

Chicago Open 2020 2021: “We probably needed the extra year to finish it anyways.”

Editors: Will Alston, Brad McLain, Eric Mukherjee, and Jonathen Settle, with assistance from Ike Jose

Writers: Noah Chen, Ryan Humphrey, Kirk Jing, Joseph Krol, Caroline Mao, Jack Mehr, Matt Jackson, and Itamar Naveh-Benjamin

Logistics: Jacob O'Rourke

Packet by: Andrew Wang, Jordan Brownstein, Matt Bollinger, Ophir Lifshitz

TOSSUPS

1. A broad-spectrum variant of this protein named for Pittsburgh causes recurrent bleeding. Liquefactive necrosis of the dermis is a characteristic finding of the panniculitis caused by mutations in this protein, which commonly occurs on the buttocks and thighs. Variants in its shutter region, like ones named for Palermo, Malton, and Iiyama, allow the reactive loop of one molecule of it to insert into the A sheet of another, causing polymerization. The D·342·K and D·264·V alleles of this protein cause it to form P·A·S-positive diastase-resistant granules in the liver. This protein inhibits (*) neutrophil elastase and is encoded by the SERPINA1 gene. Homozygotes for its S or Z allele often develop panacinar emphysema in the lungs by age 60. For 10 points, name this protease inhibitor whose deficiency causes a common genetic disease in Europeans.

ANSWER: alpha-1-antitrypsin [or A1AT or AAT]

<Biology, Eric Mukherjee>

2. This kingdom manufactured most of the ceramics found in the Pandanan Shipwreck, evidence of the “Kalanay Interaction Sphere” that linked its lands to the Philippines since before its founding. A Chinese ambassador wrote that this kingdom demanded regular tribute of thousands of human gallbladders in a jar. Before converting to Islam around the 14th century, this kingdom made many pedestals ringed with sculptures of female breasts, representing the goddess Uroja. Its most iconic surviving monument is a group of four pyramidal brick towers honoring the ancestor Lady (*) Po Nagar. The doubling of China’s population under the Song dynasty is often partly attributed to Emperor Zhengzong introducing “hundred day rice” from this kingdom. It was gradually conquered in the “March to the South” by Đại Việt and the Nguyen lords. For 10 points, what loosely-connected kingdom once ruled the southern coast of present-day Vietnam?

ANSWER: Champa Kingdom [or Cham Kingdom, or Nagaracampa, or Zhànchéng, or Chiêm Thành; accept Cham people or Chams or Champa rice]

<World History, Bollinger et al.>

3. This character inspired the surname of the mad scientist Khanazar, who attempts to create a third genital in a play by Charles Ludlam. Nameless friends of this character recall how “He played the piano so beautifully” in the third of four short pieces from a 2019 play by Caryl Churchill. The protagonist of a novel titled for this character unwisely uses tape and Sateen Dura-Luxe to create his masterpieces, which all turn into flakes over time. In an adaptation of this character’s story, he orders a woman to “Kneel!” before pressing a (*) key into her forehead, leaving a “red mark” that is shaped like a heart. In a novel titled for this character, a depiction of a potato barn is the last work painted by the Armenian Rabo Karabekian, a creation of Kurt Vonnegut. Angela Carter’s story “The Bloody Chamber” adapts the tale of, for 10 points, what legendary nobleman who hides the corpses of murdered wives in his castle?

ANSWER: Duke Bluebeard [or La barbe bleue; accept Glass. Kill. Bluebeard. Imp.]

<Misc. Lit, Will Alston>

4. This musician founded a record label that releases “series,” including the *Archival Series*, *Japan Series*, and *Lunatic Fringe Series*. This musician plays more than ten different instruments, including prepared piano, on a 2019 album which features a deep voice reading such Wittgensteinian quotes as “logical forms are without number.” While recording another album, this musician gave his bandmates index cards with notes from the title author’s novels to inspire their improvisation. This bandleader behind *Tractatus Musico-Philosophicus* and *Spillane* founded Tzadik Records. He reworked Ennio Morricone (“mor-rih-KOH-nay”) pieces on his album *The (*) Big Gundown* and has created hundreds of pieces inspired by Jewish music for releases called “Books.” For 10 points, name this avante garde saxophonist who leads the grindcore band Naked City and the experimental jazz group Masada.

ANSWER: John Zorn

<OArts: Auditory, Brad McLain>

5. A creature in these people’s mythology is shaped like a casket and explodes at the end of its life, leaving grave-shaped holes in the ground. Another creature from the myths of these people constantly sobs due to its hideous scaly skin, and may dissolve into a puddle of its own tears when captured. A popular encyclopedia of the creatures from the folklore of these people contains illustrations by Coert du Bois and Latin names coined by George Cudworth, helping to popularize depictions of creatures such as the terrashot and squonk. A more famous cycle from the folklore of these people was adapted by (*) advertisement writer William Laughead, whose pamphlets are often cited as an example of “fakelore” for folksy additions such as “Sourdough Sam” and “Johnny Inkslinger.” So-called “fearsome critters” originated from the stories of, for 10 points, what North American laborers whose folk characters include Babe the Blue Ox and Paul Bunyan?

