



ACADEMIC COMPETITION FEDERATION

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FINALS 1

Packet by

The Editors

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TOSSUPS

1. This treaty's Article 119 establishes the "principle of equal remuneration" for male and female workers. Like an agreement signed the previous year at Val Duchesse ("d'yoo-SHESS"), this treaty implemented the recommendations of the Spaak Report regarding the hydrocarbon sector. The 50th anniversary of this treaty was commemorated by the Berlin Declaration, which asserted the importance of a "renewed common basis" in anticipation of several referenda. Building on the Schuman declaration made earlier in the same decade, this treaty established principles collectively called the Four Freedoms: free movement of goods, capital, services and labor. This treaty was developed concurrently with the Euratom ("yoor-uh-TOM") Treaty and supplanted in 1992 by the Maastricht ("MAH-strict") Treaty. For 10 points, name this treaty which established the European Economic Community, signed in an Italian city.

ANSWER: Treaty of **Rome** [or Treaties of **Rome**; accept **EEC** Treaty or **European Economic Community** Treaty before "European Economic Community"; prompt on **Euratom** treaty]

<European History>

2. A jazz musician with this first name began and ended a self-titled album with his compositions "Temperance" and "Pot Luck." A trio led by a musician with this first name was joined by Wes Montgomery on the album *Smokin' at the Half Note*. A musician with this first name used Kenny Kirkland as pianist on his first four albums, one of which includes the tracks "Phryzzinian ("frizz-INN-ian") Man" and "Aural Oasis." A pianist with this first name replaced Bill Evans on the track "Freddie Freeloader" from *Kind of Blue*, and led the self-titled album *Kelly Blue*. A musician with this first name was bandleader on the album *Black Codes (from the Underground)* and told the story of the slaves Jesse and Leona in a Pulitzer-winning oratorio. For 10 points, give this first name of the composer of *Blood on the Fields*, a trumpeter who serves as artistic director of Jazz at Lincoln Center.

ANSWER: **Wynton** [accept **Wynton** Kelly or **Wynton** Marsalis]

<Other Fine Arts>

3. In a story by this author, a debate breaks out at the Congress of Vipers about whether to ally with snakes against Man. A set of aphorisms by this author begins, "Believe in a master – Poe, Maupassant ("mo-pah-SAWN"), Kipling, Chekhov – as in God himself." A story by this author opens by describing a woman's honeymoon as "one long, cold shudder." In another story by this author, a couple argue about whether it is the mother's tuberculosis or the father's hereditary syphilis that have caused their four sons to become mentally disabled. This author of *Ten Rules for the Perfect Storyteller* set many of his stories in the Misiones ("mee-S'YOH-ness") where he lived. In a story by this author, Jordan's wife Alicia is killed by a blood-sucking parasite living in the title bed accessory. For 10 points, "The Decapitated Chicken" and "The Feather Pillow" are among the horror stories of what Uruguayan author?

ANSWER: Horacio **Quiroga** ("oh-RAHSS-yo kee-RO-gah")

<World Literature>

4. The fidelity of these objects is measured by Sergio Boixo (“BOY-shoh”) et al.’s cross-entropy benchmarking. To stand in for a typical one of these objects, John Martinis’s group often chooses an iSWAP (“I-swap”) with a controlled-phase interaction. These objects act incorrectly at a rate that must be below a “threshold” for toric codes to be fault-tolerant. The Solovay–Kitaev (“kih-TAH-yeff”) theorem limits how many of these objects are needed when a universal set of them is available. Since these objects are unitary, they are reversible, but they can simulate classical irreversible counterparts with the aid of ancillas (“ann-SILL-luzz”). Examples of these objects used by the Deutsch–Jozsa (“JOH-zuh”) algorithm include the Hadamard, which maps single states to superpositions, and the controlled-NOT (“controlled-not”), which acts as an XOR (“X-or”). For 10 points, name these logic operations of quantum computing that act on qubits (“Q-bits”).

ANSWER: quantum **gates** [or quantum logic **gates**; prompt on quantum **circuits** by asking “What is a single step in that system called?”; prompt on quantum computing **operations** by asking “What is the field-specific term for them?”; reject “qubits”]

<Physics>

5. To describe objects that are good at being themselves *qua* (“kwah”) themselves, this philosopher coined the term “goodness-fixing kind.” This philosopher attacked the claim that it is irrational to believe moral judgments to be true, dubbing it the “No-Reason Thesis.” An article by this philosopher contrasts a deaf man who does not violate a married couple’s right to privacy by turning up his hearing aid to overhear their fight, with a hearing man who violates their rights by aiming an amplifier at them. This author of *The Realm of Rights* created a thought experiment in which defective window screens allow “people-seeds” to float in. She added the case of shoving a fat man off a footbridge in her update to Philippa Foot’s Trolley Problem. For 10 points, name this philosopher who imagined a violinist plugged into your kidneys in her article “A Defense of Abortion.”

ANSWER: Judith Jarvis **Thomson** (“Goodness-fixing kind” is from *Normativity*, which was not title-dropped since it is such a generic-sounding title.)

