

## Cal's Mid-Spring Tournament 2018

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Tossups

1. A parameter of these devices is calculated by the Ilkovič equation, which models a kind of these devices that produces droplets every couple seconds in polarography experiments. A high collection efficiency is an advantage of the rotating ring-disk variety of these devices. These devices can be surrounded by inner and outer Helmholtz planes, and their surroundings are described by the Chang–Jaffe boundary conditions. One of these devices is put inside a micropipette in (\*) patch clamping. These devices are modeled by the difference of two exponential terms containing charge transfer coefficients symbolized alpha in the Butler–Volmer equation. Three of these devices, including working and counter types, are used in CV experiments. A solution of mercury and calomel can act as one of these devices, while another uses a semipermeable glass membrane. A platinum wire is used in the “standard hydrogen” type of these devices, which can also be made of strips of copper or zinc. For 10 points, name these components of electrochemical cells that can be anodes or cathodes.

ANSWER: electrodes [or dropping mercury electrodes; or DMEs; or rotating ring-disk electrodes; or RRDEs; or anodes; or cathodes; prompt on electrochemical or galvanic cells; prompt on pH meter by asking “which part of it?”; prompt on electric double layer by asking “around what devices?”]

<AK, Chemistry>

2. *Description acceptable.* The NRPA opposed Herman Taubeneck’s attempts to trim this document to one main point. The last section of this document calls for a boycott of clothing manufacturers in Rochester. Supporters of this document called it the “second Declaration of Independence,” since it was adopted on July 4. This document expanded on another written two years earlier that included Charles Macune’s plan to create sub-treasuries or depositories in every state. This document called for the abolition of the Pinkerton system which contributed to the recent (\*) Johnson County War. Many of the Ocala Demands were incorporated into this document, which demanded the direct election of senators and the free and unlimited coinage of silver and gold in a sixteen to one ratio. Ignatius Donnelly wrote the preamble to this document, which was adopted at an 1892 convention that nominated James Weaver for president. For 10 points, name this Populist platform adopted in Nebraska.

ANSWER: Omaha Platform [accept any answer indicating the 1892 People’s Party platform or 1892 Populist Party platform until read]

<EC, American History>

3. A defense of one of these artworks listed “bridges” as one of the only two “works of art America has given.” Maurizio Cattelan was almost arrested in Amsterdam for a piece titled *Another Fucking* [one of these artworks]. They’re not photographs, but Sherrie Levine gave the subtitle “Buddha” to her gold recreation of one of these artworks. One of them was a collaboration with Elsa von Freytag-Loringhoven; Beatrice Wood defended that one of these artworks in a journal she founded with Henri-Pierre Roche (“rohsh”). An artist created these pieces to counteract what he called “retinal art.” For an article in the journal (\*) *The Blind Man*, Alfred Stieglitz photographed one of them in front of Marsden Hartley’s *The Warriors*. That one of these pieces was rejected from the Society of Independent Artists. They include *Prelude to a Broken Arm*, which is a suspended snow shovel, while another is a wooden stool underneath the title *Bicycle Wheel*. For 10 points, name these works of anti-art such as *Fountain*, in which Marcel Duchamp (“doo-SHOM”) exhibited found objects as sculptures.

ANSWER: readymades of Marcel Duchamp [prompt on sculptures or urinals; prompt on found art]

<AK, Painting/Sculpture>

4. Five siblings in this novel often communicate with each other in whimsical rhyming couplets, and include a girl nicknamed Kuku who plays Schubert lieder with a German boy named Hans. A character in this novel makes a wedding proposal by writing an acrostic poem entitled “A Modest Proposal.” In this novel, Maan stabs his best friend in a rage, mistakenly thinking his friend is wooing the (\*) courtesan with whom Maan is obsessed. A major subplot in this novel concerns a politician’s attempts to pass a bill abolishing a system of hereditary land ownership. In this novel, violence breaks out after the collision of a Ramlila procession and an Ashura procession, which are juxtaposed with a performance of *Twelfth Night* in which Kabir plays Malvolio. For 10 points, name this massive novel about Rupa Mehra’s search for a husband for her daughter Lata, written by Vikram Seth.

ANSWER: A *Suitable Boy*

<WN, Long Fiction>

5. During one conflict, this leader cut down trees in a forest and placed armor near the trunks to scare off invading soldiers. After a defeat, this ruler fled to his fortification at Ranisstorum, which was taken by Tiberius Claudius Maximus. This leader’s head is depicted on the tallest rock sculpture in Europe, which was constructed between 1994 and 2004 near the city of Orșova (“OR-shoh-vah”). According to Cassius Dio, this ruler diverted the course of a river in order to hide his treasures, which was revealed to attackers by Bicilis. Oppius Sabinus was killed during a surprise attack by this leader on the province of Moesia (“MEE-see-uh”), prompting a war against (\*) Domitian. Apollodorus of Damascus constructed a bridge near the Iron Gates to cross the Danube River during a campaign against this king. This man cut his own throat to avoid capture after being defeated at the Battle of Sarmizegetusa, as depicted on a column on the Quirinal (“KWIR-ih-null”) Hill. For 10 points, name this last king of Dacia who was defeated by Trajan.