ANSWER: lumberjacks [or woodsmen; or loggers; prompt on Americans or Canadians]

<Legends, Bollinger et al>

6. In a 2018 update of one play, a frequent critic of this government debates a character with a similar name beginning with “X,” who stands in for the author and suggests rewriting the plot. This government is said to have restored its country’s “sacred position among nations” in another play, in which a character describes its metaphorical “children” as “Selfish and greedy and loveless and blind.” The young woman Zillah repeatedly insists that this government has become increasingly Hitler-like in the play A (*) *Bright Room Called Day*. Due to anxiety about her husband accepting a job in this government, a woman in another play becomes addicted to Valium, eventually leading her to hallucinate that she is in Antarctica. In that play, the name of this government’s leader is used to describe the “macho asshole lawyer” Joe Pitt, who proudly says he voted for it twice despite being gay. For 10 points, *Angels in America* is set during what presidential administration?

ANSWER: Ronald Reagan administration [accept Reagan’s children; accept any answer which indicates the U.S. government during Ronald Reagan’s presidency; prompt on U.S. government or Republican administration by asking “led by who?”]

<Drama, Will Alston>

7. *Description acceptable.* An expedition to investigate this proposal led by A. St. Hill Gibbons was sabotaged by participating engineer Nahum Wilbusch, who lost his compass and had his food stolen by guides. Supporting this proposal was the initial purpose of Lucien Wolf's "territorialist" movement and was the reason that Max Nordau was nearly murdered by a fanatical student. This proposal was first suggested by Joseph Chamberlain as an alternative to the El Arish and Cyprus proposals and centered on a fertile plateau in (*) Uasin Gishu. It was considered in the aftermath of devastating 1903 riots in Kishinev, but congressmen in Basel concluded that unfriendly lions and local Maasai people would be rather detrimental to arriving refugees from Russia. For 10 points, what proposal -- advanced by Theodor Herzl as a temporary alternative to settling Palestine -- would have first settled some of his people in East Africa?

ANSWER: The Uganda Scheme [accept reasonable answers which indicate to a plan to create a Jewish state in present-day Uganda, or one in Kenya; prompt on less specific answers such as Jewish state in Africa; or Jewish resettlement by asking "where"; prompt on Zionism or Zionist movement]

<CW / International Hist, Will Alston>

8. The preface to this philosopher's major work suggests that the following writing is a "disease," but hopes the reader will think it is a "disease of the wit." That book by this philosopher argues that physical vacuums cannot exist since they *must* be extensions of matter and that all perception comes from Aristotelian "self-motion." Drawing on Thomas Hobbes's materialist view of nature in *De Cive*, this philosopher claimed there could be no incorporeal component of the soul. This philosopher likens creating the title location to the conquests of "Alexander and Caesar" in the epilogue of a book in which the King of Esfi is harassed by (*) "fish men" and "bird men." The 1666 edition of this author's *Observations upon Experimental Philosophy* attached a novel by her in which a woman is shipwrecked at the North Pole and finds the title utopia. For 10 points, what early modern philosopher wrote the proto-feminist sci-fi novel *The Blazing World*?

ANSWER: Margaret Cavendish [or The Duchess of Newcastle]

<Philosophy, Ike Jose>

9. Plots of this function versus lambda are produced by the boxcox function in the MASS ("mass") library. The E·M algorithm computes the expected value of this function, called the Q-function, in the E-step. A statistic that can be written as twice the difference between two instances of this function has the chi-square distribution as its large sample size limit by Wilks' theorem. The negative of the expected value of the Hessian of this function equals the variance of the score. For a prior that follows a uniform distribution, (*) maximum a posteriori estimation reduces to a parameter estimation technique that, in practice, looks for the argmax of this function. When computing by hand, this function is typically maximized to find the M·L·E, since for independent data this function deals with a sum of terms instead of a product of densities. For 10 points, name this convenient transformation of the function that estimates how well the model parameters fit the sample data.

ANSWER: log-likelihood [prompt on likelihood with "what specific modification of the likelihood function?"]