<Philosophy>

6. *Note to players: Two answers required.* Eric Sams claimed that one of these composers is represented by the fortissimo descending “A, G, F, E” melody that opens a C-major piano piece by the other composer. These two composers’ only joint publication was when each wrote six settings of Friedrich Rückert (“ROO-kurt”) poems that were sold as a set of twelve. The older of these composers helped orchestrate the younger’s only piano concerto in 1835, and the younger of these two premiered the piano part in the older’s only piano concerto in 1845; both of those piano concertos are in A minor. One of them may have used a cryptogram for the other’s name in the main theme of his D-minor fourth and final symphony. One of them depicted the other as “Chiarina” (“k’yah-REE-nah”) in a collection of piano miniatures and used a mazurka (“muh-ZUR-kuh”) by her in his *Davidsbündlertänze* (“DAH-vits-BOONT-ler-TEN-tsu”). For 10 points, name this husband and wife, one of whom depicted the other in *Carnaval*.

ANSWER: **Robert Schumann** and **Clara Schumann** [prompt on **Schumanns**; accept Clara **Wieck** (“VEEK”) instead of Clara Schumann]

<Classical Music>

7. This Chinese word names a class of ceremonial objects similar to the *qī* (“chee”) which were used as symbols of royal authority and as battle-axes. A woman born Aqing (“ah-ching”) was found to be the greatest sword fighter in the kingdom of this name ruled by king Goujian (“goh-j’yen”) from the city of Kaiji. Sheared hair was one of the stereotypes of the “hundred tribes” known by this name in ancient China, who were ruled by the Zhao (“jao”) dynasty in a kingdom whose name prefixes this Chinese word with the word *nán*. *The Art of War* describes the bitter rivalry between those people of this name and their northern neighbors from Wu. The name of the Vietnamese people derives from this word which, in Ancient China, broadly denoted the coastal peoples south of the Yangtze (“YANG-tsee”). For 10 points, give this Chinese word which, today, is an alternate name for the Cantonese people and their languages.

ANSWER: yuè (“yoo-WAY” or “y’WEH”) [or Ye, or Gwad, or Hwut, or Jyut, or Yet, or Yot, or Yad; accept Yue Maiden or Yuènu or Baiyue or Nanyue; prompt on viêt by asking “What is a Chinese cognate of that word?”]
<Ancient History>

8. *Description acceptable*. Carsten Wiedemann (“VEE-duh-mahn”) and others modeled how some of these general objects were formed by agglomeration of copper needles produced for Project West Ford. A group of these objects with a shared origin forms a tilted cross on a Gabbard diagram. These objects make up most entries in a database maintained at the University of Texas by Moriba Jah. A runaway number of these objects are created by a cascade of collisions in Kessler syndrome. The Haystack Radar recorded the largest known increase in the number of these objects during a 2007 incident involving a Chinese Fengyun-1C (“fung-yoon-one-C”). The FCC sets a time limit of twenty-five years to remove these objects, which can be done by moving them to a near-geo-synchronous “graveyard” path, or by expending a large delta-*v* to de-orbit them. For 10 points, name these artificial objects in space that no longer serve their intended purpose.

ANSWER: space debris [or space junk; or space trash; or orbital debris; accept any description of broken or decommissioned or fragmented or otherwise non-functional satellites; prompt on satellites by asking “What trait do those satellites share?”]

<Misc. Science>

9. A character in this novel mentally calls his wife a Bolshevik when she fails to kiss him goodnight after he spends the evening reading Racine (“rah-SEEN”) to her in French. That wife in this novel decides that words are what ravish life, after arguing with her husband about Keats’s use of the word “ravish” in “Ode on a Grecian Urn.” Two characters in this novel have their first romantic encounter when the man comforts the woman after she is overcome with tears while holding a chick. In this novel, a war veteran rants about the necessity of ruling over the local coal miners, shortly before his motorized wheelchair gets stuck on a hill. A man in this novel threads forget-me-nots through the pubic hair of a woman who is married to the paraplegic Sir Clifford. For 10 points, the gamekeeper Oliver Mellors has an affair with the title noblewoman in what novel by D. H. Lawrence?

ANSWER: Lady Chatterley’s Lover

<British Literature>

10. One of this person's works poses the problem of digging a straight line between two opposite sides of a mountain and explains how it is resolved with the title tool, which is a rotatable disk mounted on a table. This person names an algorithm sometimes attributed to the Babylonians which iteratively updates an initial guess for a number's square root. This author of *Dioptra* created a method of dispensing ritual water to worshippers who placed a coin inside a pan attached to a lever, often called the first vending machine. A few decades after Vitruvius, he described a device consisting of a spinning ball mounted on two arms and attached to a cauldron filled with boiling water. This man's treatise *Pneumatica* describes the aeolipile ("AY-oh-lee-PILE"), often considered the world's first steam engine. For 10 points, what Alexandrian mathematician names a formula relating the semi-perimeter of a triangle to its area?

ANSWER: **Hero** of Alexandria [or **Heron** of Alexandria; accept **Heron's** formula or **Heron's** method] (The second clue refers to Hero's vending machine.)

