

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

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TOSSUPS

1. **Fanning dispersion plumes only occur in extreme instances of these regions, and dangerous fumigation plumes are created if one of them forms above a chimney. One of these regions separates the turbulent atmospheric boundary layer from the free atmosphere above it. Pressure from the downward motion of an air mass creates the subsidence type of these regions, one of which semi-permanently exists above Los Angeles. The formation of one of these regions at nightfall is delayed and is found at a higher elevation than usual in urban settings due to the (*) heat island effect.** The distance from Earth's surface to the bottom of one of these regions is known as the mixing height because these regions limit the vertical dispersal of atmospheric gases. The lapse rate is negative in these regions that trap pollution close to the surface. For 10 points, name these regions in the atmosphere where temperature increases with altitude, which is opposite of their usual relationship.

ANSWER: inversion layers [or subsidence inversion layers; or capping inversion layer; prompt on cap or lid]

<Other Science: Earth Science, Jonathen Settle>

2. **While in a lavish villa, this film's protagonist chats about a red Mercedes with a man who is smoking a cigar and watching a cheesy German porno about a plumber. In this film, the song "This is Not A Love Song" plays during a sequence in which people and cars pass by a slumped man at superhuman speeds. Another sequence in this film zooms in on the eye of a dead horse, surrounded by flies, as a psychologist explains her theories of trauma. Its opening, in which a pack of menacing dogs scampers through town, is one of its many scenes that are predominantly in shades of (*) black and yellow.** This film is titled for a sequence in which a character boldly walks into the street to shoot enemies while beneath a poster of an assassinated member of the Gemayel family. It ends with real-life footage of the agony of refugees who were victims of the Sabra and Shatila massacre. For 10 points, name this animated film in which director Ari Folman recalls his time as an Israeli soldier.

ANSWER: Waltz With Bashir [or Vals Im Bashir]

<OArts: Film, Will Alston>

3. **In one novel, this story is called "the symbol story of the human soul" by a character who compares a figure from it to a child who kicks the cat. Three men discuss this story after one of them punches another for not naming his toddlers in a passage which notes that this story is only sixteen verses long. This pre-20th century story is mirrored by the tale of Cyrus's wedding, to which one character brings a blind dog. A group of elderly scholars were "brought out of their Chinese shells" by studying this story with a (*) rabbi's guidance, as described by the cook Lee. Different translations of "Do thou," "that shalt," and "thou mayest" are proposed for a word from this story, "timshel." An incident from this story is repeated when a man demonstrates that another man's mother is the sadistic Cathy Ames, causing him to die in World War I.** For 10 points, name this Biblical story which is reflected in the novel *East of Eden* by the tale of Cal and Aron Trask.

ANSWER: the story of Cain and Abel [accept equivalents; prompt on Genesis]

<Long Fiction, Charles Hang>

4. This phrase titles a book which examines a so-called “paradox” about “needing more government...but fearing it,” exemplified by the notion that “networked threats need a networked response.” That book titled for this phrase, which examines “disaggregated,” “effective,” and “just” views of it, is by Anne-Marie Slaughter. Joseph Nye asked “What [this phrase]?” in an article responding to a speech named for it, which proclaims that “the test we face is great, and so are the stakes” and alludes to a “vision shared...in Helsinki.” That speech named for this phrase was delivered before Operation (*) Desert Storm by George H. W. Bush, who jointly used this phrase with Mikhail Gorbachev to describe Soviet-American partnership. This three-word English phrase is also a common translation of the three-word Latin motto at the bottom of the Great Seal of the United States. For 10 points, what phrase can also denote an idea that Davos, the Bilderberg Group, and others are conspiring to establish global governance?

ANSWER: New World Order [accept A New World Order or “What New World Order?”; prompt on World Order before “three-word”]

<American History, Will Alston>

5. This place is said to have been stained by the ashes of a thief who was burned to death by two hunters after stealing a bird they had speared earlier. When a group of settlers of this place refused an invitation to an *inma* ceremony, their neighbors summoned the devil-dog Kurpany to terrorize them. Many holes in this place were created when an army of brown pythons threw their spears at an offending boy. The greedy lizard Lungkata, who lived on this place, began a traditional farming practice by (*) burning the land around it, and also dropped stolen meat at the site of the nearby Mutitjulu (“moo-teet-joo-loo”) waterhole. The battle between the poisonous snake Liru and Kuniya Woman took place at this location, which is sacred to the local Anangu people, who believe that touching it grants them spiritual access to the mythical past or Dreamtime. For 10 points, name this sacred mountain in Australia.

ANSWER: Uluru [or Ayers Rock; prompt on Australia before read]

<Legends, Will Alston>

6. In non-relativistic $\mathbf{Q} \cdot \mathbf{E} \cdot \mathbf{D}$, the commutator of this quantity with its conjugate momentum is proportional to the transverse delta function. Although Heaviside thought this quantity was only useful for calculations, Maxwell interpreted it as momentum per unit charge. When quantizing non-relativistic electromagnetic fields, each mode of this quantity must have two transverse polarizations perpendicular to the direction of propagation. The electromagnetic field tensor is defined as the exterior derivative of a quantity whose spacelike components are this quantity. The electromagnetic (*) canonical momentum must contain a term equal to charge times this quantity to give the correct equations of motion. The Laplacian of this quantity equals negative μ_0 times current density. Gauges like those named for Lorenz or Coulomb are required to uniquely specify this quantity. For 10 points, name this quantity whose curl is the B-field.

