

Cal's Mid-Spring Tournament 2018

Written by members of the Berkeley Quizbowl Club, Weijia Cheng, Ryan Humphrey, Ike Jose, Eddie Kim, Will Nediger, and Jennie Yang

Edited by Weijia Cheng, Michael Coates, Aseem Keyal, Bruce Lou, Will Nediger, Ryan Humphrey, Eddie Kim, and Jennie Yang

Tossups

1. **This leader's rule was undermined by Masonic Lodges of the Scottish rite, who published an internal newspaper called *El Sol* opposing him. He rose to military prominence following his defeat of insurgent general José María Morelos. Joel Roberts Poinsett investigated the stability of this man's regime and brought back the Christmas Eve flower upon his return. The Plan of Casa Mata proposed the restoration of a legislature that this man dissolved. Earlier in his military career, this leader joined forces with his rival (*) Vicente Guerrero to form the Army of the Three Guarantees, in accordance with the guarantees of religion, independence, and unity presented in this man's Plan of Iguala. Antonio López de Santa Anna led resistance against this ruler from his base in Veracruz, resulting in his abdication. For 10 points, name this independence leader who briefly reigned as Emperor of Mexico.**

ANSWER: Agustín de Iturbide [accept Augustine I; accept Agustín I; accept Augustine of Mexico; accept just Agustin or Augustine after the question is finished, but prompt on it before]

<CP, World History>

2. **Members of this ethnic group avoid living on lower floors because women living upstairs might walk over their heads, exposing them to ritual contamination. This ethnic group believes that women have the power to defile men by tossing their skirts at them. Ritual separation of the upper and lower body is practiced among this ethnic group as part of laws governing *vujo*, or purity, and *marime*, or impurity. A common pilgrimage site among this ethnic group is Saintes-Maries-de-la-Mer ("sant-muh-REE-duh-lah-MAIR"), where Black (*) Sarah, also known as Sarah-la-Kali, is venerated. Members of this ethnic group can be declared polluted as part of their sentence in a court of law called a *kris*. This ethnic group refers to the cross as the *trishul*, suggesting that their religion has Hindu origins. For 10 points, name this ethnic group, whose members often open businesses called *ofisi* that offer fortune-telling.**

ANSWER: Roma [or Romani; accept Sinti; accept Gypsy or Gypsies]

<WC, Religion>

3. **This character ignores a student pleading through a keyhole for her to go to dinner with him while she is staying at the Elephant Hotel in Pumpernickel. The illustration at the beginning of Chapter 4 depicts this woman angling for a fish, in reference to how she literally entraps a man by winding silk yarn around his arms while knitting a green purse. The final illustration in the novel depicts her at a charity booth, referencing the novel *Pamela* with its caption, (*) "Virtue Rewarded." This character squeezes her host's hand after being startled by a spicy goat curry, thinking chilis are cold. Miss Jemima hands this character a copy of Johnson's *Dictionary* as a parting gift, which she promptly throws out the window of a stagecoach. This character is given precious jewelry by Lord Steyne, which is torn off in a climactic scene by her husband Rawdon Crawley. For 10 points, name this friend of Amelia Sedley, an anti-heroine who climbs the social ladder in William Makepeace Thackeray's *Vanity Fair*.**

ANSWER: Becky Sharp [accept either underlined portion; or Rebecca Sharp]

<RK, Long Fiction>

4. **A track in this genre features a tenor saxophone solo by Tony Pastor against cymbal crashes played by Cliff Leeman; that track was on the B side of a record that included a cover of "Indian Love Call." It's not stride, but Andy Razaf ("RAZZ-uff") wrote the lyrics to a song in this genre that had a trumpet solo by Clyde**

Hurley and a tenor saxophone duel between Al Klink and Tex Beneke (“BEN-uh-kee”). Roy Eldridge is labeled as one of this genre’s “Great Soloists” in Gunther Schuller’s book titled for this genre. Don Redman helped create this genre’s sound while working with (*) Fletcher Henderson by using call and response between the brass and reeds. This genre, which often notated consecutive eighth notes as triplets, was popularized on the West Coast by a performance at the Palomar Ballroom. This genre competed for popularity with Dixieland revival, was played by Artie Shaw and Glenn Miller, and was widely popular by the time “Sing, Sing, Sing” was performed at Carnegie Hall in 1938. For 10 points, name this danceable jazz genre popular in its era from the mid 1930s to 1940s, which Benny Goodman was the “king of.”