<Other Academic>

11. This is the second title concept of a book that argues that the Weimar Republic's form of this concept is grounded in the "principle of equal change," written by Carl Schmitt. In *The Perils of Presidentialism*, Juan Linz argues that the title systems suffer from a "dual" form of this concept when they have elected legislatures. In an essay from *The Good Polity*, Joshua Cohen argues that deliberation gives rise to the "democratic" form of this concept through rationally motivated consensus-making. It's not "politics" or "vocation," but this property titles an essay that argues that people come to believe an organization has it due to one of three sources: traditional, legal, or charismatic. In Max Weber's ("VAY-ber's") definition, the state has a monopoly on violence with this property. For 10 points, give this term from political science which denotes a government or action with rightful authority.

ANSWER: **legitimacy** [or **legitimate**; accept *Legality and Legitimacy* or democratic **legitimacy** or "Deliberation and Democratic **Legitimacy**" or "Three Types of **Legitimate** Rule" or **legitimate** use of force; prompt on **authority** before "authority"]

<Social Science>

12. White teeth are described as in *this state of being* in the final stanza of Pierre Jean Jouve's ("JOOV's") "White Haunches." "The solitary learns to sidle past" when solitude has put him in this state of being in Paul Éluard's "From the Depth of the Abyss." A prose poem titled for this state suggests asking a wind, wave, star, bird, or clock what hour it is, and offers a solution to "the horrible burden of Time weighing on your shoulders." A poem partly titled for this state describes "giant serpents devoured by bedbugs" that "[f]all down from gnarled trees with black scent." In "Paris Spleen," Baudelaire ("bode-LAIR") declares "Be always [in this state] / Nothing else matters." This state partly titles a poem that begins "As I was going down impassive Rivers, / I no longer felt myself guided by haulers." For 10 points, name this condition of the title seacraft of an Arthur Rimbaud ("ar-TOOR ram-BOH") poem.

ANSWER: **drunken** [or **ivre** ("EEV-ruh"); accept clear synonyms for drunkenness, such as **inebriated**, or **intoxicated**]

<European Literature>

13. In 2011, a Finnish group showed that seventy percent of cases of one cancer arising in this organ have inactivating mutations in MED12 (“M-E-D-twelve”). Hemorrhagic necrosis in one cancer of this organ is called red degeneration. Stanley Gartler found that only one G6PD allele is expressed in each instance of one tumor of this organ, suggesting that all tumors are clonal. One cancer of this non-skin, non-kidney organ is more frequent in patients with fumarate (“FUME-uh-rate”) hydratase mutations. Because of seeding, morcellation is no longer used to treat one tumor of this organ, which can be sub-serosal, intramural, or sub-mucosal, and can also arise from the nearby broad ligament. Those benign smooth muscle tumors of this organ are often palpated on bi-manual exams, are called leiomyomas, and can cause anemia and dysfunctional bleeding from its lining. For 10 points, name this organ, in which fibroids can make pregnancy difficult.

ANSWER: **uterus** [prompt on muscle or smooth muscle by asking “What organ is the muscle in?”] (The whole question is about fibroids.)

<Biology>

14. This was the birth surname of a Black female teacher who filed the first suit under the Civil Rights Act of 1866 after being “literally thrown” out of a Maryland train depot. A man of this surname was thanked by Wong Ar Chong after writing to the *New York Tribune* savaging James Blaine for backing Chinese exclusion. This was the middle name of a head of the *New York Evening Post* who helped organize the first NAACP (“N-double-A-C-P”) meeting and was the son of Henry Villard. Another man with this surname quipped “Tell a man whose house is on fire, to give a moderate alarm” and lost a libel suit with ship owner Francis Todd for writing “The Black List.” Isaac Knapp was the business partner of that man with this surname, who called the Constitution “a Covenant with Death” and burned a copy of it publicly. For 10 points, give this surname of the editor of the abolitionist paper *The Liberator*.

ANSWER: **Garrison** [accept Ellen **Garrison** Jackson Clark, or Oswald **Garrison** Villard, or William Lloyd **Garrison** (Jr.)]

<American History>

15. Leviticus 13 refers to a subset of these people with the word *tzara'at* (“tsah-RAH-at”). The eighth of eighteen blessings in a full Amidah prayer concerns this sort of person. The word *bikur* partly names a *mitzvah* involving one or more of these living people. The sung scale degrees [read slowly] “3, [pause], 3, 2, 3, 6, 6” begin a ubiquitous bilingual prayer song regarding these people adapted by Debbie Friedman, which includes the words “May the source of strength, who blessed the ones before us.” They are the group to whom the phrase *r'fuah shleimah* (“ruh-foo-AH sh'lay-MAH”) usually refers and to whom the prayer Mi Shebeirach (“mee sheh-BAY-rack”) is dedicated. In Orthodox communities, these people are handled by Hatzalah (“hut-SAH-luh”) volunteers, who operate their own vehicles apart from municipal authorities. For 10 points, what subset of people are cared for by a large facility in New York named Mount Sinai?