<Other Science: Applied/Data Science/Engineering, Jonathen Settle>

10. **One explanation of the unusual height of this mountain range’s inhabitants credits the high calcium levels in the water flowing from such sources as the Jadro (“YAH-droh”) Spring and the Tara River, the latter of which cuts a huge gorge through this range. A subset of this mountain range called Velebit witnesses some of the strongest examples of a cold katabatic wind called the *bora*. Several of the subterranean rivers found beneath this mountain range’s karst topography confluence to form a series of sixteen cascading lakes at (*) Plitvice (“pleet-VEET-seh”). This range, which forms the south-western border of the Pannonian Basin, is where the Drina river arises and is the historic home of the Illyrian people. The city of Podgorica (“pod-GOH-reet-sah”) is separated from the coast by, for 10 points, what extension of the Alps found in the western Balkan peninsula?**

ANSWER: **Dinaric Alps** [or **Dinarides** or **Alpet Dinaride** or **Dinarsko gorstvo**; accept **Dinaric** after “Alps”
prompt on **Alps** or **Alpet**
<Geography, Will Alston>

11. **This city’s namesake settled it along with Richard Harris after a reward offered by the engineer George Pilz was taken up by Kowee, a member of the local Auk tribe. A fierce wind that blows near this city is named after another local tribe, the Taku people. In 1970, voters passed an initiative to demote this city in favor of the town of Willow, but the plan was never implemented due to moving costs. A wharf [emphasize] *not* found in this city, but which confusingly shares its name with it, was the site of the 1898 shootout that killed the notorious con man (*) “Soapy” Smith. From his office in this city, governor Scott Bone orchestrated an emergency transport of diphtheria antitoxin to combat a pandemic in 1925. This city’s suburb of Douglas is separated from its downtown by the Gastineau channel, and is found on the Alexander Islands. Sitka was replaced as a territorial capital by, for 10 points, what present-day capital of Alaska?**

ANSWER: **Juneau**, Alaska [prompt on **Douglas** before “wharf”]
<American History, Will Alston>

12. **This movement of a larger piece begins on beat 2 with a minor triad whose upper voice is repeated on the second half of beat 3, followed by an E half-diminished over D quadruple-stop. The best-known piano transcriptions of this movement are one by Busoni and one for the left hand by Brahms, who wondered to Clara Schumann how “just one staff” could produce “a whole world of the deepest thoughts.” This D minor movement is often performed standalone, such as an incognito 2007 performance in the D.C. Metro by a busking (*) Joshua Bell. This movement contains 63 variations on a repeated 4-bar theme based on the *romanesca* chord progression. The four standard Baroque suite dances precede this fifth and final movement from BWV 1004, which is its composer’s Partita No. 2. For 10 points, name this solo violin masterpiece by Johann Sebastian Bach titled for a stately dance form similar to the passacaglia (“pah-suh-KAHL-yuh”).**

ANSWER: **Chaconne** from Partita No. 2 in D minor for Solo Violin, BWV 1004, by Johann Sebastian Bach [or **Ciaccona**; accept Bach’s **Chaconne**; prompt on the **last movement** from Bach’s **Partita No. 2** in D minor or similar]
<Classical/Opera, Bollinger et al.>

13. **Metal oxides in this environment exhibit a shift in their volcano plots which is characterized by the confinement energy. Noble gases in this environment experience a surprising decrease in polarizability called exaltation, which implies that these environments serve as Faraday cages. Water in this environment may move via superdiffusion instead of Knudsen diffusion. The first isolated dimer of water was produced in this environment via molecular surgery. The (*) curvature of these environments results in a distinct electronic environment due to pi-electron density being shifted to their exteriors, which leads to an electric potential difference. Atoms in this environment may be notated with the at symbol in so-called endohedral complexes. For 10 points identify these nanometer-sized carbon rich environments.**

ANSWER: **inside of a fullerene** [accept **inside of a carbon nanotube** or **inside a buckyball**; prompt on **inside of another molecule** with “what kind of molecule?”]
<Chemistry, Wangerino>

14. A man living in an unnamed version of this city poses as a hair tonic salesman and drags a ventriloquist's dummy around after coming to kill his father in the experimental novel *Berg* by Ann Quin, who lived her entire life in this city. Another novel set in this city ends with a woman returning to "the worst horror of all" after being told of the "appalling strangeness of the mercy of God." In this city, a character referred to as "the Boy" angrily fulfills his wife's wish for a gramophone record by recording (*) himself saying "God damn you...why can't you go back home for ever and let me be?" After murdering a man dropping cards around this city for a newspaper contest, a character tries to cover his tracks by marrying the waitress Rose and tricking her into a suicide pact, but this fails when he splashes vitriol on his face and jumps off a cliff. For 10 points, the teenage gangster Pinkie Brown appears in a Graham Greene novel titled for what city's "Rock"?

ANSWER: Brighton [accept Brighton Rock]

<Long Fiction, Bollinger et al>

15. Samuel Beckett's obsession with this image, a copy of which hung in his childhood bedroom, inspired him to have the mime Helfrid Foron portray its subjects in his final TV play, *Nacht und Träume* ("NAKT und TROY-muh"). An apocryphal story claims this image was created to commemorate the injuries the artist's brother sustained working in a mine after they drew lots to decide who would pursue an art career. Christof Metzger argues that this image was intended as an advertisement for the artist, not as a study for the Heller Altarpiece. Andy (*) Warhol made a blotted line copy of this image, which inspired the engraving on his gravestone. This pen-and-ink drawing on blue paper depicts its highly-naturalistic title objects disembodied and emerging from a pair of cuffs. For 10 points, identify this Albrecht Dürer sketch that is ubiquitous in tattoos and on the walls of Christian households because it depicts a gesture of religious contemplation.