ANSWER: Decebalus [accept Duras-Diurpaneus]

<RD, European History>

6. A poem in this genre is set in a time “when civil dudgeon first grew high, and men fell out they knew not why.” In that poem, a widow says that she will free the protagonist from the stocks if he promises to whip himself afterwards, but he reneges on the promise. A poem in this genre lends its name to a verse form using iambic tetrameter couplets with liberal use of feminine rhymes. In another poem in this genre, a bag of tears from the underworld is dumped on the head of the protagonist after an incident that takes place after a game of (\*) ombre (“OM-bur”). That poem begins by noting “what dire Offence from am’rous Causes springs, what mighty Contests rise from trivial Things.” A real-life incident in which Lord Petre (“Peter”) ruined the engagement of Arabella Fermor inspired a poem in this genre in which a Baron cuts off a piece of Belinda’s hair. For 10 points, Samuel Butler’s *Hudibras* (“HEW-dib-russ”) and Alexander Pope’s *The Rape of the Lock* are examples of poems in what genre that parodies tales of heroism?

ANSWER: mock-epics [or mock-heroic; prompt on parody or satire or burlesque; prompt on epic poems or heroic poems]

<WN, Misc Literature>

7. A section outlining two positive tasks for a technique named after this phenomenon distinguishes between the macro-scale “molar” region and the micro-scale “molecular” region. An analysis of the stroll of a literary character who exhibits this phenomenon appears alongside an analysis of various machines, including the “bicycle-horn machine” and the “stone-sucking machine,” in Samuel Beckett’s works. This phenomenon is posited as a revolutionary pole of the libidinal investment of the (\*) social field, as opposed to the reactionary paranoid pole. A technique named after this phenomenon is based on the concept of desiring-production, and is presented as an alternative to a “familialist” technique based on the triangle of mummy-daddy-me. A type of materialist analysis named after this phenomenon is proposed in the volume *Anti-Oedipus*. For 10 points, name this

mental disorder which is paired with “capitalism” in the title of Deleuze (“duh-LOOZ”) and Guattari’s (“gwah-tah-REEZ”) magnum opus.

ANSWER: schizophrenia [accept schizoanalysis]

<WN, Philosophy>

8. **The creation and annihilation operators for these particles are defined in terms of operators called quadratures. A Fock space of these particles is considered in the Gupta–Bleuler formalism. Interactions involving these particles can be direct, single resolved, or double resolved. When production of these particles is sub-Poissonian, their “antibunching” can occur. Experimentally, beta-barium borate is used to produce these particles. For this particle, the inner product of the scattering amplitude and the on-shell four-momentum equals zero. Two of these particles are produced in (\*) spontaneous parametric down conversion. The self energy of this particle is a result of vacuum polarization. One of these particles must have an energy above 1.022 mega-electronvolts for pair production to occur. An abelian U(1) (“U-one”) gauge theory relies on the exchange of virtual examples of these particles. On Feynman diagrams, these particles are shown as wavy lines. For 10 points, name these gauge bosons of QED (“Q-E-D”) that are quanta of electromagnetic radiation.**

ANSWER: photons

<AK, Physics>

9. **A religious movement based on this man’s teachings grew out of Makiguchi’s theories on education in *The System of Value-Generating Pedagogy*. This man advocated a controversial method of proselytization that involved systematically refuting the target’s views, called *shakubuku* or “break-and-subdue.” Followers of this man’s teachings venerate a mandala that he inscribed, called the Dai-Gohonzon (“dye-GO-hone-zone”). This man’s teachings are the basis of a Japanese new religious movement called (\*) Soka Gakkai that is sometimes accused of being a cult. Because this monk saw his time as the degenerate age of *mappo*, he advocated for the chanting of the mantra “Namu Myōhō Renge Kyō,” in honor of a certain sutra. For 10 points, name this Japanese monk who founded a namesake school of Buddhism that emphasizes the supremacy of the Lotus Sutra.**

ANSWER: Nichiren [or Zennichimaro]

<WC, Religion>

10. **A recent book about the inhabitants of the House on the Embankment argues that for portions of its history this organization is best understood as having been an apocalyptic, millenarian sect. Jochen (“YOH-kun”) Hellbeck is best known for studying diaries written by members of this organization. This organization devised a requirement that its members regularly write autobiographical statements and engage in (\*) “self-criticism.” The “friendship of the peoples” was an important principle promoted by this organization. This organization promoted its history through a book called the *Short Course*; that book details the importance of events like the founding of a newspaper called *The Spark* and the publication of texts like *One Step Forward, Two Steps Back*. The Twenty-Five Thousanders were mostly members of this organization or its youth wing the Komsomol who served as shock workers in agricultural regions during the period of the First Five-Year Plan. Numerous “Old” members of this organization were killed during the period of 1936 to 1938 in the Great Terror. For 10 points, identify this organization, which ruled the Soviet Union for its entire history.**