ANSWER: magnetic vector potential [or A; or magnetic potential; reject electromagnetic “four-potential”; reject “potential”]

<Physics, Jonathon Settle>

7. An Athenian envoy named Xenophanes mediated negotiations between this leader and a king who was acting at the encouragement of the exiled Demetrius of Pharos. After hearing a lecture by a peripatetic philosopher, this leader supposedly said that he had heard many old madmen before, but “never one madder than this Phormio.” A prophecy that this leader would be buried in “Libyssa Earth” was fulfilled when he died in the town of Libyssa in exile in the lands of Prusias I. This leader served as an adviser at the Battle of (*) Magnesia to Antiochus III, after which he was pursued by Titus Flamininus and later poisoned himself in Bithynia (“bih-THIN-ee-uh”). This general signed an alliance with Philip V after the latter learned of this man’s ambush of Gaius Flamininus, whose forces were trapped by this general against a body of water. For 10 points, name this general whose Numidian horsemen helped him win at Lake Trasimene.

ANSWER: Hannibal Barca [prompt on Barca]

<Ancient History, Will Alston>

8. Horace Walpole’s speculation on the use of these objects in war is discussed in *The Age of Wonder* by Richard Holmes, who wrote a 2014 book about their history. In a novel, the young protagonist sees a flock of seagulls while surveying for an experiment with one of these objects near Wilde Hall. An illustration of one of these objects called “Victoria” accompanied an article proclaiming an “arrival on Sullivan’s Island” which never actually happened. The abolitionist Titch and his prodigy build one of these objects on a Barbadian plantation in (*) Esi Edugyan’s novel *Washington Black*. The *New York Sun* printed an article claiming that Monck Mason accomplished a feat with these objects, which was actually a hoax by Edgar Allan Poe. Five Union prisoners use one of these devices to escape a Confederate prison in Jules Verne’s novel *The Mysterious Island*. For 10 points, name these vehicles, another example of which transports a conman from Omaha to become the Wizard of Oz.

ANSWER: hot air balloons [accept “The Balloon-Hoax”; accept sky-cutters]

<Misc. Lit, Will Alston>

9. Sixty silver leaves found at this place were carefully pieced together to reconstruct parts of a large statue of a bull. It’s not from Turkey, but the north frieze of a building in this place depicts several soldiers armed with *hoplon* shields fighting a lion in a well-preserved scene of the Gigantomachy. A pair of long-haired Archaic period *kouros* statues found at this place are commonly named Cleobis and Biton. A silver headband adorns a bronze statue from this place depicting a youth in robes, whose inlaid glass eyes still have a rusted brown-red tinge. The (*) Siphnian Treasury was found at this place, as well as a well-known green, bronze statue of a charioteer. Twenty Doric columns once supported the circular *tholos* at the Temple of Athena Pronaia at this place. A rock found at this site is adorned by a relief of a knotted net and may have served as the *omphalos* stone. For 10 points, name this site in Greece home to the Castalian Spring and, formerly, a tripod where an oracle sat.

ANSWER: Delphi [accept Oracle of Delphi or Delphi Archaeological Museum or Temple of Apollo at Delphi; prompt on Pythia]

<Painting/Sculpture, Will Alston>

10. This philosopher attached Isaac Asimov’s story “The Billiard Ball” to a book that praises Rene Barjavel’s novel *Ravage* as an exemplar of “extro-science fiction.” This philosopher posits a philosophical “Ptolemaic counter-revolution” in response to the scientific Copernican Revolution in a book that uses the example of an “isotope whose rate of emission we know” as evidence of “ancestral events.” The first chapter of this philosopher’s first book attacks the “correlationism” of Immanuel Kant and praises mathematics for giving humanity access to “the Great Outdoors.” This student of (*) Alain Badiou (“bah-DYOO”) coined the term “arche-fossil” in a 2006 work which calls itself an “essay on the necessity of contingency.” In another book, this author analyzes the concepts of eternity and chance using Mallarme’s “Un Coup de Dés.” For 10 points, name this contemporary French speculative realist, the author of *The Number and the Siren* and *After Finitude*.

ANSWER: Quentin Meillassoux (“may-SOO”)

<Philosophy, Ike Jose>

11. It has nothing to do with corrosion, but these devices suffer from a surface fatigue mode called pitting whose first sign is usually arrowhead-shaped pits in their dedendum. Hobbing creates these devices using a rack-shaped cutter. Two springs are inserted into these devices to prevent backlash, which is the clearance between mated features on pairs of these devices. So that these devices can be designed independently, they usually have an involute profile; when they have an involute profile, the line of action is constant and coincident with the line of contact. These devices experience the most wear due to (*) sliding motion at locations away from their pitch circle. When two of the spur type of these devices are paired, the smaller is referred to as the pinion. The fundamental law of these devices says that the angular velocity ratio in a “train” of them is constant. For 10 points, give these devices that transmit power via their teeth.