ANSWER: swing jazz [prompt on big band jazz]

<AK, Other Art (Jazz)>

5. A former piano teacher named Emma Summers became known as the “Queen” of this industry in the early twentieth century. The density of equipment used in this industry caused the city of Signal Hill to be nicknamed “Porcupine Hill.” A man who made his fortune in this industry was so miserly he installed a pay phone in his mansion despite being named the wealthiest person in the world in 1966; that man’s grandson had his ear cut off by Italian gangsters and sent to him because he refused to pay his grandson’s seventeen million dollar ransom. In the aftermath of a disaster caused by this industry near (*) Santa Barbara in 1969, Senator Gaylord Nelson organized a campaign that resulted in the first Earth Day. Edward Doheny (“doh-HEE-nee”) started this industry’s boom in the Los Angeles Basin when he noticed large surface deposits of asphalt at La Brea. For 10 points, name this industry, which was the subject of the Teapot Dome Scandal.

ANSWER: oil industry in Southern California [or petroleum industry]

<BL, American History>

6. In a study by Paul E. Turner, this quantity was increased when cloned high-multiplicity examples of RNA phage phi six did not share intracellular products. The difference between two forms of this quantity symbolized “ f -sub- i of x ” and “phi of x ,” respectively, is set equal to “the derivative of x -sub- i , divided by x -sub- i ” in the replicator equation. This quantity for XX must be greater than this quantity for XY for an ESS to occur. The fixation probability of a mutation is related to its effect on this quantity due to clonal (*) interference. The sum of this quantity is always less than or equal to V in a classic model describing the interaction between hawks and doves. Direct and indirect reciprocity increase the inclusive form of this quantity, which was introduced by W. D. Hamilton. The change in this quantity is maximized in the optimal strategy of a payoff matrix in evolutionary game theory. For 10 points, name this quantity which represents an organism’s ability to pass on its genes.

ANSWER: fitness [prompt on payoff]

<RD, Biology>

7. An artist who escaped his country right before the start of this government painted a surgery in which several forceps strewn on a white sheet surround an exposed appendix; that non-Man Ray artist created a light-sensitive photogram. An artist part of the November Group during this government drew an oafish, mustachioed man in profile whose collar reads “184.” A movement during this government was divided into *classicists* and *verists*, with the latter faction including (*) Christian Schad. A tuxedoed saxophonist eyeing a woman with large pink ostrich feathers appears in a triptych satirizing this government that depicts a peg-legged soldier and is titled *Metropolis*. A collage depicting its last “Beer-Belly Cultural Epoch” was done by Hannah Hoch. The *Neue Sachlichkeit* (“NOY-uh ZOCK-lick-kite”) movement during this government included Otto Dix and George Grosz (“grohss”). For 10 points, name this government satirized by New Objectivity in the 1920s, which preceded the rise of Nazi Germany.

ANSWER: Weimar Republic [or Weimar Germany; or Weimarer Republik; prompt on 1920s Germany; prompt on interwar period or anything indicating the period between WWI and WWII in Germany]

<AK, Painting/Sculpture>

8. Claude Levi-Strauss's *Mythologiques* ("mee-toh-loh-ZHEEK") contrasts an Opaye myth in which a guinea pig tricks this animal into teaching it to use fire with the Bororo version, in which this animal is tricked by a monkey. When in the form of this animal, a deity was often depicted crosseyed and had a name meaning "heart of the mountains." After failing to create humans using mud, wood, and stone, four gods created four brothers out of corn and named three of them after this animal. Statues with grooved and banded ears and exaggerated frowning faces were used by one civilization for figures combining these animals with (*) men in the *were* ("wair")-[this animal] motif in Olmec art. Yucatecan Mayan ritual is detailed in the *Chilam Balam*, or "Book of the [this animal] Priest." The more militant of the Hero Twins, Xbalanque ("shbah-LONG-kay"), had skin resembling that of this animal. The name of this predator means "he who kills with one leap" in Guaraní. This animal was the *nagual* animal form of Tezcatlipoca. For 10 points, name these large, predatory felines common in Mesoamerican myths.