ANSWER: Communist Party of the Soviet Union [or CPSU; or Soviet Communist Party; or Russian Communist Party; or Russian Social-Democratic Labor Party (Bolsheviks); or All-Union Communist Party (Bolsheviks); or Kommunisticheskaia partiia Sovetskogo Soiuz or Vsesoiuznaia kommunisticheskaia partiia (Bol’shevikov); accept Komsomol or All-Union Leninist Young Communist League or Vsesoiuznoe leninskii kommunisticheskii soiuz molodezhi until “Komsomol” is read; prompt on Communist Party until “Soviet Union” is read, but accept after]

<MC, European History>

11. Upon arriving at this location, a hero tells his men he cannot tell in which direction the sun rises or sets, causing them to weep. At this location, the blood of a giant gives rise to a white flower that is said to be dangerous if picked by mortals. A feast here takes place when a hero fashions a rope to drag a giant “high-horned” stag he killed with a single blow after earlier being distracted by smoke. This location near the Tyrrhenian (“tuh-REE-nee-in”) coast is home to a figure who has her niece and her niece’s lover wash their hands with pig’s blood to purify themselves for the murder of (\*) Absyrtus. A hero’s body is brought here after his son accidentally kills him with a spear tipped with a stingray barb. When leaving this place, a hero is told he must first go to Hades to ask Tiresias (“ty-REE-see-us”) how to return home. The only member of a group of twenty-two men who refuses to enter a house here is Eurylochus. The night before his group leaves this island, Elpenor sleeps on a roof and falls to his death. On this island, Hermes gives Odysseus the plant *moly* to protect him from being turned into swine like the rest of his men. For 10 points, name this island, the home of Circe (“SUR-see”).

ANSWER: Aeaea (“ee-EE-uh”) [prompt on Circe’s island until “Circe” is read; anti-prompt on Circe’s home or equivalents; do not accept or prompt on “Aea,” which is ruled by Aeëtes]  
<JK, Legends>

12. In an article supporting Sidney Mintz’s *Sweetness and Power*, this thinker argued that Western social science is limited by the “triste trope” that life is about “the search for satisfaction.” This author of “The Sadness of Sweetness” has led the campaign against the opening of Confucius Institutes on American campuses, calling them “academic malware” in a 2015 book. This man theorized that indigenous peoples accept colonial powers because they can assist with conflict resolution as part of his theory of the (\*) Stranger King. This author of *Islands of History* used a Richard Lee study showing that the Dobe worked fifteen hours a week to support his claim that “a people can enjoy an unparalleled material plenty with a low standard of living.” For 10 points, name this substantivist University of Chicago anthropologist who argued in *Stone Age Economics* that hunter-gatherers were the “original affluent society.”

ANSWER: Marshall Sahlins [or Marshall David Sahlins]  
<EC, Social Science>

13. According to the first Morita conjecture, a space  $X$  has this property if  $X$  cross space  $Y$  is normal for every normal space  $Y$ . Every finite space that is Tikhonov will have this property, since all sets will be closed. Taking the subspace topology over the integers as a subspace of the real line yields this kind of topology. Metric functions described by this term output zero if the points are equal, and one if the inputs are different. Constructing this kind of topological space can be done by letting every subset of the space be (\*) open, thus making this kind of topology the finest possible topology. In another context, this term describes the beta and Poisson distributions since their underlying functions are probability mass functions, and not probability density functions. Random variables that taken on a finite set of values are described by, for 10 points, what adjective, the opposite of continuous?

ANSWER: discrete [accept discrete topology, discrete distribution, or discrete random variables]  
<IJ, Math>

14. This novel cites the Malay proverb “If you would forgive your enemy, first inflict a hurt on him” in all caps when the protagonist feels her desire for revenge against another character die out while she is at the opera. At the end of this novel, a man bends over a woman laying on a bed, realizing that “all the conditions of life had conspired to keep them apart.” This novel’s protagonist purchases some letters incriminating a man in an affair, and later secretly (\*) burns them while visiting him at the Benedick. During a party hosted by the Brys (“brize”), the protagonist of this novel appears in a *tableau vivant* (“tahb-LOH vee-VON”) of Joshua Reynolds’s portrait of Mrs. Lloyd. A match between the protagonist of this novel and Percy Gryce is prevented by the scheming of Bertha Dorset. The protagonist of this novel rejects advances from Gus Trenor and is herself

rejected in marriage by Simon Rosedale before she takes a fatal draught of chloral. Lawrence Selden fails to declare his love for Lily Bart in, for 10 points, what novel of manners by Edith Wharton?

ANSWER: The House of Mirth

<JN, Long Fiction>

15. A composer from this country wrote a cantata premiered by Hermann Scherchen (“SHARE-ken”) that uses a wedge-shaped all-interval tone row beginning on the pitch A. Another composer from this country wrote a piece in which an offstage B-natural drone is meant to “lend a slight resonance” to the solo oboe. Different voices sing individual syllables in a cantata from this country that sets letters from executed members of the European resistance and is titled “The (\*) Suspended Song.” A piece from this country calls for “tense muttering” as the female vocalist walks on stage, and another piece by the same composer calls for the trombonist to ask the audience “Why?” That set of fourteen compositions for solo instruments from this country is titled for the word for “Sequence.” A composer from this country called for six ancient trumpet-like instruments in a piece that also features a recorded nightingale, titled for the *Pines* of its capital city. For 10 points, name this country home to Luigi Nono, Luciano Berio, and Ottorino Respighi.