ANSWER: Praying Hands [accept anything answer indicating Dürer's sketch of hands in prayer; prompt on Dürer's hands by asking "what are the hands doing?"]

<Painting/Sculpture, Bollinger et. al>

16. In a dialogue from this book, an exiled minister says "the world is muddy" and "the people are drunk," to which a fisherman replies by suggesting the minister should drink with them. Though it's not a work of philosophy, A.C. Graham suggested that a set of 172 "raving questions" in this book were first written on the walls of shrines and palaces. This book's best-known entry is a long elegy celebrating "three kings of old" who were "most pure and perfect," whose speaker grieves for being born at a time when his country's statesmen have no virtue. Entries in this book include the (*) "Heavenly Songs," the "Nine Songs," and an autobiographical "Lament" often called "Encountering Sorrow." It was compiled in the 2nd century C.E. by Wan Yi and includes many poems by Song Yu and Qu Yuan ("choo y'wen"). For 10 points, the two major ancient Chinese poetry collections are *The Book of Odes* and which other one, named for a Warring State?

ANSWER: Songs of Chu [or Verses of Chu, or Songs of the South, or Chu Ci, or Ch'u Tz'u; reject "The Book of Songs" or "The Book of Odes"]

<Poetry, Will Alston>

17. Six-month-olds raised by English speakers and speakers of this language showed how prototypical vowels like I and Y attract nearby stimuli in a space-warping “perceptual magnet effect” described by Patricia Kuhl. In the 1970s, this language reformed a system of politely addressing people using occupations, titles, and third person and replaced it with the universal second-person pronoun “du.” The only remaining exclusively phonemic I·P·A letter, resembling an “h” with upper and lower hooks, represents a disputed sound unique to this pitch-accent language; that sound is usually realized as a voiceless (*) labialized palatal or velar fricative and is sometimes spelled “s-j.” This language’s new unofficial gender-neutral third-person singular pronoun “hen” may have been popularized due to a similar Finnish word. For 10 points, what largest North Germanic language is part of a mutually intelligible continuum with Norwegian and Danish?

ANSWER: Swedish [or svenska]

<Social Science: Ling, Bollinger et al.>

18. The assassination of a Socialist minister in this country by two Tunisian hitmen led to the exposure of corrupt arms deals in the Agusta scandal. During the 1980s, a gang consisting of “the Giant,” “the Killer,” and “the Old Man” killed twenty-eight people in a series of robberies in this country often linked to the far-right Westland New Post. Testimonies called the “X-files” attested to the existence of a pedophile ring among this country’s elite. In this country’s capital, 300,000 people took part in the 1996 “White March,” protesting government protection of the (*) Epstein-like figure Marc Dutroux (“duh-TROO”). A king of this country abdicated over his unconstitutional actions during World War II in favor of his son Baudoin (“bow-DWAHN”). In 2002, this European country formally apologized for a 1961 assassination near Elisabethville, likely supported by Joseph Kasa-Vubu. For 10 points, name this country which orchestrated Patrice Lumumba’s death in one of its former colonies.

ANSWER: Kingdom of Belgium [or Royaume de Belgique or Königreich Belgien]

<Euro History, Bollinger>

19. In a method introduced to diagonalize this physicist's XXX (“x-x-x”) model, the wave function in each of the n -factorial regions of configuration space where n quasiparticles are separated from one another is written as a superposition of plane waves. Eigenstates of a model created by this physicist are quasiparticles used to explain the reduction of magnetization in Bloch’s three-halves law. Hans Bethe formulated his *ansatz* to solve a model created by this physicist. The eigenstates of that model are magnons. Unlike a similar model, the Hamiltonian of a model created by this physicist uses a product of (*) spin (emphasize) operators to express the exchange term. The Mermin–Wagner theorem applies to a model created by this physicist because it has a continuous symmetry, unlike the Ising model. In this physicist’s picture of quantum mechanics, operators are time-dependent. For 10 points, what physicist names the statement “delta-x times delta-p is at least h-bar over two”?

ANSWER: Werner Heisenberg

<Physics, Jonathen Settle>

20. One of this thinker’s books imagines a culinary contest amongst thirty empires and delineates 72 species of male cuckold in sections published separately as *The World War of Small Pastries* and *The Hierarchies of Cuckoldry and Bankruptcy*. This thinker wrote about “anti-whales” pulling ships, “anti-beavers” assisting with fishing, and humans walking about with a tail topped with a hand called the “archibras.” This thinker classed himself as an “omnigyne” because he was receptive to all twelve passions in his book *The (*) New Amorous World*. This coiner of the word “feminism” estimated that 37 million playwrights equal to Molière would inhabit a world orbited by six moons and covered in lemonade oceans during the era of Perfect Harmony. Horace Greeley funded a “North American” settlement based on this thinker’s idea of communities inhabited by exactly 1,620 people, termed “phalanxes.” For 10 points, name this French utopian socialist.