ANSWER: gears [or cogs; accept gear trains; prompt on transmissions; prompt on teeth or tooth with “teeth are a component of what devices?”]

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

12. In one work, after several men witness a flogging aboard the ship *Sirius*, they stage this play, for which the prostitute Meg Long auditions. In that work, Mary Brenham plays a character in this play who explains job requirements of “a bold step, a rakish toss, a smart cock, and an impudent air.” In this play, a fortune teller convinces a woman that he speaks with the Devil by showing the woman some of her own handwriting. In Timberlake Wertebaker’s play *Our Country’s Good*, this play is staged in an (*) Australian penal colony. This play ends after a man loses out on a twenty-thousand pound dowry due to a decision by the judges Mr. Scale, Mr. Scruple, and Mr. Balance. In it, the disguise of “Jack Wilful” is used by Sylvia to gain the attention of a military man who comes to Shrewsbury. For 10 points, name this comedy by George Farquhar (“FAR-kwar”) in which Captains Plume and Brazen seek to enlist troops.

ANSWER: The Recruiting Officer

<Drama, Will Alston>

13. A bishop who was on trial for slandering a ruler of this realm was saved when the slander turned out to have been rumors cooked up by his rival, Count Leudast, who was then beaten to death with a block of wood. That ruler of this realm burned a pile of tax records in penance for a plague of dysentery that killed two of her children, but then tried to spread the plague to kill the children of Audovera. An elaborate plot to have this realm’s queen Galswintha strangled was orchestrated by her romantic rival, its notoriously cruel queen (*) Fredegund; Fredegund later feuded with Brunhilda, the queen of this realm’s eastern neighbor. Much later, a margrave of this realm, Robert the Strong, consolidated power to become the first Capetian dynasty king. The lands that became this kingdom were formerly ruled by Syagrius from its capital city of Soissons (“swah-SOHN”). For 10 points, name this westernmost of the Merovingian Frankish kingdoms, a realm bordering Austrasia.

ANSWER: Neustria [accept Fredegund of Neustria; accept Kingdom of Soissons before “Soissons”; prompt on Merovingian kingdom or West Francia]

<Euro History, Will Alston>

14. This music critic praised one opera for articulating a vision of love as the “deadly hatred of the sexes.” This critic compared a different composer’s orchestration to a “sirocco” wind and wrote of that composer, is he “a human being at all? Is he not rather a disease?” This critic wrote “Yesterday I heard...Bizet’s masterpiece, for the twentieth time” to begin a book of essays which label a different composer as a “Danger” and an “Apostle of Chastity.” This critic’s own compositions include a (*) *Hymn to Friendship* for piano and the choral piece *Hymn to Life*, which he once conducted in Bayreuth (“BYE-royt”) for his friend Cosima. This critic claimed that themes of *Parsifal* (“PART-zee-vall”), particularly its Christianity, signalled its composer’s “hatred of life” in a book he wrote “contra” his erstwhile friend Richard Wagner. For 10 points, what philosopher argued that opera exemplified “Socratic culture” in his book about Apollonian and Dionysian influences, titled *The Birth of Tragedy*?

ANSWER: Friedrich Nietzsche

<Classical/Opera, Will Alston>

15. In an editorial titled for this researcher's “Affair,” David Marks cited the research of Louis Appleby to argue that many of his datasets were manipulated to show impossibly large effect sizes. Concerns about the veracity of this researcher's findings were first raised in a series of papers by Anthony Pelosi, who also criticized this researcher for publishing his most controversial results in journals where he had editorial control. This researcher was the subject of a 2019 King's College London probe into his (*) “unsafe” research, leading to dozens of retractions. With Ronald Grossath-Maticcek, this researcher argued that suppressed emotions were a bigger risk factor for cancer than smoking in a series of studies funded by tobacco companies. With his wife, Sybil, this psychologist developed a personality questionnaire measuring extraversion, neuroticism, and psychoticism. For 10 points, name this controversial British psychologist, the developer of the three-factor P-E-N model of personality.

ANSWER: Hans Jürgen Eysenck

<Social Science: Psych, Charles Hang>

16. During one of this people's ceremonies, worshipers call out to a deity known as *tunkashila*, or grandfather, whose name also titles a Gerald Hausman book about this people’s mythology. A holy man of this people repeatedly compared his role to that of a sacred clown spirit who is visited by the Thunderbeings. This people is the origin of a symbol of circular relationality known as the sacred hoop, or the Cangleska. This people originated a Eucharist-like ceremony where worshipers pass around a *chanupa*, which is one of their (*) “Seven Sacred Rites” described in Joseph Epes Brown’s book *The Sacred Pipe*. The teachings of a *heyoka* holy man of this people were collected by John. G. Neihardt in the book *Black Elk Speaks*. For 10 points, name this Indigenous American people, whose prominent spirits include the Great Mystery, or Wakan Tanka, and the White Buffalo Calf Woman.