ANSWER: **sick** people [or the **ill**, or the **unwell**; or medical **patients**; or the **injured**; or the **wounded**; or the **dying**; accept *bikur cholim*; accept **hospitalized** people; accept **lepers**; accept answers indicating those recovering from or healing from **illness**; accept answers indicating those who need an **ambulance**; reject “dead people”] (Tzara'at is a mysterious skin infection; Sampson Simson and associates founded Mount Sinai Hospital.)

<Religion>

16. The concentration of this gas is measured by a “candle” made of lead peroxide. This gas is safely provided to reactions as a solid in a surrogate complexed to DABCO (“DAB-koh”). Synthetic gypsum is a byproduct when this gas is scrubbed by flue (“floo”) lines coated in wet limestone. Butadiene (“b’YOO-tuh-DYE-een”) is stored as a liquid by reacting it with this gas, forming a thermo-reversible five-member ring in a prototypical cheletropic (“KEE-luh-TROH-pick”) reaction. Oxidation of this gas by iodine in the Bunsen reaction is the first step of a chemical cycle that makes hydrogen by splitting water. Many solar geoengineering strategies are inspired by the cooling tropo-spheric aerosols of this gas that are produced in volcanic eruptions. Like NO_x (“nox”) gases, this pollutant is oxidized in air, then mixes with water to form acid rain. For 10 points, name this tri-atomic gas produced by coal combustion.

ANSWER: sulfur dioxide [or SO₂]

<Chemistry>

17. A planned megastructure in this city designed by KuiperCompagnons is slated to provide housing for 2 million residents as part of the NCICD project. During the COVID-19 pandemic, measures called “PPKM” temporarily suspended this city’s anti-congestion policy, in which only cars with even-numbered plates are allowed on its two ring roads and five major toll roads on even dates. A \$40 billion, bird-shaped seawall planned to protect the northern coast of this city is meant to combat both sea-level rise and this city’s sinking due to overutilization of groundwater. Routine three-hour commutes by government workers from Bogor prompted media to declare that this city has the worst traffic in the world. In 2019, a former governor of this city announced that it would cease to be a national capital by 2024, to be replaced by a planned city called Nusantara in East Kalimantan. For 10 points, name this city from which Joko Widodo governs, the largest in Java.

ANSWER: Jakarta

<Current Events>

18. In a story titled for this book, “the boy” helps “the big man” choose book sets, only for the big man to spitefully buy the store’s only copy of this book, which the boy wanted; that story is by Shirley Jackson. The author analyzes the question of whether Conchubar (“KON-kuh-warr”) has crossed the stepping-stones in a scene from Synge’s (“SING’s”) *Deirdre* (“DEER-druh”) of the Sorrows in this book’s “Annex on Dramatic Irony.” This book defends Shelley’s “To a Skylark” from T. S. Eliot’s criticisms, using it as an example of “not holding all the idea in one’s mind at once.” This book opens with a list of the possible ways that trees might be like “bare ruined choirs,” and it discusses the ways that the joining of contradictory words demonstrates division in writers’ minds. For 10 points, the title concept is defined as “verbal nuance” that “gives room for alternative reactions” in what book by William Empson?

ANSWER: Seven Types of Ambiguity

<American Literature>

19. A portrait of this person was gifted to the Swiss painter Franz Niklaus König, with whom the artist stayed to attend a Festival of the Shepherds in Switzerland. This non-royal person wears a feathered black hat in a portrait named for the cerise ribbon that adorns her white *chemise à la reine* (“shuh-MEEZ a la REN”). This person wears a Greek-style white dress and hugs her daughter Julie in a painting that is known as *à l’Antique*, to distinguish it from *Maternal Tenderness*, which depicts the same subject. A painting of this woman in a black dress and red sash was created in 1790 for the Uffizi’s Vasari Corridor, and shows her with her mouth open to reveal her teeth. Rubens’s mistitled portrait of Susanna Lunden, *La Chapeau de Paille* (“la shah-PO duh PYE”), inspired a portrait of this woman in which she holds a palette and brushes and wears the titular straw hat. For 10 points, name this French artist of many self-portraits who also frequently painted Marie Antoinette.

ANSWER: Élizabeth Vigée Le Brun (“vee-JAY luh BRUN”) [or Élizabeth Louise Vigée Le Brun; prompt on Madame Le Brun]

<Painting/Sculpture>

20. This country's parliament passed the May 18th Act to deprive its leader of most of his powers in response to a general strike organized by Communists, including a woman architect-turned-commando named Hisila Yami. In 1990, this country's United Left Front organized the Jana Andolan movement, which forced the government to allow political parties and abolish a four-tiered system of local governance called *panchayat* ("PUNCH-uh-yatt"). This country's RPP party supports restoring its monarchy, which was abolished two years after the signing of the 2006 Comprehensive Peace Accord, in which Maoist insurgents agreed to end this country's ten-year civil war. In 2001, its drunken crown prince Dipendra killed nine fellow members of the Shah dynasty in a shooting spree. For 10 points, name this country whose civil war impoverished the Sherpa people.