ANSWER: Charles Fourier

<Other Academic, Bollinger et al.>

BONUSES

1. In *Les Misérables*, the plucky orphan Gavroche (“gah-VROSH”) sings a ditty that repeats “Tis the fault of [one of these two people]...Tis the fault of [the other of them]” while being shot at by soldiers. For 10 points each:

[10h] Name these two people who are told, “You throw the sand against the wind / And the wind blows it back again” in a poem that taunts them to “mock on.”

ANSWER: **Voltaire** [or François-Marie **Arouet**] AND Jean-Jacques **Rousseau**

[10e] This poet of “Mock on, Mock on, Voltaire, Rousseau” described the “fiery cloud of Voltaire, and thund’rous rocks of Rousseau” in his poem “The French Revolution.” This poet also wrote “The Chimney Sweeper.”

ANSWER: William **Blake**

[10m] Blake’s “Mock On, Mock On” declares that the ideas of Democritus and this person “are sands upon the Red sea shore / Where Israel's tents do shine so bright.” A line by Alexander Pope declares that “God said ‘Let [this person] be,’ and all was light.”

ANSWER: Sir Isaac **Newton**

<Poetry, Bollinger et al.>

2. In the first step of this cycle, carbamoyl phosphate is combined with ornithine to form citrulline, a reaction catalyzed by ornithine trans-carb-amyase in the mitochondria. For 10 points each:

[10e] Name this biochemical cycle which takes the ammonia generated from breaking down proteins and transforms it into a more easily excreted molecule.

ANSWER: **urea** cycle

[10m] Argi·nino·succinate lyase cleaves argi·nino·succinate into arginine and this other molecule, which connects the urea cycle to the Krebs cycle. This molecule is the trans isomer of maleic (MALE-ee-ik) acid.

ANSWER: **fumarate** [or **fumaric acid**]

[10h] This molecule is an allosteric activator of carbamoyl phosphate synthetase I, which is the key regulatory step of the urea cycle.

ANSWER: **NAG** [or **N-acetyl glutamic acid** or **N-acetyl glutamate**]

<Biology, Eric Mukherjee>

3. An example of these techniques is found in Giordano Bruno’s “Italian Dialogues,” in which the speaker names a number of London places to help better contemplate a discussion of the Sun at supper. For 10 points each:

[10m] Historian Frances Yates wrote a book titled for what set of techniques, known by a three-word English or two-word Latin name? This set of techniques includes the “method of loci” developed by Simonides of Ceos.

ANSWER: the **art of memory** [or **ars memoriae**]

[10e] The first section of Yates’s book describes how this author interpreted the “method of loci” for a Roman audience. Erasmus attacked contemporaries for slavishly imitating the Latin of this author of *De re publica*.

ANSWER: **Cicero** [or Marcus Tullius **Cicero**; or **Tully**]

[10h] Yates suggests that this English physician’s version of the “memory theater” system inspired the layout of the Globe Theatre. This kabbalist and occultist philosopher defended hermetic approaches to learning and wrote against the scientific method in letters to Johannes Kepler.

ANSWER: Robert **Fludd** [or Robert de **Fluctibus**]

<Historiography, Bollinger et al.>

4. Elizabeth Povinelli used a portmanteau of this word with “geo” and “power” to describe the “late liberal” differentiation of “Life” and “Nonlife.” For 10 points each:

[10h] What discipline names a contemporary “turn” in anthropology that emphasizes how “worlds,” and not just “world-views,” vary across cultures? Eduardo Viveiros de Castro spearheaded the movement named for this discipline in articles like “Cosmological Deixis and Amerindian Perspectivism.”

ANSWER: **ontology** [accept the **ontological** turn or word forms; accept **geontology** or **geontopower**]

[10m] Proponents of the “ontological turn” often cite this French theorist’s critique of the “modern constitution” which assumes a single, unchanging nature. This thinker re-evaluated the word “social” in *Reassembling the Social*.

ANSWER: Bruno **Latour** (The “modern constitution” critique is from *We Have Never Been Modern*.)

[10e] The ontological turn is a radical take on this principle of anthropology, established by Franz Boas, which holds that practices and values should be understood within the context of a culture and not compared to others.

ANSWER: cultural **relativism** [reject “relativity”]

<Social Science: Socio/Anthro, Bollinger et al.>

5. Many of Simone Leigh’s sculptures incorporate skirts made of this material, such as her sculpture honoring the choreographer Katherine Dunham. For 10 points each:

[10m] Name this fiber obtained from a namesake species of palm, which the Kuba people used to make intricate cloth artworks. This straw-like material is often sold at craft stores and woven into designer bags and shoes.

ANSWER: **raffia**

[10h] This artist’s *Witch* series uses raffia as decorative hair for many of its pieces, such as *Women’s Liberation Talking Mask*. This artist’s similar *Family of Woman Mask* series includes a life-sized statue of Wilt Chamberlain.