ANSWER: Lakota [or Oceti Sakowin; accept Oglala Lakota; accept Dakota; accept Sioux; accept Teton; accept Yankton; accept Santee; accept Titunwan; prompt on Native Americans, First Nations, American Indians, Great Plains Indians, etc]

<Theology/Practice, Brad McLain>

17. Kashina et al showed that, because it is translated more slowly, this protein's gamma isoform is more likely to undergo N-terminal arginylation ("ARR-jinn-ull-AY-shun") than its beta form. *De novo* mutations in two of its isoforms are linked to Baraitser-Winter syndrome. A binding partner of this protein is mutated in familial Finnish-type amyloidosis. Thymosin-beta-4 binds to this protein to form a reservoir of it. Myo-fibro-blasts and fibro-blasts can be distinguished by staining for one form of this protein. The protein VASP helps a cell-surface protein of *Listeria* form (*) "comet tails" or "rockets" of this protein. Profilin and cofilin can accelerate this protein's treadmilling, which is stopped by Cap-Z binding to its barbed end. This protein is imaged using fluorescent-conjugated phalloidin ("fuh-LOY-din"). For 10 points, name this cyto-skeletal protein which transitions from globular to a fibrillar form when it polymerizes to form thin filaments.

ANSWER: actin [accept actin rockets]

<Biology, Eric Mukherjee>

18. This poet wrote "Many things we need can wait. The child cannot" and, regarding children, claimed "we cannot answer, 'Tomorrow.' His name is today." This poet concludes "the heart of him who joins us not / Is turned to dust, to dust" in a poem whose speakers invite a cripple, an invalid, a thistle, and God to join them. This poet declares "you are courageous without fault" because you "walk / through the streets so straight" in a poem whose title objects are "Bruised all over by pebbles / Abused by snow and soil!" This poet of (*) "Those Who Cannot Dance" and "Tiny Feet" describes the "sweetness / and care that a mother betrays towards her child" in a poem whose addressee is put "to bed in the sun-blest ground" after "wicked hands" took his life. For 10 points, name this poet of *Ternura*, or *Tenderness*, who lamented the suicide of the railroad worker Romelio Ureta in her *Sonnets of Death*.

ANSWER: Gabriela Mistral [or Lucila Godoy Alcaayaga]

<Poetry, Charles Hang>

19. In a book by Robert Bevan, the ideology of the perpetrators of this event is said to derive from Heidegger's belief of a "rootedness in native soil." This event resulted in the discovery of fifty caves, inside of which are the world's oldest-known oil paintings that have survived. This event partly centered on an object called "Solsol" whose name, meaning "year after year," bore symbolic importance for the thirteen prisoners of war who were (*) dangled on ropes and forced to carry it out. This event was the culmination of a campaign that included the razing of the city of Yakawlang ("YAHK-ow-long"), intended to break the culture of the Hazara peoples. It ostensibly took place after a group of Swedish scholars offered to restore the heads of two works in the Gandhara style, angering Mullah Omar. For 10 points, what action, carried out in 2001 by the Taliban, blew up some large religious statues?

ANSWER: destruction of the Bamiyan Buddhas [accept any reasonable answer which indicates blowing up the Buddha statues in Bamiyan Valley; prompt on destruction of Buddhas by asking "please name the valley where the Buddhas were found"]

<Modern World, Ike Jose>

20. A dispute between these two countries was a central issue in the founding of Ethiopia's M·L·L·T, at which Meles Zenawi rejected the larger one's advocacy of so-called "New Democracy." The larger of these two countries endorsed "principles of complete equality" for their relations in a 1964 joint statement and encouraged the smaller one to purge mosques and churches three years later. Relations between them soured after a U·N speech in which one of them put forth the "three worlds" view, which the other of them said was motivated by "self-interest" and "revisionism," but this healed when (*) Ramez Alia endorsed economic liberalization. The larger of these two countries pushed the smaller one to adopt the "people's war" doctrine and helped it finance thousands of bunkers and the Sigurimi secret police. An ideological split erupted in the mid-1970s between, for 10 points, what two Communist countries led by Enver Hoxha ("HO-zhuh") and Mao Zedong?

ANSWER: China AND Albania [accept PRC, or People's Republic of China, or Zhōnghuá Rénmín Gònghéguó for "China"; accept Shqip or Republic of Albania for "Albania"; accept Sino-Albanian split]

<CW / International Hist, Will Alston>

BONUSES

1. A 1986 paper by Oliver Hart and Sanford Grossman proposed a mechanism for realizing these agreements in the real world in which one of the agents purchases the “residual rights” not mentioned in one. For 10 points each:

[10h] Name these hypothetical agreements which, in practice, are not created due to the “hold-up problem,” as these agreements must take into account every possible future state.

ANSWER: **complete contracts** [prompt on **contracts**; reject “completed contracts”]

[10e] The theory of these entities developed by Hart, Grossman, and their colleague John Moore argues that they serve to mediate incomplete contracts. Ronald Coase argued that they exist to minimize transaction costs.