ANSWER: Nepal [Federal Democratic Republic of Nepal, or Saṅghīya Loktāntrik Gaṇatantra Nepāl; accept Kingdom of Nepal]

<World History>

BONUSES

1. The Morisita (“MOH-ree-SHEE-tuh”) index for this property calculates the probability that two points in a population are from the same sample. For 10 points each:

[10m] Name this property of a population that can be clumped, random, or uniform.

ANSWER: spatial **dispersion** [or spatial **distribution**]

[10e] Simpson and Shannon both name indices of this other quantity for a population. Roughly speaking, this quantity is the variety of fauna in an ecosystem and is particularly high for rainforests.

ANSWER: **diversity** [or **biodiversity**; accept **diversity index**]

[10h] The Simpson and Shannon indices can be generalized into a series of numbers specified by an order parameter q , named for this scientist. The diversity profile is found by plotting his numbers against q .

ANSWER: Mark Oliver **Hill** [accept **Hill** numbers]

<Biology>

2. This woman’s press freedom foundation is led by her daughter Cristina, who was put under house arrest in 2021 and banned from running for office. For 10 points each:

[10m] Name this woman who ran the opposition newspaper *La Prensa* after her husband Pedro was assassinated by the Somoza regime. She was later elected President of Nicaragua in 1990.

ANSWER: Violeta **Chamorro** [or Violeta **Barrios** Torres de Chamorro]

[10e] Chamorro ran on a fusion ticket of liberal and conservative parties who opposed this left-wing movement, named for an anti-U.S. rebel and led by Daniel Ortega. Throughout the 1980s, its soldiers fought the Contras.

ANSWER: **Sandinistas** [or **SNLF** or **Sandinista** National Liberation Front]

[10h] As editor of *La Prensa*, Chamorro popularized the use of this common Spanish noun to denote Sandinista militants and leaders alike. Sergio Ramírez’s memoir of the Sandinista revolution is titled for this noun.

ANSWER: **muchacho** (“moo-CHAH-choh”) [accept *Adiós* **Muchachos**] (Muchachos roughly means “guys” or “young men.”)

<World History>

3. In a section partly titled for “sceptical doubts,” the interaction of two of these objects is used to argue that we cannot directly perceive causation or understand it *a priori* (“AH pree-OH-ree”). For 10 points each:

[10h] Name these objects used to show that a sense of “necessary connexion” comes from exposure to constant conjunction.

ANSWER: **billiard balls** [prompt on **balls** or **spheres**]

[10e] That discussion appears in this David Hume work, a follow-up to *A Treatise of Human Nature*. It includes the “missing shade of blue” thought experiment.

ANSWER: *An Enquiry Concerning Human Understanding*

[10m] What has come to be called the *Enquiry*’s “copy principle” says that all ideas are derived from these mental phenomena, which include immediate sensory and emotional perceptions. Hume’s exact term is required.

ANSWER: **impressions** [reject all synonyms]

<Philosophy>

4. Pineapples can be prime fodder for comedy and hijinks in British literature. For 10 points each:

[10m] In this novel, George, Harris, and the narrator all injure themselves attempting to open a can of pineapple using a pocket knife, a stone, and even the mast of the transport they have been using to travel the Thames.

ANSWER: Three Men in a Boat (*To Say Nothing of the Dog*)

[10e] This character created by Richard Brinsley Sheridan calls Captain Absolute “the very pine-apple of politeness,” one of her many namesake vocabulary errors.

ANSWER: Mrs. Malaprop

[10h] Bananas mark sections narrated by the Dog Woman, and pineapples mark sections narrated by her adopted son Jordan, in this Jeanette Winterson novel, mostly set during the reigns of Charles I (“the first”) and II (“the second”).

ANSWER: Sexing the Cherry

<British Literature>

5. After a screening tour for a film depicting this action, its performers pledged not to talk about it for exactly 23 years after it first took place. For 10 points each:

[10h] Describe this action that occurred in 1994 at a boathouse in Ardfin, a country estate in the Inner Hebrides. The K Foundation dissolved after performing this action.

ANSWER: burning money [accept *Watch the K Foundation* Burn a Million Quid; accept any answers that indicate setting fire or burning British paper money]

[10e] In the *Cremation Project*, John Baldessari burned all of the objects of this kind in his possession that he made from 1953 to 1966. One of these objects created by Banksy was shredded during a Sotheby’s (“SUH-the-bee’s”) auction.

ANSWER: paintings [prompt on works of art]

[10m] While performing *Rhythm 5*, this artist lost consciousness after setting fire to a wooden star and lying inside it. This artist’s *Rhythm 10* involved jabbing at their own fingers with a knife.

ANSWER: Marina Abramović (“ah-BRAH-mo-vitch”)

<Other Fine Arts>

6. This social theorist and historian drew on her years teaching in Nigeria in the book *Revolution at Point Zero*, which advocates “wages for housework.” For 10 points each:

[10h] In a 2004 book, what Italian-American theorist argued that Marx’s theory of “primitive accumulation” can’t account for the degradation of unpaid women’s labor during transitions to capitalism?

ANSWER: Silvia Federici (“feh-deh-REE-chee”)

[10e] Federici’s book *Caliban and the Witch* praises this heretical group’s “sexual revolution” against the Catholic Church. The Albigensian Crusade targeted this group.