ANSWER: Italy [or Italia; or Italian Republic; or Repubblica Italiana]

<AK, Classical Music>

16. This city’s modernist central railway station was designed by Robert Boughey (“BOH-ee”), an American who once taught architecture in this city. A former horse-racing ground which hosted several massive political rallies now includes a mausoleum for three of its country’s leaders. This city’s location along a number of important trade routes led to the construction of two palatial seventeenth-century caravansaries (“kair-uh-VAN-suh-reez”) known as the great and small Katras. A firm headquartered in this city requires its customers to adhere to set of (\*) social values called the “sixteen decisions.” In a suburb of this city, the Rana Plaza suffered a major industrial accident which resulted in over a thousand deaths; that incident led to a number of reforms to this city’s textile industry. An organization based in this city is a notable practitioner of solidarity lending; that microfinance organization is Grameen Bank. This metropolis is located at the confluence of the Padma and Meghna rivers near the Bay of Bengal. For 10 points, name this megacity, the capital of Bangladesh.

ANSWER: Dhaka

<PS, Geography>

17. James Sweet wrote a biography of a diviner born in this kingdom named Domingo Álvares. The Fly and Elephant political factions clashed over this kingdom’s expansion of palm oil trade. The priests of this kingdom, called *vodunon*, worshiped the god Sakpata, who supposedly inflicted smallpox throughout this kingdom. This kingdom practiced human sacrifice during a celebration whose name translates as “yearly (\*) head business.” Francisco Félix de Sousa became viceroy of its territory of Whydah (“WY-duh”) after helping its king Ghezo ascend to power. The city of Allada, the home of this empire’s founder Do-Aklin, was captured by its king Adaja. The *gbeto* elephant hunters in this kingdom became a group of all-female bodyguards in this kingdom called its “Amazons.” The rise of the Sokoto Caliphate allowed this kingdom to end its tribute payments to the Oyo Empire, before it was conquered by the French in 1894. For 10 points, name this eighteenth- and nineteenth-century African kingdom centered around modern-day Benin, which thrived on the slave trade with Europeans.

ANSWER: Kingdom of Dahomey (“duh-HO-mee”)

<RD, World History>

18. A poem from this movement expresses the urge to “tread again that ancient track” of its author’s “early days” when he “shined in [his] angel infancy,” and is called “The Retreat.” George Williamson’s description of this movement’s “strong lines” is discussed in the preface to a collection of its poetry compiled by Helen Gardner. A critic compared this movement’s poetry to the work of Jules Laforgue (“zhooh lah-FORG”), quoting the opening lines of a Laforgue poem about “diaphanous (“die-AFF-uh-nus”) geraniums,” in a

**review of a Herbert Grierson anthology. The collection (\*) *Silex Scintillans* was written by a poet from this movement. Samuel Johnson adapted a quote by Dryden to coin this movement's name in a chapter of *Lives of the Poets* about Abraham Cowley. T. S. Eliot argued that this movement's poets avoided "dissociation of sensibility." Poems from this movement were often based on "conceits," such as comparing lovers to the legs of a compass. For 10 points, name this loose seventeenth-century poetic movement of George Herbert and John Donne.**

ANSWER: **metaphysical** poetry (The third sentence describes T. S. Eliot's "The Metaphysical Poets.")

<RK, Poetry>

**19. Jay Keasling has engineered both *S. cerevisiae* and *E. coli* to produce a precursor to this compound, the intracellular activity of which results in the inactivation of the SERCA ("SUR-kuh") calcium pump found in the ER and in the sarcoplasmic reticulum. One proposed mechanism for this drug's medicinal properties focuses on its ability to alkylate translationally-controlled tumor protein, or TCTP. In humans, the alkylating activity of this drug also disrupts the heme detoxification pathway by binding free heme molecules and converting this drug into a cytotoxic carbon-centered (\*) radical. Oxidative damage from that cleavage of this drug's central endoperoxide bridge provides the leading theory for this drug's mechanism of action. The discovery that this herbal byproduct possessed anti-parasitic properties resulted in the Chinese biologist Tu Youyou ("yo-yo") winning the 2015 Nobel Prize in Medicine. For 10 points, name this drug that has proved more effective than quinine for use in the widespread treatment of malaria.**

ANSWER: **artemisinin** [accept a variety of artemisinin-derived compounds, such as: **artemether** or **artesunate** or **artemiseid** or **artemisono** or **arteether** or **dihydroartemisinin** or **SM934** or **SM905**; accept **qinghaosu**]