ANSWER: Faith **Ringgold**

[10e] Amedeo Modigliani depicted the raffia costumes of Africans performing this action in his sculpture *Head of a Woman*. Pierre-Auguste Renoir painted people performing this action at Moulin la Galette (“mu-LAN la guh-LET”)

ANSWER: **dance** [or **dancing**; accept **Dance** at *Moulin la Galette*]

<Painting/Sculpture, Bollinger et al.>

6. Complete forms of this property imply the absence of chaotic orbits. For 10 points each:

[10m] Name this property of Hamiltonian systems whose phase space is foliated by invariant torii. The KAM theorem says that small perturbations of Hamiltonian systems with this property result in stable quasiperiodic orbits.

ANSWER: **integrable** [accept word forms such as **integrability**]

[10h] Integrability is completely destroyed when the energy equals one-sixth in this model, at which point its equipotential in the x-y plane is an equilateral triangle. Two cubic perturbation terms couple together two harmonic oscillators in this model created to find a third integral of motion for the movement of stars about the galactic center.

ANSWER: **Hénon–Heiles** (“ay-NON high-lez”) potential

[10e] As the energy increases for the Hénon–Heiles potential, a “strange” one of these trajectories appears. Systems tend to evolve towards these subsets of phase space.

ANSWER: **attractors** [accept **strange attractors**]

<Physics, Jonathen Settle>

7. This author co-founded Sorosis, the first professional women's club in the US, after she and several other women were not allowed to hear a lecture by Charles Dickens. For 10 points each:

[10h] Name this author who fictionalized her own rise to fame after the death of her husband Charles in her best-known novel, *Ruth Hall*.

ANSWER: Fanny **Fern** [or Sara Payson **Willis**]

[10m] Fern rose to fame primarily through her work in this occupation, which earned her as much as \$100 per week in the 1850s. In another novel, a character with this job is killed by an exploding gun during a "religious experience" in which he tries to cure the disabled man Peter Doyle.

ANSWER: newspaper **columnist** [or advice **columnist**; accept equivalents such as **column writer**; reject "journalist"] (The latter novel is *Miss Lonelyhearts*.)

[10e] One of Fern's columns expresses great admiration for this novel, which likely influenced the themes of *Ruth Hall*. This novel's protagonist works at Thornfield Hall.

ANSWER: **Jane Eyre**

<Long Fiction, Will Alston>

8. For 10 points each, answer the following about *cabildos abiertos*, a type of open political meeting common in Latin American history:

[10m] A famous *cabildo abierto* launched a revolution in Buenos Aires named for this month, in which the government of Baltasar Hidalgo de Cisneros was replaced with an assembly called the First Junta.

ANSWER: **May** [or **Mayo**]

[10e] This South American country's Cabildo Abierto party bases its political philosophy on this country's founding hero, José Gervasio Artigas. This country witnessed an uprising by the Tupamaro guerilla group in the 1960s.

ANSWER: **Uruguay** [or Oriental Republic of **Uruguay**]

[10h] On July 20, 1810, a *cabildo abierto* in Bogotá declared Colombian independence after pro-independence *criollos* broke one of these objects belonging to the cranky merchant José González Llorente ("yoh-REN-tay").

ANSWER: a flower **vase** [or **florerio**; accept **Florerio** de Llorente]

<World History, Will Alston>

9. For 10 points each, answer the following about appearances of the Toltecs in esoteric religious movements:

[10e] Members of this movement such as Annie Besant claimed that 27-foot-tall, airship-flying Toltecs ruled Atlantis, making them part of the "root races" theorized by this group's founder Helena Blavatsky.

ANSWER: **Theosophy** [accept word forms like **Theosophists** or **Theosophical** Society]

[10m] A perennially best-selling New Age book by Don Miguel Ruiz is named for this many Toltec principles, including "be impeccable with your word." In Aztec tradition, this many miniature Tlalocs hold up the world.

ANSWER: **four** [accept *The **Four** Agreements*]

[10h] Carlos Castaneda recalls getting extremely high and learning ancient Toltec spirituality from a probably-fictional shaman of this ethnic group in *The Teachings of Don Juan*. These indigenous people of the Sonora desert use rattles made of butterfly cocoons in the "deer dance."

ANSWER: **Yaquis**

<Misc. Belief, Bollinger et al.>

10. For 10 points each, answer the following about the career of the soprano Dawn Upshaw:

[10e] Upshaw featured as a soloist on a recording of this Polish composer's *Symphony of Sorrowful Songs*, which unexpectedly went platinum a full fifteen years after the piece's premiere.

ANSWER: Henryk **Górecki** ("GOH-ret-skee")

[10m] Upshaw sang the soprano part at the premiere of this composer's "nativity oratorio" *El Niño*. Upshaw's album *The World Is So Wide* includes her singing this composer's aria "This Is Prophetic."

ANSWER: John **Adams** ("This is Prophetic" is from *Nixon in China*.)