ANSWER: jaguars [or black panthers; or Panthera onca; or Balam Quitze until read; prompt on panthers or cats or felines]

<AK, Legends>

9. Yanardag lives in this country. The telpek is a traditional sheepskin hat from this country. This country's government has promoted the cultivation of a national kind of muskmelon, which has its own holiday. A golden horse which is a symbol of this country is named for one of its major tribes; that is the Akhal-Teke. This country contains three-quarters of (*) Sarygamysh Lake, which it shares with its northern neighbor. This country's major export is natural gas, and it is currently constructing a pipeline which will connect it with India. A notable archaeological site in this country is the ancient trading center of Merv, which is located near its city of Mary ("MAH-ree"). Many gold statues of this country's former ruler were torn down in the years following his death in 2006. This country, which is famous for its carpet industry, is covered by the Karakum desert. For 10 points, name this Central Asian country with capital Ashgabat.

ANSWER: Turkmenistan

<PS, Geography>

10. A Louis MacNeice sonnet likens this time to "Fate's great bazaar" and extols the reader to "concentrate on this Now." A poem named after this time begins its author's collection *Near the Ocean* with the exclamation "O to break loose, like the chinook salmon jumping and falling back." A poem about this time is often interpreted as subverting Keatsian imagery in its description of "the isolation of the sky" in its final stanza, which (*) Harriet Monroe initially removed. A poem about this time describes "a ring of men" that perform a "chant of paradise" in "devotion to the sun." That poem asks "Why should she give her bounty to the dead?", repeatedly calls Death the "mother of beauty," and ends by describing pigeons sinking "downward to darkness, on extended wings." For 10 points, a woman enjoys "complacencies of the peignoir ("pane-WAHR"), and late coffee and oranges" in a Wallace Stevens poem about what time of Christian churchgoing?

ANSWER: Sunday morning [prompt on partial answers; accept "Waking Early Sunday Morning"]

<RK, Poetry>

11. This piece's last section, usually played in B minor, begins with the pianist's left hand playing a grace note on E-sharp, then a long "B F-sharp" fifth, which is played in each measure as a drone. A 2015 book about this piece has a subtitle about an "Anatomy" and was written by Ian Bostridge, who often performs this piece. The fifth section of this piece begins with the pianist's right hand playing gentle arpeggiated sixths in E major, which is followed by a description of a dream at a "well by the gate." Near the end of this piece, the protagonist at last decides to take courage in the movement "*Mut!*" ("moot"), but is nevertheless terrified by the manifestation of three "phantom suns" in the sky. Sights of a (*) will-of-the-wisp and a linden tree appear in this piece, and its last section depicts a hurdy-gurdy man. This piece is its composer's second setting of poetry by

Wilhelm Müller. *Die schöne Müllerin* (“dee SHUR-nuh MYOO-lur-in”) was the predecessor to, for 10 points, what song cycle by Franz Schubert about the coldest, most unforgiving season of the year?

ANSWER: Winterreise (“VIN-tur-rise-uh”) [or Winter Journey]

<EK, Classical Music>

12. An author who initially described “always dreaming” of this city after moving here felt disdain for it after the failure of his poem *Hans Küchelgarten* (“KOO-shul-gar-ten”). A cursed life-like portrait in this city offers an artist a thousand ducats (“DUCK-its”) to abandon his own style in favor of one guaranteeing wealth and fame. After his affair is discovered, a character in this city is beaten up by Hoffman and Schiller and eats puff-pastries to recover. Before collapsing, a character in this city mutters “Forgive me, your excellency” to his landlady, who was told by a doctor to order a (*) coffin made of pine, not oak. A dark-haired woman in this city is compared to Perugino’s *Bianca* by an opium-addicted painter who, after being rejected by that prostitute at a brothel, slits his throat. A “certain official” in a “certain department” tasked with copying documents is mugged in this city, mirroring a later scene when clothing belonging to the “important person” is stolen by the ghost of that character, Akaky Akakievich. For 10 points, name this Russian city, the setting of Nikolai Gogol’s “Nevsky Prospekt” and “The Overcoat.”