<RH, Biology>

**20. In one photograph, this man flashes his Rolex to the camera while bizarrely sporting a Native American headdress given to him by Gary Cooper. He's not Woody Allen or Rudolf Nureyev, but an Irving Penn portrait of this man shows the illuminated half of his face framed by his wide brimmed hat and raised collar. Gjon ("John") Mili used long exposure photography for a *Life* magazine piece in which this man draws through the air using a light pen. Brassai ("brah-SY") photographed him next to a large wood stove in his series *Conversations with [this man]*. Time lapses of him working are shown throughout an Henri-Georges Clouzot ("cloo-ZOH") documentary titled *The Mystery of [This man]*. A Yousuf Karsh portrait shows this man to the left of a (\*) large vase showing a nude's backside. In a 1950 film, this artist uses a thick white brush on a glass pane to paint a bull. This artist's progress on a large mural was documented in photos by his muse Dora Maar. Many photos show this balding artist wearing a black and white striped shirt or painting shirtless. For 10 points, name this Cubist painter of *Guernica*.**

ANSWER: Pablo **Picasso**

<AK, Other Art (Photography)>

## Bonuses

1. A rebellion in this region was first led by the DLF, and later, after establishment of South Yemen, by the communist PFLOAG. For 10 points each:

[10] Name this region in the Arabian Peninsula whose inhabitants rebelled against the rule of Sultan Said (“sah-EED”) bin Taimur. This region, isolated from the rest of its country, is home to people referred to as *jabbalis*, who speak non-Arabic Arabian languages.

ANSWER: **Dhofar**

[10] Dhofar is located in this modern day nation in the Arabian Peninsula northeast of Yemen, the only country with a majority Ibadi Muslim population. It previously consisted of the Sultanate of Muscat (“MUSS-kaht”).

ANSWER: Sultanate of **Oman**

[10] An operation with this name during the Dhofar Rebellion that tried to cut off rebel supply lines lasted three years. A rebellion with this name was led by Pierre Mulele and was part of the wider Congo Crisis.

ANSWER: **Simba** [accept Operation **Simba**; accept **Simba** Rebellion]

<JS, World History>

2. This opera’s composer set it aside to work on a suite of the same name that features an “Ostinato” second movement section in an exact palindrome form that is centered around an arpeggiated passage for solo piano. For 10 points each:

[10] Name this opera. The aforementioned passage is played during Act II alongside a palindromic silent film in which the female lead is jailed, contracts cholera, and visited by Countess Geschwitz (“GESH-vits”) during her hospitalization.

ANSWER: **Lulu** (by Alban Berg)

[10] The composer of *Lulu*, Alban Berg, was a member of a school of early 20th century composers from this city, where he was taught by Arnold Schoenberg (“SHURN-burg”).

ANSWER: **Vienna** [or **Wien**]

[10] Viennese composer Anton Webern (“VAY-burn”) used palindromic form to compose this two-movement piece. Its second movement is a set of seven variations on a theme played by winds and harp, with the movement centered on the fourth.

ANSWER: **Symphony**, Op. 21 [or *Symphony*, **Opus 21**]

<AK, Classical Music>

3. In one study, this compound was found to induce apoptosis in neuroblastoma models via the c-Jun (“C-jun”) N-terminal kinase pathway. For 10 points each:

[10] Name this compound consisting of a central mercury atom bound to thiolate and ethyl ligands. Misguided allegations linking multi-dose flu vaccines to autism targeted this bacteriostatic compound.

ANSWER: **thimerosal** [or **thiomersal**]

[10] Unlike the speculation around thimerosal toxicity in vaccines, a genuine concern for mercury poisoning is posed by methylmercury. One such result is this neurological syndrome named for the Japanese city in which it was first discovered to be linked to decades of methylmercury being released into nearby industrial wastewater.

ANSWER: Chisso-**Minamata** disease

[10] Methylmercury is poisonous because it can complex with cysteine and easily cross this biological “barrier,” which is composed of densely-packed endothelial cells maintained by tight junctions.

ANSWER: **blood-brain** barrier [or **BBB**]

<RH, Biology>

4. According to an apprentice named Jacques Vincent (“van-SAHN”), this incident was perpetrated by Vincent himself, a man named “Léveillé” (“lay-veh-YAY”) and several journeymen after they were “fed slop” by their masters. For 10 points each:

[10] Name this alleged 1730s incident that titles a work of cultural history by Robert Darnton, in which poor apprentices committed the title act as retribution for the low wages given to them by their masters.

ANSWER: the **Great Cat Massacre**

[10] The Great Cat Massacre took place in the Latin Quarter of this city, whose avenues were widened during a renovation undertaken by Baron Haussmann (“ohss-MON”).

ANSWER: **Paris**

[10] The apprentices who carried out the Great Cat Massacre worked in this profession. William Caxton introduced this industry to England.

ANSWER: **printing** industry [or **printers**]

<IJ, European History>

5. This rabbi’s death is commemorated on Lag B’Omer (“LOG buh-OH-mair”), during which it is customary to light bonfires and for children to play with bows and arrows. For 10 points each:

[10] Name this rabbi, who is traditionally credited with writing the Zohar, which was more likely written by Moses de León. He was said to have hid inside a cave for thirteen years, living off the fruit of a miraculous carob tree.

ANSWER: Simeon bar **Yochai** (“yoh-HY”) [or Simeon ben **Yohai**; or **Rashbi**, but be careful not to accept “Rashi”]

[10] The Zohar is an important text in this Jewish mystical tradition. This tradition is often concerned with the relationships between the ten *sephirot* (“suh-fee-ROTE”), which are emanations from Ein Sof (“ane SOHF”), the infinite god.