ANSWER: Cathars [accept Good Christians; reject “Christians”]

[10m] One of Federici’s examples of degradation is Native American men delivering their wives to holders of these land grants. Holders of these grants from the Spanish crown were charged with the Christian conversion of the natives whose labor they exploited.

ANSWER: encomiendas (“ENN-kohm-YEN-duzz”) [accept encomenderos]

<Other History>

7. This author alleged that missing pages from her diary appeared verbatim in the novel *The Beautiful and Damned*. For 10 points each:

[10e] Name this author, who was plagiarized from, verbally abused by, and institutionalized by her husband F. Scott.

ANSWER: Zelda Sayre Fitzgerald [or Zelda Sayre; prompt on Fitzgerald]

[10m] Zelda Fitzgerald fictionalized herself as the southern belle Alabama Beggs in this work, her only novel, which she began writing during a stay in a Baltimore mental hospital.

ANSWER: Save Me the Waltz

[10h] Zelda Fitzgerald claimed F. Scott stole her work for this opening short story of *Tales from the Jazz Age*, in which the Southerner Jim Powell gets nicknamed for the title delicacy due to his idleness.

ANSWER: "The Jelly-Bean"

<American Literature>

8. Brandywine School illustrator Howard Pyle is credited with creating the modern stereotypical dress of people in this profession, which he borrowed from Romani culture. For 10 points each:

[10m] Name this profession depicted in illustrations by Pyle's pupil, N. C. Wyeth, for a novel originally published in 1883. Portrayals of this profession in film, including a live action Disney series, reflect Pyle's style.

ANSWER: pirate [accept buccaneers; accept Pirates of the Caribbean; prompt on sailors or synonyms]

[10h] With Bill Tytla, this Danish artist designed the *Night on Bald Mountain* sequence for Disney's *Fantasia*. This man provided Art Nouveau illustrations for the fairy tale collection *East of the Sun and West of the Moon*.

ANSWER: Kay Nielsen [or Kay Rasmus Nielsen]

[10e] This Spanish artist and John Hench storyboarded the short Disney film *Destino*. A stone hand holding an egg mirrors the title figure in this painter's *Metamorphosis of Narcissus*.

ANSWER: Salvador Dalí [or Salvador Domingo Felipe Jacinto Dalí i Domènech]

<Painting/Sculpture>

9. Large phase offsets lead to an incomplete form of this behavior that Daniel Abrams and Steven Strogatz dubbed a "chimera" state. For 10 points each:

[10h] Name this behavior, whose occurrence in both neurons and Josephson junctions can be modeled by including sufficiently strong couplings between the components of the Kuramoto model.

ANSWER: synchronization [accept becoming synchronized or synced up; accept phase-locking or phase-locked; prompt on coherence]

[10e] The Kuramoto model is a system of coupled oscillators, each with its own natural value for this quantity. The ground-state energy of a quantum harmonic oscillator is "one-half h -bar," times this quantity denoted omega.

ANSWER: angular frequency [accept frequency; accept natural frequency or resonance frequency]

[10m] Coupled oscillating systems are solved by diagonalizing the matrix " K minus M omega-squared" to find the frequencies of these phenomena. A general oscillation is a super-position of these mutually orthogonal phenomena.

ANSWER: normal modes [prompt on modes]

<Physics>

10. This faith officially severed ties with the Boy Scouts of America in 2019, causing the latter group to lose about 400,000 members. For 10 points each:

[10e] Name this religious sect in which almost every young male joins the Aaronic (“air-RON-ick”) priesthood at age twelve, and many report to the Missionary Training Center in Provo at age nineteen.

ANSWER: Church of Jesus Christ of **Latter-Day Saints** [accept **LDS** Church; accept **Mormon** Church or **Mormonism**, though note that the Church disavowed those terms in 2018]

[10m] In areas with many Mormons, separate local congregations, or wards, are set up for people in this category between ages 18 and 30. In March 2021, the LDS began allowing people in this category to become bishops.

ANSWER: **single** [or **not married** or **unmarried**; accept **YSA** or Young **Single** Adult; accept synonyms such as **lacking a spouse**; prompt on **no partner** or **unpartnered**; prompt on **widow**, or **widower**, or **divorced**, or **divorcee**; reject answers referring to “significant others” or “boyfriends” or “girlfriends” or “celibacy”]

[10h] Young Mormons often go with their parents to this twice-annual gathering in Salt Lake City, where Ezra Taft Benson gave several addresses to youth in the 1970s. Methodists also have an annual gathering of this name.

ANSWER: **General Conference** [accept Annual **General Conference** or Semiannual **General Conference**]

<Religion>

11. The plans for this city feature a three-leveled design with a bottommost layer consisting of tunnels for AI-driven vehicles and an upper layer consisting of pedestrian green space. For 10 points each:

[10h] Name this planned smart city, slated to be the first completed section of NEOM (“nay-OHM”) in Tabuk (“tuh-BOOK”) Province. The unique shape of this city’s plan may have been inspired by Spanish urban planner Arturo Soria y Mata (“SOR-yuh ee MAH-tuh”).

