULL-en”)

[M] After sleeping with the Dagda, the Morrigan promises the Tuatha Dé Danann (“TOO-uh-huh day DAH-nan”) victory over these people. The Morrigan prophesies about the end of the world after these people, led by Balor, lose the Second Battle of Magh Tuireadh (“MOY TEE-rah”).

ANSWER: the **Fomorians** [or **Fomori** or **Fomóire** or **Fomhóraigh**]

[H] At the hostel of this figure, an old seeress casts the “evil eye” upon Conaire (“KO-na-ruh”) Mór and foretells his doom as he gradually breaks his taboos. Conaire Mór follows three men dressed in red and riding red horses to arrive at this figure’s hostel.

ANSWER: **Da Derga**

<Yang, Mythology>

15. A writer addressed this political party in a poem that ends, “You have made me indestructible because with you I do not end in myself.” For 10 points each:

[H] Identify this party that included three of its country’s four “great poets.” A poet from this party who won the 1971 Nobel Prize obliquely attacked a *creacionismo* opponent with the assertion, “The poet is *not* a little god.”

ANSWER: **Communist** Party of **Chile** [or the **Chilean Communist** Party; or the Partido **Comunista** de **Chile**; or the **PCCh**; prompt on **Communist** Party by asking “in which country?”]

[E] This poet’s election as senator and official entry into the Chilean Communist Party overlapped with his completion of “The Heights of Machu Picchu.”

ANSWER: Pablo **Neruda**

[M] Neruda was widely criticized for failing to condemn the foreign power that forced this writer to reject the 1958 Nobel Prize. This writer’s best-known poem opens, “My sister – Life’s overflowing today.”

ANSWER: Boris **Pasternak**

<Naveh-Benjamin, Poetry>

16. An essay on this phenomenon distinguishes between types that consider “man as man” and “man as citizen,” arguing that the latter type ought to take social roles into account. For 10 points each:

[M] Name this phenomenon that Moses Mendelssohn said “is to cultivation as theory generally is to practice.” Another essay describes this phenomenon as “man’s emergence from his self-imposed immaturity.”

ANSWER: **enlightenment** [or *Aufklärung*]

[E] This philosopher conceived of enlightenment as rejecting external authority in favor of one’s own intellect in his essay “What Is Enlightenment?” He also wrote *Critique of Pure Reason*.

ANSWER: Immanuel **Kant**

[H] This thinker argued that the rejection of divine authority implied by Enlightenment ideals would necessarily lead to violent conflicts like the French Revolution. This monarchist advocated papal authority in his ultramontanist (“ultra-MONT-uh-nist”) book *On the Pope*.

ANSWER: Joseph **de Maistre** (“duh MEH-struh”)

<Kulkarni, Philosophy>

17. This drug, which is briefly mentioned in *The Doors of Perception*, names a discredited 1950s hypothesis that claims that megadosing vitamin C can cure schizophrenia. For 10 points each:

[H] Name this drug that makes “pure mescaline seem like ginger beer” according to a scene in *Fear and Loathing in Las Vegas*. In 2020, YouTube videos of a 1992 Sisters of Mercy song titled for this purple drug were bombarded with comments due to conspiracy theories fueled by Liz Crokin.

ANSWER: **adrenochrome**

[E] Supposed adrenochrome harvesting by Hollywood elites, which is basically just blood libel, is part of the constellation of conspiracy theories that make up this far-right political movement that started on 4chan.

ANSWER: **QAnon**

[M] Many QAnon followers believe this movie purposely allegorizes adrenochrome harvesting. A simulation called Fizz and a huge render-farm were used to accurately model the fur of a protagonist of this 2001 animated movie, which had a prequel released in 2013.

ANSWER: **Monsters, Inc.**

<A. Keyal, Other Academic>

18. Answer the following about computational methods in condensed matter physics, for 10 points each.

[E] The Swendsen–Wang algorithm simulates systems near one of these points. Beyond this point for the liquid-vapor phase boundary, distinct liquid and vapor phases do not exist.

ANSWER: **critical** points

[M] Sample weights given by this model were generalized to avoid critical slowing down in an algorithm designed by Berg and Neuhaus. This model is an ensemble with constant particle number and volume in equilibrium with a heat bath.

ANSWER: **canonical** ensemble

[H] This function is computed by the Wang–Landau algorithm. For a 3D free electron gas with the dispersion relation “energy equals  $\hbar$  squared times  $k$  squared over twice the reduced mass,” this function goes as the square root of energy.

ANSWER: **density of states** [prompt on **DOS**; reject “density”]

<Settle, Physics>

19. “Autofiction,” which Serge (“sairzh”) Doubrovsky first used to describe his 1977 novel *Fils* (“feese”), has gained traction as an umbrella term for prose with an extreme autobiographical bent. For 10 points each:

[E] A quintessential example is Karl Ove Knausgård’s (“karl OO-veh k’NOUSE-gor’s”) six-book series of this title, centered on his relationship with his father. It shares its name with, and comments on, an autobiographical treatise by Adolf Hitler.

ANSWER: **My Struggle** [or **Min Kamp**; accept **Mein Kampf**]

[M] Siri Hustvedt, whose novel *Memories of the Future* has been labeled autofiction, is married to this author. Daniel Quinn is mistaken for a detective with this author’s name at the opening of his postmodern *New York Trilogy*.

ANSWER: Paul **Auster** [or Paul Benjamin **Auster**]

[H] This series is set in motion when its protagonist, a divorced writer based on the author, befriends a fellow passenger on a flight to Athens where she is teaching a writing workshop. This series concluded in 2018 with *Kudos*.

ANSWER: **Outline** trilogy (by Rachel Cusk)

<R. Keyal, Long Fiction>

20. While a part of the *kilti libete* cultural revival, this author published a history of Haiti based on traditional storytelling and Voodoo cosmology. For 10 points each:

[H] Name this Haitian-American anthropologist who criticized how anthropologists insert non-white races into the “Savage Slot” in his work *Global Transformations*.

ANSWER: Michel-Rolph **Trouillot** (“mee-SHELL rolf troo-YO”)

[E] Trouillot used his experience documenting Haitian history to trace the rise of this Haitian political family. This family included “Papa Doc” and “Baby Doc,” both of whom ruled Haiti as dictators in the 20th century.

ANSWER: **Duvalier** [accept François “Papa Doc” **Duvalier** or Jean-Claude “Baby Doc” **Duvalier**]

[M] C. L. R. James wrote this book that emphasizes Toussaint L’Ouverture’s (“too-sant loo-vair-TOOR’s”) efforts in leading a successful Haitian Revolution.

ANSWER: *The **Black Jacobins*** [or *The **Black Jacobins**: Toussaint l’Ouverture and the San Domingo Revolution*]

<Parameswaran, World History>