ANSWER: **Kabbalah**

[10] Another influential teacher in Kabbalah was this man, whose ideas were collected by Chaim Vital (“KHAH-yeem vee-TAHL”) in the Etz Chayim (“etts KHAH-yeem”). This man taught that creation arose when God contracted himself during *tzimtzum* (“tseem-TSOOM”).

ANSWER: Isaac ben Solomon **Luria** [or **HaAri** or **Arizal**]

<WC, Religion>

6. This phrase is the subtitle of a documentary that opens with a Langston Hughes poem reading “Can you love an eagle, Tame or WILD?” and shows an artist playing with dogs as Dizzy Gillespie’s “Salt Peanuts” plays during its title sequence. For 10 points each:

[10] Name this phrase, the moniker of a street artist. This phrase is the subtitle of that 2009 Tamra Davis documentary, and also titles an article by Rene Ricard published in *Artforum* in 1981.

ANSWER: “The **Radiant Child**”

[10] This American graffiti artist was the subject of that article and documentary. He began his career in a duo known as SAMO with Al Diaz and died of a heroin overdose at the age of 27.

ANSWER: Jean-Michel **Basquiat** (“BOSS-kee-aht”)

[10] After Basquiat’s death, Keith Haring created a triangular piece titled *A Pile of [these things] for Jean-Michel Basquiat*. Basquiat frequently depicted these objects in his art, sometimes above his signature, as a status symbol.

ANSWER: **crowns**

<AK, Painting/Sculpture>

7. This figure is the only one of his retinue to give shelter to a tired and ugly loathly lady, causing her to notice the love spot on his forehead. For 10 points each:

[10] Name this member of the Fianna whose hospitality is rewarded when that lady transforms into a beautiful maiden and gives him a house by the sea. However, this man insults her after she gives away his dogs, causing her to leave him.

ANSWER: **Diarmuid** (“DEER-mud”) Ua Duibhne [or **Diarmid** O’Dyna; or **Diarmuid** of the Love Spot]

[10] Diarmuid sets out to find the loathly lady and comes across three of these things, which he takes with him. In a romance by Chrétien de Troyes (“crate-YANN duh TWAH”), Perceval finds three of these things in the snow, reminding him of his wife.



ANSWER: drops of **blood** [prompt on drops]

[10] Diarmuid found the loathly lady dying and bleeding three drops of blood, leading him to promise to return from the Plain of Wonder with a cup of water that had magical healing properties. His quest mirrored Galahad and Percival's quest to attain this object.

ANSWER: the Holy **Grail**

<AK, Legends>

8. This person's father Cornelius delivers a grand lecture to him on the day of his birth at the beginning of novel presented as his "Memoirs." For 10 points each:

[10] Name this fictional scholar whose pseudonymous name was used to ridicule "all false tastes in learning" by an eighteenth-century literary club, whose members included John Gay, John Arbuthnot, and Jonathan Swift.

ANSWER: **Martinus Scriblerus** [accept either underlined portion]

[10] The "scribblers" satirized by the Scriblerus Club included the "hack writers" of one of these places named "Grub." Broadside and penny dreadfuls were often sold in these places.

ANSWER: **streets** [accept clear knowledge equivalents; accept Grub **Street**]

[10] This other author published plays like *The Grub Street Opera* under the pseudonym Scriblerus Secundus. After taking editorship of *The Covent-Garden Journal*, he started a "Paper War" with Grub Street writers by attacking John Hill.

ANSWER: Henry **Fielding**

<RK, Misc Literature>

9. Solutions to this equation are often proportional to the square of the hyperbolic secant function. For 10 points each:

[10] Name this equation that is written as [read slowly] " $u$ -sub- $t$ , plus six- $u$  times  $u$ -sub- $x$ , plus  $u$ -sub-triple- $x$ , equals zero." This nonlinear PDE is used to model shallow water.

ANSWER: **KdV** equation [or **Korteweg-de Vries** equation]

[10] Solutions to the KdV equation are often solitons, which are a type of these phenomena that maintain the shape of their packet as they travel at a constant speed. Zero velocity and fixed nodes are characteristic of the "standing" type of these phenomena.

ANSWER: **waves**

[10] The initial value problem of integrable nonlinear PDEs, like the KdV equation and sine-Gordon equation, can be solved using this technique. In this technique, the eigenvalue, reflection coefficient, and norming constants are used to find the potential through the namesake process by solving the Gelfand-Levitan-Marchenko integral equation.

ANSWER: **inverse scattering** transform [prompt on **IST**]

<AK, Physics>

10. Answer these questions about how to determine the masses of supermassive black holes, for 10 points each:

[10] Many methods approximate gas orbiting the black hole to travel in a circle, so the mass of the black hole is equal to the orbiting radius of the gas times velocity divided by big  $G$ . Using the small-angle approximation, the radius is equal to the angular size of the black hole times this quantity.

ANSWER: **distance** to the black hole

[10] The velocity in the previous expression is this type of velocity which is directed along the line of sight of an observer. This kind of velocity names a method for finding exoplanets by measuring the wobble of a star as it is orbited by a planet.