ANSWER: The **Line** [or **dha layin**]

[10e] The Line is in the northwest of this country, whose de facto leader is Muhammad bin Salman.

ANSWER: **Saudi** Arabia [or Kingdom of **Saudi** Arabia or Al-Mamlakah al-‘Arabīyah as-**Su‘ūdīyah**; prompt on **KSA**; reject “Arabia”]

[10m] The NEOM project aims to develop the coast of this arm of the Red Sea, and to cross it with a bridge to the Sinai Peninsula. The Straits of Tiran lead into this body of water, which is named for Jordan’s only major port.

ANSWER: Gulf of **Aqaba**

<Geography>

12. In the same year as this poem, its author wrote a work in the same form that begins, “For how many years / Has the warrior endured / The rattling of / The sword he wears at his side.” For 10 points each:

[10h] Describe this poem, which reads in its entirety “Storm winds at night blow / The message that to fall before / The world and before men / By whom falling is dreaded / Is the mark of a flower.”

ANSWER: Yukio **Mishima**’s **death** poem [accept **Mishima**’s **jisei** or **farewell** poem instead of death poem; reject anything mentioning a “suicide note”; prompt on answers that describe the poem but do not mention Mishima]

[10m] Mishima’s death poem is in this most popular poetic form for death poems. The five lines of this sub-type of *waka* follow a 5-7-5-7-7 syllable pattern.

ANSWER: **tanka**

[10e] This earlier Japanese author’s death poem reads “Sick on my journey, / only my dreams will wander / these desolate moors.” That journey took place five years after the one that inspired his *Narrow Road to the Deep North*.

ANSWER: Matsuo **Bashō** [or **Sōbō**; or **Tōsē**; or Matsuo **Kinsaku**; or Matsuo Chūemon **Munefusa**; accept names in any order]

<World Literature>

13. In 2021, David Asperó and Ralf Schindler showed a connection between Martin's maximum and Woodin's axiom "star," each of which implies that this statement is false. For 10 points each:

[10e] Name this hypothesis that there is no set whose cardinality lies strictly between those of the integers and the real numbers.

ANSWER: **continuum** hypothesis [or **CH**; prompt on **generalized continuum** hypothesis or **GCH**]

[10m] The cardinality of the integers is called aleph-null. Cantor's diagonal argument shows that *what* expression gives the cardinality of the reals? It is also the cardinality of the powerset of the integers.

ANSWER: **2^{\aleph_0}** ("two-to-the-aleph-null") [accept **aleph-nought** or **aleph-zero** for "aleph-null"]

[10h] This proof technique was devised to show that the continuum hypothesis is independent of ZFC set theory. In this technique, a "ground model" of set theory is expanded by adjoining an additional set.

ANSWER: **forcing** [accept ramified **forcing**]

<Misc. Science>

14. These colors replaced the old German imperial colors at the outset of the Weimar ("VYE-mar") Republic, symbolizing Germany rediscovering its democratic identity. For 10 points each:

[10e] Name these three colors which were widely adopted as a symbol of German national identity during the 19th century Vormärz ("FOR-merts") period. They appear on Germany's flag today.

ANSWER: **black**, **red**, and **gold** [or **yellow** for **gold**; or **Schwartz**, **Rot**, und **Gold**; accept **Gelb** for **Gold**]

[10h] The use of black, red, and gold flags to symbolize Germany was popularized at this 1830 festival, disguised as a county fair, at which dignitaries and intellectuals gathered in the Rhineland to promote German unity.

ANSWER: **Hambach** festival

[10m] Black, red, and gold were later enshrined as the official colors of the German flag by Article 2 of this constitution, which was modified by the "Two Plus Four Agreement" of 1990 to allow for German reunification.

ANSWER: **Basic Law** for the Federal Republic of Germany [or **Grundgesetz** für die Bundesrepublik Deutschland]

<European History>

15. Answer the following about the chansons of the 15th-century *ars subtilior* ("sub-TILLY-or") composer, Baude Cordier ("bode cord-YAY"), for 10 points each.

[10e] Cordier's chanson "Tout par compas suy composés" ("too par kom-PAH swee kom-po-ZAY") belongs to this contrapuntal genre, in which one voice follows another voice in strict imitation.

ANSWER: **canon** [prompt on **round** by saying "Be less specific."]

[10m] Most of Cordier's chansons are in this song form, whose simplest variant features triolet stanzas. Along with the *ballade* ("bah-LAHD") and the *virelai* ("vee-ruh-LAY"), it was one of the three *formes fixes* ("form FEEX"), and it shares its name with a Classical-era instrumental form.

ANSWER: **rondeaux**

[10h] Visually rather than auditorily, Cordier's best-known chanson is probably "Belle, bonne, sage, plaisant" ("bell bawn sazh play-ZAWN"). Like many *ars subtilior* pieces, it is written in two different colors of ink, but it is also notated in this far more unusual manner.

ANSWER: shaped like a **heart**

<Classical Music>

16. Raman (“ramen”) signals are enhanced using a similar setup to this technique in a SERS (“surs”) assay. For 10 points each:

[10m] Name this label-free assay for binding affinity, in which antigen is slowly added to an anti-body tethered to a gold surface. It’s named for an effect in which electrons at a metallic interface oscillate at a common frequency.