ANSWER: **firms** [or **companies**, or **corporation**; accept “The Nature of the **Firm**”; prompt on **businesses**]

[10m] Some economists argue that a “principle” from mechanism design named for this word allows the creation of complete contracts through proper selection of social choice functions. A variant of the word for this process names a theory introduced by Paul Samuelson based on studying choices made under a budget constraint.

ANSWER: **revealing** [or **revelation**; accept **revealed** preference or **revelation** principle; prompt on **preference** or **preferring**; reject synonyms, as these are terms of art in economics]

<Social Science: Economics, Charles Hang>

2. For 10 points each, answer the following about the Russian-French author Elsa Triolet (“tree-oh-LAY”):

[10e] Triolet was the first female winner of this literary prize for Francophone authors, which is named for a pair of 19th century literary brothers.

ANSWER: Prix **Goncourt** [or **Goncourt** Prize; accept **Goncourt** brothers]

[10m] Triolet’s career took off after Victor Shklovsky included some of her letters from this place in his own novel *Zoo* and encouraged her to write about it. In another novel, a man moves to this place after abandoning his mistress Blanche Stroeve, and later asks his new wife Ata to burn his house down before dying of leprosy.

ANSWER: **Tahiti** (The other novel is *The Moon and Sixpence*.)

[10h] The title of Triolet’s first French-language novel bids “goodnight” to a woman with this first name. Another literary character with this first name is the protagonist of *La Fin de la Nuit* (“la FEN de la NWE”), who rejects the advances of her daughter’s fiancé.

ANSWER: **Thérèse** [or **Teresa**; accept **Goodnight, Thérèse**, or **Bonsoir, Thérèse**, or **Thérèse Raquin**]

<Long Fiction, Charles Hang>

3. This city’s king Chimalpopoca apparently planned an elaborate ritual suicide, but was captured by Tepanec agents and hauled off in a cage, so he hung himself with his belt instead. For 10 points each:

[10e] Name this city whose king Itzcoatl (“eetz-KWAH-tul”) organized a triple alliance of cities to combat the influence of the Tepanec empire. It was the site of the great Templo Mayor dedicated to Huitzilopochtli.

ANSWER: **Tenochtitlan**

[10m] The Aztec triple alliance included these two other cities. One of them was led by Nezahualcoyotl (“ne-zah-wahl-co-YOH-tul”) while the other was a breakaway Tepanec city. Name both.

ANSWER: **Texcoco** AND **Tlacopan**

[10h] The alliance made its big move after this greatest Tepanec king died, supposedly at the age of 106. This king, portrayed in the Codex Xolotl (“shoh-LOH-tul”) as a tyrant and political genius, created a political stranglehold on the Mexico Valley by placing his sons on the thrones of numerous city-states.

ANSWER: **Tezozomoc**

<World History, Will Alston>

4. Interactions creating these features lead to a number of peaks equal to the nuclear spin times the number of equivalent nuclear spins in E·P·R spectroscopy. For 10 points each:

[10m] Name these features that appear in the electronic structure of a system due to interactions between spin and nuclear angular momentum. The Hamiltonian for them includes magnetic dipole and electric quadrupole terms.

ANSWER: **hyperfine** structure

[10e] E·P·R spectroscopy is commonly used to image these species, which contain an unpaired electron.

ANSWER: **radicals**

[10h] This pulsed E·P·R experiment uses two excitatory pulses to excite two spins. Then the dipole-dipole coupling between the two spins is used as a proxy for their distance.

ANSWER: **PELDOR** [or **pulsed electron double resonance** or **DEER** or **double electron-electron resonance**]

<Chemistry, Eric Mukherjee>

5. This author emphasized his thesis about the centrality of the family by noting that unmarried men were denied Spartan citizenship under the laws of Lycurgus. For 10 points each:

[10h] Name this French historian who argued that the politics of Hindus, Romans, and Greeks were essentially older religious traditions writ large in the book *The Ancient City*. This thinker taught Émile Durkheim.

ANSWER: Numa Denis **Fustel de Coulanges** (“foo-STEL duh coo-LAHNZH”) [accept either underlined portion]

[10e] This book by Durkheim draws on Fustel’s work in arguing that distinctions between human specialties developed first for religious reasons, then for secular ones, in a universalization of “mechanical solidarity.”

ANSWER: *The **Division of Labor in Society*** [or *De la **division du travail social***]

[10m] Fustel de Coulanges argues that Roman property rights arose because families had to placate their dead or they would become these vengeful spirits. These spirits, contrasted with the benevolent *lares*, were exorcised by throwing black beans around in a Roman festival in early May that later became All Saints Day.

ANSWER: **lemures** [or **larvae**; accept **Lemuria** festival]

<Other Academic, Charles Hang>

6. In the 1930s, this woman sought to become the “most painted woman in the world” by commissioning portraits of herself for her club from artists such as Picasso. For 10 points each:

[10h] Name this openly lesbian owner of the nightclub *La Vie Parisienne* (“lah vee pah-ree-SYEN”). The best-known portrait of her was made by her lover, the Art Deco artist and Polish aristocrat Tamara de Lempicka (“lem-PITS-kah”).