ANSWER: St. Petersburg

<RK, Short Fiction>

13. During Jacques Lefebvre’s (“luh-FEV-ruh’s”) failed attempt to capture this city, William Rhett captured the French ship *Brilliant* with an improvised flotilla. Samuel Wragg was held hostage during a blockade of this city which was caused when governor Robert Johnson refused to give medicine to Blackbeard. A battle for this city included the capture of Moncks Corner and the scuttling of a fleet on the Cooper River. A blue flag with a crescent in the top-left corner reading “Liberty” was first flown at a siege of (*) Sullivan’s Island near this city. Since the defenders of this city were not granted honors of war, George Washington denied honors of war to surrendering British troops at Yorktown. William Moultrie repelled a fleet led by Charles Parker near this city, four years before it was surrendered to Henry Clinton by Benjamin Lincoln. For 10 points, name this South Carolina city that fell to the British in 1780 during the American Revolution.

ANSWER: Charleston [or Charles Town]

<RD, American History>

14. In an article defending “the reality of” this action, Philip Pettit distinguishes the two-place relation of instantiation from the three-place relation of exemplification. John McDowell argued that we can resolve a problem regarding this action by heeding the warning not to dig below the “bedrock” where no further justifications can be given. Charles Taylor argued that performing this action depends on knowledge of tacit (*) “forms of life” as well as premises and propositions in an essay titled after this action. A philosopher imagined a skeptic who tells someone who has never added numbers greater than fifty that sixty-eight plus fifty-seven equals five to illustrate a paradox regarding this action. Saul Kripke introduced the “quus” (“kwus”) function to illustrate a paradox in Wittgenstein’s *Philosophical Investigations* showing the impossibility of performing this action in language. For 10 points, identify this action that you may perform when stopping at a stop sign or obeying a law.

ANSWER: rule-following [or following a rule]

<EC, Philosophy>

15. A book by this linguist illustrates various grammatical concepts by exhaustively analyzing the sentence “The farmer kills the duckling.” This man speculated that people secretly wish they could say “Who did you see?” instead of “Whom did you see?” as part of a discussion of linguistic drift. This linguist expressed the idea that languages are not “tyrannically consistent” with the oft-quoted statement “All grammars leak.” This man’s work on the (*) Athabaskan languages demonstrated that the comparative method could be applied to non-Indo-European languages. Morris Swadesh was among this linguist’s students at Yale, where he taught in the

anthropology department at the end of his life. He collaborated with Alfred Kroeber to document the indigenous languages of California. For 10 points, name this author of the 1921 book *Language*, who co-names a hypothesis about linguistic relativity with Benjamin Whorf.

ANSWER: Edward Sapir

<WN, Social Science>

16. **These functional groups can be removed asymmetrically by the addition of trimethylsilyl azide. Aflatoxins form an intermediate with this functional group to intercalate with DNA in the liver. The reaction of epichlorohydrin (“epi-chloro-hydrin”) and bisphenol A creates polymer resins named after this functional group. Warfarin inhibits an enzyme removing this functional group from a precursor to (*) Vitamin K. In a mechanism similar to the Wittig reaction, they are formed through the nucleophilic addition of a sulfonium ylide (“ILL-id”) to a carbonyl. This functional group can also be synthesized by reacting an alkene with a peroxyacid, such as mCPBA, or through the addition of a base to a halohydrin. These cyclic groups are opened on the less substituted site when reacted with a nucleophile. For 10 points, name these compounds that contain a three-membered cyclic ether.**

ANSWER: epoxides [prompt on epoxy resins or cyclic ether until read]

<RD, Chemistry>

17. **In a book titled “after” this agreement, Sumantra Bose argued that this agreement’s flaws are reflected in the troubles of a city named after its “bridge-keepers.” With Cyrus Vance, David Owen helped develop a precursor to this agreement that involved dividing a country into ten semi-autonomous regions. Richard Holbrooke served as the chief negotiator for this agreement. A few months before this agreement was signed, the (*) Split Declaration ended hostilities between two participants in this agreement, which was preceded by NATO-led bombings in Operation Deliberate Force. This agreement, which recognized the autonomy of Republika Srpska (“SURP-skah”), was officially signed in Paris by Alija Izetbegović (“ah-LEE-ah ee-zet-BEG-oh-vitch”), Franjo Tuđman (“FRAHN-yo TOOJ-mahn”), and Slobodan Milošević (“mee-LOH-shev-itch”). For 10 points, name this 1995 General Framework Agreement for Peace that was reached at Wright-Patterson Air Force Base in Ohio ending the Bosnian War.**