[10h] Upshaw adjusted the pitches of ceramic bowls by adding and removing water at the premiere of this 2017 piece by Caroline Shaw. Composed for New York's So Percussion, this Shaw piece adapts four hymns about the River Jordan from the collection *The Sacred Harp*.

ANSWER: **Narrow Sea**

<Classical/Opera, Bollinger et al.>

11. This sentence titles the third novel in Claude Mauriac's tetralogy *The Interior Dialogue*. For 10 points each:

[10h] According to the Surrealist Manifesto, Paul Valéry refused to write novels because he could never bring himself to write what banal observational sentence about a certain character's departure?

ANSWER: "The **Marquise Went Out at Five O'Clock**" [or "La **marquise sortit a cinq** heures"]

[10e] Valéry's famous complaint was related to this friend of his, who wrote the *Surrealist Manifesto* as well as the novels *Nadja* and *The Magnetic Fields*.

ANSWER: Andre **Breton**

[10m] This author wrote "At five o'clock he rests in his Marquise" in the fourth of ten "base sonnets" in his *One Hundred Thousand Billion Poems*. A novel by this author features the jeans-loving "homosexual" Gabriel, who works as a female impersonator.

ANSWER: Raymond **Queneau** (The novel is *Zazie in the Metro*.)

<Misc. Lit, Matt Bollinger>

12. These transitions normally have an extinction coefficient less than 1000, and one of them explains the blue color of copper sulfate. For 10 points each:

[10h] Name these electronic transitions in metal complexes, which are much weaker than MLCT and LMCT transitions.

ANSWER: **d-d transitions** [accept answers like "**transitions between d orbitals**"]

[10m] d-d transitions are weak because of the Laporte rule, which states that a transition must change the parity of a centrosymmetric molecule. In that context, these two terms are used to designate even/symmetric and odd/antisymmetric orbitals.

ANSWER: **gerade** and **ungerade** [prompt on g and u with "what do those letters stand for?"; accept in either order]

[10e] Laporte's rule can be violated when d-orbitals mix with these other atomic orbitals, which can hold six electrons each.

ANSWER: **p** orbital

<Chemistry, Eric Mukherjee>

13. For 10 points each, answer the following about British frauds involving distant foreign lands:

[10e] In the 1820s, Gregor MacGregor claimed to have been ordained as the *cacique* of the fictional country of Poyais (“poh-YICE”), which supposedly contained fertile land along this coast of Honduras and Nicaragua.

ANSWER: **Mosquito** Coast [or **Miskito** Coast]

[10m] The fraudster George Psalmanazar invented a language and alphabet for this island and claimed to be part of a race of child-eating savages. Psalmanazar said he had been converted by the Dutch, who had actually evacuated this island decades earlier after losing Fort Zeelandia.

ANSWER: **Formosa** [or **Taiwan**]

[10h] For several months in 1817, Mary Baker posed as this princess from the fictional island of Javasu. A letter to the *Bristol Journal* claimed that, while in exile on St. Helena, Napoleon met this princess and applied for papal dispensation to marry her.

ANSWER: Princess **Caraboo**

<Euro History, Will Alston>

14. This photographer got his start at *Interview* magazine on a recommendation from Andy Warhol, whom he photographed between a pair of Bibles on a bookshelf. For 10 points each:

[10h] Name this photographer best known for his kitschy surrealist commercial photos of celebrities, such as *Nicky Minaj: Superbass*, *Angelina Jolie with Horse in Meadow*, and a photo of Michael Jackson as an archangel.

ANSWER: David **LaChapelle** [reject “Chapelle” or “Dave Chapelle”]

[10e] LaChapelle’s many photos of Amanda Lepore include one of her as this other actress, whom Andy Warhol made many silkscreen prints of.

ANSWER: Marilyn **Monroe** [or Norma Jean **Mortenson**]

[10m] A photo by LaChapelle features this designer and Isabella Blow “burning down the house.” This designer’s Hitchcock-influenced designs include the pieces exhibited in *Birds*, in which the namesake animals appear as both majestic images and roadkill on various items of clothing.

ANSWER: Alexander **McQueen**

<Other Arts: Visual, Will Alston>

15. According to one text, people who memorize this text will be rewarded by being allowed to bring 10 other people to paradise by interceding on their behalf. For 10 points each:

[10e] Name this text, whose tradition of memorization draws on an angel’s command for a prophet to “recite” it in the Hira cave.

ANSWER: **Quran** [or **Koran**]

[10m] When someone is able to recite the Quran in accordance with these rules for pronunciation and intonation, they may be known as Qari. These rules are meant to recreate the pronunciation used by Muhammad.

ANSWER: **tajwid**

[10h] In theory, any imitation of Muhammad’s pronunciation would be based on one of the seven styles of recitation given by Gabriel, which are known by this Arabic term. These styles are distinct from the *qira’at*, which were developed centuries later and are still practiced.