ANSWER: Suzy **Solidor** [or Suzanne Louise Marie **Marion**]

[10e] As part of her project, Solidor was photographed by this artist, who added an f-shaped hole to the back of Kiki de Montparnasse in his photograph *Le violon d’Ingres* (“luh VEE-oh-lohn DON-gruh”).

ANSWER: Man **Ray** [or Emmanuel **Radnitzky**]

[10m] Among the many portraits Solidor commissioned was an Expressionist one by this artist, who also portrayed a bare-shouldered Gertrude Stein against a green mountain landscape. Another of this artist’s paintings shows two gears labeled “femme” and “homme.”

ANSWER: Francis **Picabia** (The other painting is *Machine Turn Quickly*.)

<Painting/Sculpture, Charles Hang>

7. The Gaussian distribution is defined using one of these functions named for Lebesgue. For 10 points each:
[10e] Name these functions that must be countably additive. These functions assign positive numbers to sets.

ANSWER: **measures**

[10h] The PDF of the Gaussian distribution is determined from the Radon–Nikodym ("rah-dohn nick-oh-deem") theorem using the fact that the Gaussian probability measure has this property with respect to the Lebesgue measure. A measure ν is said to have this property with respect to μ if ν is zero whenever μ is zero.

ANSWER: **absolutely continuous** [or **absolute continuity**; prompt on **dominates** or **domination**; reject "continuous"]

[10m] The existence of this quantity for a random variable follows from the Radon–Nikodym theorem. For martingales, this value for a random variable relative to a filtration is the most recent observation of the variable.

ANSWER: **conditional expectation** [or **conditional expected value**; or **conditional mean**; reject partial answers]

<Other Science: Math, Jonathen Settle>

8. Because this test specifies "community standards" rather than national ones, federal prosecutors decided to file the 2005 *Extreme Associates* case in western Pennsylvania to get a better chance of conviction. For 10 points each:

[10m] Name this three-pronged legal test, established in a namesake 1971 case, whose final part examines if a material has "literary, artistic, political, or scientific" value.

ANSWER: **Miller** test [accept answers which refer to **Miller v. California**; DO NOT reveal otherwise, but prompt on **obscenity** test]

[10e] The *Miller* test is used by courts to identify if a material has this property. In 1964, the Supreme Court ruled that Henry Miller's novel *Tropic of Cancer* did not have this property.

ANSWER: **obscene** material [or **obscenity**; prompt on **pornography**]

[10h] The creation of the Miller test resolved confusion from the standards laid down in the *Roth* case and this other one. This case's defendant, who published *Eros* magazine, was imprisoned after the Supreme Court ruled that non-obscene advertisements could still be considered obscene if they promoted an obscene product.

ANSWER: **Ginzburg v. United States** (The defendant was Ralph Ginzburg.)

<American History, Charles Hang>

9. The title character remorsefully removes the "TRESPASSERS WILL BE PROSECUTED" sign from his garden in this author's story "The Selfish Giant." For 10 points each:

[10m] Name this author whose fairy tales are found in such collections as *The Happy Prince and Other Tales* and *A House of Pomegranates*.

ANSWER: Oscar **Wilde**

[10e] In another Oscar Wilde fairy tale, a man with this job learns that he must give up his soul to live with a mermaid. Santiago has this job in a novel by Ernest Hemingway.

ANSWER: **fisher**man [accept any answer which mentions **fishing**; reject "sailor"]

[10h] This other fairy tale by Wilde is a satire of Wilde's erstwhile friend James Whistler. Its arrogant title object declares "I like hearing myself talk. It is one of my greatest pleasures" and deludedly believes he creates a "great sensation" when two boys pick him out of the mud and set him off.

ANSWER: "The **Remarkable Rocket**"

<Short Fiction, Will Alston>

10. The stage backgrounds of this ballet are four paintings by Brice Marden, including *Thira*, a large canvas consisting of three large letters “T” against hues of red, dark blue, teal, and brown. For 10 points each:

[10h] Name this contemporary ballet choreographed by Pam Tanowitz, who says her work on it was inspired by lines about how an “exasperated spirit...must move in measure, like a dancer.”

ANSWER: **Four Quartets** (It’s inspired by the T. S. Eliot poems; the quote is from “Little Gidding.”)

[10m] The score of *Four Quartets* is by this Finnish composer, who collaborated with Amin Maalouf on an opera about the life of the troubadour Jaufré Rudel (“zhov-FRAY roo-DELL”), titled *L’amour de loin* (“luh-MOOR duh-LWAHN”).

ANSWER: Kaija **Saariaho** (“KYE-ah SAH-ree-ah-hoh”)

[10e] A musical quartet named for these people played Saariaho’s score for the first productions of *Four Quartets*. A piece often called the “Dance” of these people, also titled “Montagues and Capulets,” features in Sergei Prokofiev’s ballet *Romeo and Juliet*.