ANSWER: Dayton Accords [or Dayton Agreement or Dayton-Paris Agreement; accept General Framework Agreement for Peace in Bosnia and Herzegovina before mention; accept Paris Protocol until read]

<RD, European History>

18. **A MATLAB function that models these devices takes an order n and two vectors f and a and approximates the equiripple output with Chebyshev polynomials using the Remez exchange algorithm. These devices name a process that can be “explicit” or “implicit” in large eddy simulation. They’re not transmission lines, but L networks of impedance and shunt admittance are used to build the m-derived type of these devices. These devices can be created with topologies named for Caer or Sallen-Key, and these devices can use a configuration known as Twin T. One of these devices approximating a “brick wall” as its order increases is named for Butterworth. They can either be (*) infinite impulse response or finite impulse response. Units of decibels per decade are used for the rolloff of these devices. A resistor in series with the load and a capacitor in parallel with the load defines the low pass variety of these devices. For 10 points, name these electronic components that attenuate signals with undesired frequencies.**

ANSWER: electronic filters [or filtering; accept FIR filters or IIR filters or m-derived filters or Butterworth filters]

<AK, Physics>

19. **This character “solicit[s] heaven” to “move the gods to send down Justice for to wreak our wrongs” by ordering people to shoot arrows at the stars. This character exclaims “Out on thee, murderer! thou kill’st my heart” after his brother kills a fly, but his brother convinces him that it was okay because it was a “black ill-**

favor'd fly." He dispatches his grandson to send a gift of weapons to a pair of brothers along with a scroll with a quotation from Horace saying that upright men have no need for weapons. This man vows "A (*) coffin I will rear" before slitting the throats of two characters disguised as the spirits of Rape and Murder. This man implores his son to "lend me thy hand, and I will give thee mine" after Aaron convinces him to let him cut off his hand. This man kills his daughter Lavinia before serving the heads of Chiron and Demetrius to their mother Tamora, the Queen of the Goths, in a pie. For 10 points, name this Roman general, the title character of a William Shakespeare tragedy.

ANSWER: Titus Andronicus [prompt on Andronicus]

<JN, Drama>

20. A linear curve-matching method determines the properties of one type of these features by approximating a parameter denoted with a lowercase s ; that solution was derived by Cooper and Jacob. These features may be tested at non-constant rate with the rapid additions of "slugs." The exponential integral is used to calculate drawdown for these features in the transient Theis solution, which relies on the validity of another principle for these features that relates piezometric (*) head and permeability to their flux in order to model their storativity and transmissivity. A cone of depression may form in both confined and unconfined types of these features if the rate of recharge, which partially depends on infiltration, is less than the rate of loss. Extractions from these features may induce ground surface subsidence, while the "artesian" variety of these features have positive pressure, and thus do not require pumping. For 10 points, name these subsurface features that contain water.

ANSWER: aquifers [or groundwater; or confined aquifers; prompt on wells]

<JN, Other Science (Earth)>

Bonuses

1. Jay Rosenblatt's short *The Smell of Burning Ants* incorporates documentary footage about these animals committing suicide. For 10 points each:

[10] Name these animals, which are attacked by a swarm of ants as children look on in a symbolic early scene from *The Wild Bunch*.

ANSWER: **scorpions**

[10] Soldiers cheer on two scorpions fighting to the death in a scene from this 2005 Sam Mendes film about Marines in the Gulf War.

ANSWER: **Jarhead**

[10] Documentary footage of scorpions opens *L'Age d'Or* ("lahzh dor"), the second surrealist collaboration between Salvador Dalí and this director, after *Un Chien Andalou* ("un shee-AN ahn-dah-LOO").

ANSWER: Luis **Buñuel** [or Luis **Buñuel** Portolés]

<WN, Other Art (Film)>

2. Traditionally, this genre utilized *quiproquo* ("kee-pro-KOH"), in which differing interpretations of a situation drive the plot along. For 10 points each:

[10] Name this formulaic genre of drama popularized in nineteenth-century France by authors like Victorien Sardou.