ANSWER: **radial** velocity

[10] The radius of the gas's orbit can also be determined using this method, in which recombination radiation causes the light travel time of radiation to vary. The radius is equal to the speed of light times the time "lag" seen on a light curve of the black hole.

ANSWER: **reverberation mapping**

<RD, Other Science (Astronomy)>

11. According to Douglas Yates, these states engender a namesake mentality in which “contracts are given as an expression of gratitude rather than as a reflection of economic rationale.” For 10 points each:

[10] Give this term for a state that derives most of its revenue externally, most commonly through oil exports, and thus becomes unaccountable to its citizens. Hossein Mahdavy popularized this term in a 1970 article that analyzed Iran as this type of state.

ANSWER: **rentier** (“ren-TEER”) states

[10] There are many oil-rich rentier states in the area known by the acronym MENA, which refers to this region and North Africa.

ANSWER: **Middle East**

[10] This framework, developed by Singer and Prebisch, argues that the developed core exploits and impoverishes the underdeveloped periphery within a capitalist world-system through the extraction of resources.

ANSWER: **dependency** theory

<EC, Social Science>

12. This poem begins with the instruction “With drum accompaniment,” and its speaker regrets the “glimpse of a dream” that “lies smoldering in a cave.” For 10 points each:

[10] Name this poem from the collection *Path of Thunder* whose speaker describes the raining down of eagles, robbers, and politicians. This poem’s speaker implores the Earth, “unbind me” and “let this be my last testament.”

ANSWER: **“Elegy for Alto”**

[10] “Elegy for Alto” is by Christopher Okigbo, a poet from this country who died fighting for Biafran (“bee-OFF-run”) independence.

ANSWER: Federal Republic of **Nigeria**

[10] Okigbo envisioned Nigeria as a “storm tossed ship” in the poem “Lament of the Silent Sisters,” which was inspired by this British poem written in “happy memory of five Franciscan nuns.”

ANSWER: “The **Wreck of the Deutschland**” (by Gerard Manley Hopkins)

<JN, Poetry>

13. In this state’s 1966 gubernatorial election, the Democratic candidate campaigned on the slogan “Your home is your castle, protect it!” For 10 points each:

[10] Name this state whose 1966 gubernatorial election saw a Republican county executive defeat the segregationist Democrat George Mahoney and the Independent Hyman A. Pressman.

ANSWER: State of **Maryland**

[10] This Republican politician was the winner of the 1966 Maryland gubernatorial election. He went on to become Nixon’s vice president, but resigned due to an investigation into his political corruption during his time as governor.

ANSWER: Spiro **Agnew** [or Spiro Theodore **Agnew**]

[10] The investigation into Agnew’s corruption was headed by this Attorney General under Nixon, who chose to resign rather than fire the special prosecutor Archibald Cox during the Saturday Night Massacre.

ANSWER: Elliot **Richardson** [or Elliot Lee **Richardson**]

<WC, American History>

14. This trajectory was used to derive the Felkin–Anh model, which predicts the diastereomers produced by addition reactions. For 10 points each:

[10] Name this angle taken by nucleophiles as they attack carbonyl groups.

ANSWER: **Bürgi–Dunitz** angle [or **Bürgi–Dunitz** trajectory; prompt on **BD** angle]

[10] The Bürgi–Dunitz angle has a value of approximately 107 degrees because it maximizes the overlap between the HOMO (“HO-mo”) of the nucleophile and this molecular orbital of the carbon-oxygen bond, which serves as the LUMO (“LOO-mo”) in the reaction.

ANSWER: **pi-star** orbital [or **pi antibonding** orbital; prompt on just **antibonding**, but DO NOT accept or prompt on just “pi”]

[10] The Bürgi–Dunitz angle is very close to the bond angles in this geometry, which is the transition state geometry in the nucleophilic addition to carbonyls. This is also the geometry of methane.

ANSWER: **tetrahedral** geometry

<RD, Chemistry>

15. An argument between an alcoholic actor and a Baron about who will sweep this location’s floor is ended by the arrival of the elderly pilgrim who believes all men to be equal. For 10 points each:

[10] Describe this room which is also home to a cynical capmaker and a bitter locksmith married to the terminally ill Anna. The pilgrim’s departure leads the Actor to hang himself at the end of the play set in this location.

ANSWER: the **basement** of the lodging house from *The Lower Depths* [accept **cellar** in place of “basement”; accept **Na dne** in place of “*The Lower Depths*”]

[10] Maxim Gorky’s *The Lower Depths* exemplifies the “socialist” form of this literary movement. Konstantin Stanislavski’s productions of Anton Chekhov’s plays helped pioneer this style’s “psychological” form.

ANSWER: **realism** [accept socialist **realism** or psychological **realism**]

[10] In a scene from *The Lower Depths* exemplifying “the harsh truth” in contrast with “the consoling lie,” Luka relates an anecdote about a man who constantly searches for this sort of land and, after being shown it does not exist, decides to hang himself.