ANSWER: **knights** [accept The **Knights** or “Dance of the **Knights**”]

<OArts: Auditory, Will Alston>

11. The Medieval scholar Gersonides claimed that the stars and constellations were able to influence human lives by stirring up these substances, thus allowing wise men to subvert their fate. For 10 points each:

[10e] Give the collective name for these four substances that were thought to influence health and personality. The health implications for these substances were first outlined by Hippocrates and were popularized by Galen.

ANSWER: four **humors**

[10m] In *The Wars of the Lord*, Gersonides argued that this man was an astrologer because he cursed the day he was born. This man is asked a set of rhetorical questions about if he can free the Pleiades or loosen Orion’s belt when speaking with God through a storm.

ANSWER: **Job** [or **Yov** or **Iyvov**]

[10h] Gersonides echoed Abraham Ibn Ezra’s claim that the Jewish people’s historical troubles were due to the malevolent influence of this “hateful” celestial body. Amos reported that the Israelites were worshiping Kaiwan, an analogue of the Babylonian god of this body, Ninurta.

ANSWER: **Saturn** [or **Chiun**, or **Shabtai**, or **Sakkuth**]

<Misc. Belief, Brad McLain>

12. When Anderson Dawson led this party’s first-ever government for a week in 1899, it attracted international attention as one of the first state-level socialist governments in the world. For 10 points each:

[10e] Name this political party. As of 2021, the most recent Prime Minister from this party was Kevin Rudd, who left office in 2013.

ANSWER: **Australian Labor** Party [or **ALP**; prompt on **Labor** by asking “in which country?”]

[10m] Early in its history, the ALP split over how to deal with this event, leading to Joseph Lyons forming the United Australia Party. In Canada, so-called “Bennett buggies” proliferated due to this event’s consequences.

ANSWER: The **Great Depression** [prompt on **Depression**]

[10h] This populist premier of New South Wales led a separate breakaway from Labor by members who opposed Depression-era austerity. This politician proposed forgoing interest payments to Britain to instead build infrastructure and suggested replacing the gold standard with a “Goods Standard.”

ANSWER: Jack **Lang** [or J. T. **Lang** or John Thomas **Lang**]

<CW / International History, Charles Hang>

13. The author of *A Piece of My Heart* and *The Ultimate Good Luck* took up this profession for a while despite his initial success, which helped cultivate his style of “dirty realism.” For 10 points each:

[10m] Name this profession which titles a semi-autobiographical novel in which Frank Bascombe picks it up after giving up on writing fiction.

ANSWER: **sportswriter** [or **sports journalist** or **sports columnist**; accept *The Sportswriter*; prompt on **journalist** or **columnist**] (*The Sportswriter* is by Richard Ford.)

[10e] This long-time sportswriter and co-founder of the *Paris Review* wrote the book *Paper Lion*, in which he attended the Detroit Lions training camp to try to become a quarterback.

ANSWER: George **Plimpton**

[10h] This sportswriter received acclaim for “The Rocky Road of Pistol Pete” a profile of Pete Reiser after retirement. *The Top of his Game* collects articles by this author, who co-wrote *MASH* with Richard Hooker.

ANSWER: W. C. **Heinz** [or Wilfred Charles **Heinz**]

<Misc. Lit, Charles Hang>

14. In the mode-coupling theory of glass phenomenology, equilibration processes within traps are described by the beta exponent, while processes contributing to these effects are described by the alpha exponent. For 10 points each:

[10h] Name these effects that occur in the glass phase because there is a dependence on the waiting time. These effects occur due to the out of equilibrium evolution of a system quenched into a glassy state.

ANSWER: **aging** effects

[10m] Aging occurs in glasses because this quantity is not infinite immediately after vitrification. In NMR, two of these quantities are decay constants for the return of components of the magnetization to their equilibrium value.

ANSWER: **relaxation times** [accept spin-spin **relaxation time** or spin-lattice **relaxation time**]

[10e] In the aging phase, the celebrated theorem connecting random internal fluctuations to this process no longer holds. In this irreversible process, energy is lost to undesired sources like heat.

ANSWER: **dissipation** [or word forms like **dissipate**; accept **fluctuation-dissipation** theorem]

<Physics, Jonathen Settle>

15. The first recorded instance of this boast is thought to be from Fray Francisco de Ugalde, which was echoed in a remark about Philip II’s daughter in Giovanni Guarini’s play *Il pastor fido*. For 10 points each:

[10h] Identify this boast which is often considered to be evoked by the motto *Splendor sine occasu*, which is found on British Columbia’s coat of arms. This boast was also made by the diplomat George Macartney after his nation’s triumph in the Seven Years’ War.

ANSWER: the **sun never sets** (on whichever empire) [accept answer referring to the **sun** never **setting** on some sort of empire, particularly British or Spanish ones]

[10e] The phrase “the sun never sets on the British empire” was literally true because its territories had this property with regards to one another. This term refers to being on the opposite side of the Earth, or any sphere.

ANSWER: **antipode** [or **antipodal**]

[10m] For example, this British territory is approximately antipodal to New Zealand’s beach of Te Arai. This territory’s tourist attractions include St. Michael’s Cave, where its macaque population legendarily migrated to.