ANSWER: **ahruf**

<Theology/Practice, Brad McLain>

16. This theory was outlined in Jonathan Dancy's *Ethics Without Principles* and a paper by Margaret Little about "Moral Realism." For 10 points each:

[10h] Name this theory from meta-ethics which holds that moral judgments are what ground general moral principles and not vice versa.

ANSWER: moral **particularism** [accept word forms such as a theory about moral **particulars**]

[10e] Moral particularism deems that all theories of this type of ethics are meaningless. This kind of ethics focuses on how one ought to act and is often contrasted with positive or descriptive ethics.

ANSWER: **normative** ethics

[10m] The term particularism as applied to moral philosophy was first applied to ethical philosophy in this author's book *Freedom and Reason*. He championed a form of universal prescriptivism in *The Language of Morals*.

ANSWER: Richard (Mervyn) **Hare** [or R.M. **Hare**]

<Philosophy, Ike Jose>

17. Allegations of racial discrimination against this city's Housing Authority include a 1966 lawsuit brought by Dorothy Gatreux and spurred much of the controversy around "Operation Clean Sweep" in the 1980s. For 10 points each:

[10m] Name this city whose mid-1960s "Freedom Movement," also known as the "open housing movement," is often credited with inspiring the Fair Housing Act.

ANSWER: **Chicago**, Illinois [accept **Chicago** Freedom Movement or **Chicago** Open Housing Movement]

[10e] This activist was appointed to head the SCLC's Operation Breadbasket in Chicago as part of the Freedom Movement. He later led a moderate version of the "Rainbow Coalition" in the 1980s.

ANSWER: Jesse **Jackson**, Sr.

[10h] As part of the Chicago Freedom Movement, MLK led a march in this park near an all-white neighborhood to protest redlining. As part of the resolution to the Skokie case, the National Socialist Party of America was allowed to resume its demonstrations in this park, which had been banned in 1971.

ANSWER: **Marquette** Park

<American History, Will Alston>

18. R·P·K·I could be used to secure this protocol by providing route origin verification. For 10 points each:

[10m] Name this protocol whose NEXT-HOP attribute is typically set using O·S·P·F. This protocol glues the Internet together by routing information between autonomous systems.

ANSWER: **BGP** [or **Border Gateway Protocol**]

[10e] Autonomous systems are usually controlled by one of these organizations commonly known by a three letter acronym. The largest of these organizations in the U.S. are Comcast Xfinity and Verizon Fios.

ANSWER: **ISPs** [or **Internet Service Providers**]

[10h] To prevent creating one of these structures, a router receiving an UPDATE message over external B·G·P will check the AS-PATH ("A-S-path") attribute before adding its own A·S·N. A poison reverse set-up in distance-vector protocols avoids these structures.

ANSWER: routing **loops**

<Other Science: Computer Science, Jonathen Settle>

19. This drug was tested in the 1970s on African workers on farms in Rhodesia without their knowledge, which

prompted Robert Mugabe's government to severely restrict its use. For 10 points each:

[10h] Name this drug. In another scandal, the newspaper *Haaretz* alleged that this drug was non-consensually administered to hundreds of Ethiopian women who had been evacuated in Operation Solomon.

ANSWER: **Depo** Provera [or **depo** shot or **DMPA**; prompt on birth control or contraception; reject "the pill"]

[10e] In 2016, this country's State Controller concluded that those Ethiopian immigrants who received Depo shots had consented to them. Earlier, this country brought many Yemenis in via Operation Magic Carpet.

ANSWER: **Israel** [or State of **Israel** or Eretz **Israel**]

[10m] In 2017, Israel ended its ban on Ethiopian Jews doing this action, though Knesset member Pnina Tamano-Shata said she was later barred from doing so anyway. A domestic shortage resulted when the "reciprocal" form of this action was banned in 2018 in China, where illegal forms of it were highly profitable in the 1990s.

ANSWER: **donating blood** [accept equivalents such as **blood donation**; accept answers that refer to **giving your blood** to people or **selling blood** because that's the illegal form referred to]

<Modern World, Will Alston>

20. The creator of these works began writing them on the suggestion of his friend Max Brod, who later published them after his death. For 10 points each:

[10m] Identify these works which contain drafts of their author's first published collection, *Contemplation*. Many of their entries discuss the author's inability to marry Felice Bauer.

ANSWER: Franz **Kafka**'s **diaries** [or **Kafka**'s **diary**; prompt on Kafka essays; reject "Kafka's letters"]

[10e] The diaries describe Kafka's fervent reading of this other German-language author, to whom Max Brod often compared Kafka. This author wrote the novellas *Michael Kohlhaas* and *The Marquise of O*.

ANSWER: Heinrich von **Kleist**

[10h] The unfinished stories sketched in Kafka's diaries include "The Village Schoolmaster," whose narrator writes scientific papers to prove that a giant example of these animals exists, thus vindicating the title character.

ANSWER: a **mole** [or **maulwurf**; accept "The Giant **Mole**" or "Der Riesen**maulwurf**"]

<Short Fiction, Will Alston>