ANSWER: **surface plasmon resonance** assay [or **SPR**; or localized **surface plasmon resonance** or multiparameter **surface plasmon resonance** or **LSPR** or **MP-SPR**; prompt on resonance; prompt on surface resonance; prompt on surface-enhanced resonance]

[10e] SPR reports on affinity by measuring the equilibrium constant of this reaction. In this type of reaction, the complex AB splits into molecule A and molecule B.

ANSWER: **dissociation** or **disassociation** [or word forms]

[10h] SPR can measure the thickness of films built with this technique. This technique from semiconductor manufacturing deposits pairs of alternately charged, atomically thin polymer sheets onto a planar surface.

ANSWER: **layer-by-layer** assembly [or **LBL**]

<Chemistry>

17. This man died of wounds received while fighting for Sir Ontzlake, who had recently received a spear wound through both legs, against the champion of Ontzlake’s evil brother Sir Damas. For 10 points each:

[10h] Name this knight who was tricked by Morgan le Fay into wielding Excalibur in a duel against his lord, Arthur. Were he to prevail, Morgan intended to murder her husband Urien and marry this man.

ANSWER: Sir **Accolon** of Gaul

[10e] While Arthur lay healing in an abbey, Morgan deprived him of Excalibur’s scabbard by performing this action. After the Battle of Camlann, Arthur instructed Sir Bedivere to do *this* with Excalibur to return it to its origin.

ANSWER: throwing it into a **lake** [accept returning it to the Lady of the **Lake**; accept answers that mention placing Excalibur in **water**; prompt on throwing or equivalents]

[10m] Believing Accolon to have prevailed, Morgan tried to murder her husband Urien but was stopped by this man, their son. In a romance by Chrétien de Troyes, this knight defeats Esclados, the guardian of a fountain.

ANSWER: Sir **Yvain** [or Sir **Ywain**; or Sir **Owain**; or Sir **Uwaine**; prompt on Knight of the Lion]

<Mythology/Legends>

18. Opponents of this man’s Senate run formed the Constitutional League, which he dismissively called the “Constipational League.” For 10 points each:

[10e] Name this man whose rise to power involved co-opting the Old Regulars political machine in New Orleans. This governor proposed the “Share Our Wealth” program.

ANSWER: Huey (Pierce) **Long** [prompt on The Kingfish]

[10m] As chair of Louisiana’s Public Interest Commission, Long established a populist brand by suing a company in this industry for a rebate of its 20% rate hike. Elisha Gray was a pioneer in this industry.

ANSWER: **telephone** industry [or **telegraph** industry, or **telecommunications** industry; accept Cumberland **Telephone** and Telegraph Company]

[10h] Long funded his Senate ambitions with this system, in which every state employee had to pay 10 percent of their salary into a namesake locked “box” that went missing after Long’s murder.

ANSWER: **deducts** system [or the **deduct** box]

<American History>

19. Some commentators claim this movement began in 1772, with Christoph Martin Wieland's ("VEE-lahnt's") arrival in the title city, and ended in 1805, with the death of Friedrich Schiller. For 10 points each:

[10m] Give this term for the aesthetic movement epitomized by the mature styles of Schiller and Goethe ("GURR-tuh"). It is frequently contrasted with the more fragmentary Romanticism centered at Jena ("YAY-nuh").

ANSWER: **Weimar Classicism** [or *Weimarer Klassik*; prompt on Weimar, Classicism, or Klassik]

[10e] Before embracing classical principles, Goethe was previously allied with the *Sturm und Drang* movement, as seen in this epistolary novel whose title character shoots himself out of unrequited love for Charlotte.

ANSWER: *The Sorrows of Young Werther* ("VAIR-ter") [or *Die Leiden des jungen Werthers*]

[10h] Thomas Mann's novel *Lotte in Weimar* fictionalizes the unwanted fame that surrounded this real-life woman after Goethe used her as the basis for the character of Lotte in *The Sorrows of Young Werther*.

ANSWER: Charlotte **Buff** [or Charlotte **Kestner**]

<European Literature>

20. Over the last two centuries, nineteen scripts have been invented to write West African languages. Answer the following about why, for 10 points each:

[10e] The N'Ko script marks vowels to distinguish length and this feature, so each of its seven vowels has seven ways to write them. Languages with this feature use pitch to distinguish meanings of phonemes.

ANSWER: **tone** [accept **tonal** language or **tonality**]

[10m] Most West African languages, as well as Bantu languages, have syllables in which consonants with this property come [emphasize] *before* obstruents, which is relatively uncommon outside of Africa. Sounds with this property are produced by lowering the velum.

ANSWER: **nasal** consonants [accept pre-**nasalized** consonants or **nasalization**]

[10h] Many Nigerian scripts were created because, while Latin had too few letters to represent local sounds, this system of hundreds of pictograms had too many. This script of the Ekpe secret society appears on much Igbo art.

ANSWER: **nsibidi** [or **nsibiri**, or **nchibiddi**, or **nchibiddy**]

<Social Science>