ANSWER: **Gibraltar** [or **Jebel Tariq**]

<Geography, Will Alston>

16. The absence of this reflex is thought to be diagnostic of torsion, though it is often preserved. For 10 points each:
[10m] Name this reflex whose sensory branch lies in the ilio-inguinal and genito-femoral nerves, and is elicited by stroking the inner thigh.

ANSWER: **cremasteric** reflex

[10e] The cremaster muscle is responsible for drawing up this structure, which is the most common site for angiokeratoma of Fordyce. This is the sac that contains the testes.

ANSWER: **scrotum**

[10h] In this other fairly nonspecific clinical test, the scrotum is lifted to see if testicular pain goes away. If this sign is positive, testicular pain is lessened by lifting, indicating epididymitis (“EP-uh-did-uh-MY-tis”).

ANSWER: **Prehn’s** sign

<Biology, Eric Mukherjee>

17. This collection is sometimes paired with its composer’s piano setting of the hymn “Cantar del alma,” as both were inspired by contemplation of St. John of the Cross. For 10 points each:

[10h] Name this set of 28 simple, sparse piano pieces. Its pieces’ titles all consist of Italian, French, Catalan, or Spanish adjectives evoking their mood, such as the first one, “Angelico.”

ANSWER: **Musica Callada** [or *The Voice of Silence* or **Silent Music**]

[10e] Federico Mompou said that his (“mom-POE’z”) *Musica Callada* exemplified *recomençament* (“reh-koh-men-sah-ment”) like the freeform piano pieces of this French composer, such as *Desiccated Embryos* and the *Gnossiennes*.

ANSWER: Erik **Satie**

[10m] Mompou’s other works include some variations on the seventh of these piano pieces, described by Alfred Cortot as evoking “sensational memories.” The fifteenth of them is in D-flat major and features a repeated A-flat.

ANSWER: **Chopin’s preludes** [accept any answer indicating the **preludes** of Frederic **Chopin**; prompt on **preludes** by asking “of which composer?”] (The latter piece is the so-called “Raindrop” prelude.)

<Classical/Opera, Will Alston>

18. A paper about these constructs introduces a fake word called “Dthat” (“dee-that”) to clarify the situations in which these constructs are used. For 10 points each:

[10m] Name these context-sensitive expressions which are defined in the paper “Demonstratives” by David Kaplan. Examples of them include pronouns, since their referent changes depending on factors such as who uses them.

ANSWER: **indexicals**

[10h] Years before David Kaplan’s thorough treatment of them, this philosopher discussed indexicals, referring to them as “token-reflexives” in his book *Elements of Symbolic Logic*. This thinker defined philosophy as the “study of problems” in his book *The Rise of Scientific Philosophy*.

ANSWER: Hans **Reichenbach**

[10e] The term “indexicals” derives from the index presented in Charles Sanders Peirce’s (“purses”) theory of this discipline, which is the philosophical study of signs.

ANSWER: **semiotics**

<Philosophy, Ike Jose>

19. In this city, the activist Paul Stephenson staged a sit-in in the Bay Horse pub in 1964, leading to his arrest for failing to leave the premises. For 10 points each:

[10h] Name this British city where Stephenson helped organize a mass boycott of buses in 1963 after its Omnibus Company refused to employ Black or Asian drivers.

ANSWER: **Bristol**

[10m] Protests during the Bristol bus boycott were harassed by youths belonging to this subculture, who were also prominent during the 1958 Notting Hill race riots. Male members of this subculture typically wore long, draped jackets and loose shirts with “Mr. B” collars.

ANSWER: **Teddy** Boys [or **Teddy** Girls]

[10e] This organization, whose racial discrimination was investigated by the Macpherson report, ignored many violent incidents reported during the Notting Hill riots. This organization was established in 1829 by Robert Peel.

ANSWER: **London police** force [or **Metropolitan Police** Service, or The **Met.** or **Bobbies**; prompt on police]

<Euro History, Will Alston>

20. One of these works by the woodblock printer Yoshitoshi describes the summer moon “holding back the night / with its increasing brilliance.” For 10 points each:

[10h] Identify this type of literary work often composed as a *haiku*. The twelfth chapter of Natsume Sōseki’s novel *Kusamakura* discusses the student Misao Fujimura, who is best known for carving one of these works into a tree.

ANSWER: **death poems** [or **jisei**; prompt on poems, or farewell poems, or suicide poems, or suicide notes; reject “suicide letter” or “death note”]

[10m] Robert Hass translated this author’s death poem as “A bath when you’re born / a bath when you die / how stupid.” This *haiku* author and Buddhist priest used a pen name meaning “cup of tea.”

ANSWER: Kobayashi **Issa** [or **Kobayashi** Yataro, or **Kobayashi** Nobuyuki; accept any name in reverse order]

[10e] The line “A small night storm blows” begins one of the two death poems written by this Japanese author before he led an abortive military coup and performed *seppuku* in 1970.

ANSWER: Yukio **Mishima** [accept names in reverse order]

<Poetry, Will Alston>