ANSWER: **righteousness** [accept synonyms such as **justice** or **virtuousness**]

<RK, Drama>

16. Answer some questions about the influence of classical Indian music on American minimalism, for 10 points each:

[10] This composer, who created a tape feedback system he called the “time lag accumulator,” used the beat of a *tabla* to introduce the *raga* that ends the title track of his album *A Rainbow in Curved Air*. He also wrote a piece using a random arrangement of fifty-three short phrases in the title key.

ANSWER: Terry **Riley** [or Terrence Mitchell **Riley**] (That piece is *In C*.)

[10] The India-influenced minimalist La Monte Young composed a piece to be played in just intonation titled *The Well-Tuned [this keyboard instrument]*. The Hindu aesthetic concept of *rasas* influenced John Cage’s *Sonatas and Interludes*, which was composed for a type of this instrument that is “prepared” by placing objects on or between its strings.

ANSWER: **piano** [or prepared **piano**]

[10] This classical Indian singer was a major influence on both La Monte Young and Terry Riley, who used the title *Atlantis [his name]* for an eclectic 2002 album mixing electronic music, jazz, and classical Indian music.

ANSWER: Pandit Pran **Nath** (“not”)

<AK, Other Art (Auditory)>

17. Herman Hollerith developed an early electromechanical machine which responded to the needs of this agency, where he had previously worked. For 10 points each:

[10] Identify this agency, which later funded the development of the UNIVAC I computer, serving as its launch customer. This agency is credited with producing the first digital map of the United States for its TIGER database, which is frequently employed in GIS applications.

ANSWER: United States **Census Bureau** [or **Bureau of the Census** or **Census Office** or **USCB**; prompt on “Department of Commerce”]

[10] Hollerith founded the Tabulating Machine Company, which after a series of mergers and name changes became this still-extant firm. This company's longtime CEO Thomas Watson is credited with developing an effective corporate culture centered around the slogan "THINK" and names a *Jeopardy!*-playing robot.

ANSWER: **IBM** [or **International Business Machines** Corporation]

[10] This other agency has been credited by Theodore Porter with pioneering the use of statistical cost-benefit analysis in government decision making in the United States. It used those methods to decide where to build dams and conduct flood control projects, especially in the American West, after having greatly expanded its civilian mission in the twentieth century.

ANSWER: United States **Army Corps of Engineers** [or **USACE**; prompt on "Army" or "Department of Defense" or "Department of War"]

<MC, American History>

18. This man asked a room of engineers "Who in the audience drives a stick shift?", to which most of the room proudly raised their hands, leading this man to tell them "None of you should ever design a user interface." For 10 points each:

[10] Name this man who formulated "Seven Stages of Action" in his book *The Design of Everyday Things*, which brings a psychological perspective to that field. That work popularized the term "user-centered design."

ANSWER: Don **Norman** [or Donald **Norman**]

[10] Norman gave that address at this Bay Area facility that developed the graphical user interface and the Smalltalk programming language. It was founded as the research division of a printing company.

ANSWER: **Xerox PARC** [or **PARC**; or **Palo Alto Research Center** Incorporated]

[10] Xerox PARC created the Alto, the first computer to use a graphical user interface and use one of these devices. Invented by Doug Engelbart, this device used a trackball and wheel to allow users to point and click on icons.

ANSWER: **mouse**

<AK, Other Academic>

19. This philosopher edited a 2014 collection titled *The Aesthetic Turn in Political Thought*. For 10 points each:

[10] Name this Canadian philosopher who outlined the need for critical theory to help present alternatives to the status quo through the idea of "reflective disclosure" in his book *Critique and Disclosure*.

ANSWER: Nikolas **Kompridis**

[10] Kompridis's idea of "reflective disclosure" is a reaction to the work of this philosopher, who proposed a distinction between the "system" and "lifeworld" in a book that discusses "ideal speech situations" in describing how rationality can arise through discourse.

ANSWER: Jürgen **Habermas** ("YUR-gun HAH-bur-moss")

[10] Kompridis contrasts Habermas's rule-based approach to democratic politics with the possibility of a romantic democratic politics in the tradition of this author of *The Human Condition* and *The Origins of Totalitarianism*.

ANSWER: Hannah **Arendt** ("AIR-unt") [or Johanna **Arendt**]

<AK, Philosophy>

20. The protagonist of this novel has a photo of his editor Hackmuth in his room, before which he supplicates for fortune in publishing his works. For 10 points each:

[10] Name this novel that follows the struggling writer Arturo Bandini and ends with him throwing his first novel out into the desert with a dedication to his Mexican lover Camilla Lopez.

ANSWER: ***Ask the Dust***

[10] In John Fante's *Ask the Dust*, Bandini moves from Denver to this city. Tod Hackett is employed at a film studio and works on a painting titled for the "burning of" this city in another novel set here, *The Day of the Locust*.

ANSWER: City of **Los Angeles** [or **LA**]

[10] Fante influenced this other Los Angeles writer, who featured the acne-stricken mail carrier Henry Chinaski in novels like *Factotum* and *Ham on Rye*.

ANSWER: Charles Bukowski [or Henry Charles Bukowski; or Heinrich Karl Bukowski  
<JN, Long Fiction>