ANSWER: the **well-made play** [or **pièce bien faite**]

[10] Eugène Scribe ("oo-zhen screeb"), credited with inventing the well-made play, also used its formula for a number of these *written* works set to music by Giacomo Meyerbeer. Pierre Beaumarchais's ("boh-mar-SHAY's") Figaro trilogy inspired a number of these works.

ANSWER: **librettos** [or **libretti**; prompt on operas]

[10] This playwright lambasted the well-made play in his "The Quintessence of Ibsenism." Ironically, its effect on his own work can be seen in a play concerning the poet Eugene Marchbanks's attempts to court the elderly wife of Reverend James Morell.

ANSWER: George Bernard **Shaw**

<RK, Drama>

3. This man was captured by Simon of Utrecht ("YOO-trekt"), possibly after a traitor poured molten lead into his ship's rudder. For 10 points each:

[10] Name this fourteenth-century pirate who was legendarily offered a deal at his execution in which each of his men that his beheaded body walked past would be spared. He walked past eleven men, but they were killed anyway.

ANSWER: Klaus **Störtebeker** ("SHTUR-tuh-bay-kur") [or Nikolaus **Storzenbecher**; accept Klaas or Claas in place of "Klaus"]

[10] Klaus Störtebeker led this guild of pirates who rivaled the Hanseatic League for naval supremacy at their peak. They were gathered by the Dukes of Mecklenburg to help fight Margaret I of Denmark, and later called themselves the Likedeelers.

ANSWER: **Victual Brothers** [or **Vitalienbrüder**]

[10] The Victual Brothers were headquartered in Visby, a port on this body of water. The Hanseatic capital of Lübeck and its city of Danzig were major ports on this body of water.

ANSWER: **Baltic** Sea

<EC, European History>

4. Answer the following about how social scientists have explained the 1997 Asian financial crisis, for 10 points each:

[10] This 2002 Joseph Stiglitz book blames the crisis on the neoliberal policies of the IMF, and more broadly on the Washington Consensus.

ANSWER: **Globalization and Its Discontents**

[10] This woman's book *Casino Capitalism* blames the crisis on the volatility of the international financial system. This author of *States and Markets* referred to the modern system of nation states as "Westfailure," punning on the term "Westphalia system."

ANSWER: Susan **Strange**

[10] Paul Krugman is among the economists who have emphasized the role of this situation, in which an agent takes on greater risk because they know someone else will bear the cost of the risk.

ANSWER: **moral hazard**

<WN, Social Science>

5. Answer the following about uses of code-switching between Spanish and English in Latin American literature, for 10 points each:

[10] This postmodern Puerto Rican writer wrote the first fully-Spanish novel, 1998's *Yo-Yo Boing!* Calderón's *Life Is a Dream* inspired her novel in which Sigismundo is locked in the Statue of Liberty's dungeon, *United States of Banana*.

ANSWER: Giannina **Braschi** ("BRAH-skee")

[10] Yunió's narration of a Junot ("JOO-noh") Díaz novel about this character's "brief wondrous life" uses code-switching to relate this character's upbringing in Paterson under the shadow of Trujillo's regime and the "fukú" curse.

ANSWER: **Oscar Wao** [accept either underlined portion; or **Oscar** de León]

[10] Díaz's collection *Drown* opens with a quote from *Bilingual Blues*, a collection by Gustavo Pérez Firmat, a poet from this country. Pedro Juan Gutiérrez wrote a sordid trilogy whose title calls this country's capital "dirty."

ANSWER: Republic of **Cuba** [or *República de Cuba*]

<RK, Long Fiction>

6. According to Hippodamus, an event in this festival featured the two ugliest men in the city being rounded up, paraded with necklaces of figs, and stoned to death. For 10 points each:

[10] Name this festival honoring Apollo and Artemis that included the *pharmakoi* ritual.

ANSWER: **Thargelia**

[10] The Thargelia festival was celebrated by the citizens of this Greek city state, whose patron goddess won a contest with Poseidon by offering this city an olive tree.

ANSWER: **Athens** [or *Athênai*]

[10] In addition to featuring the procession of the *peplos*, the Panathenaia festival featured one of these events using the *kithara* on its first day. Another of these events was judged by the mountain god Tmolus.

ANSWER: **music** contest [accept anything relating to **music**; prompt on agon or contests; do not accept "singing contest"]

<AK, Legends>

7. The neofunctionalist interpretation pioneered by Ernst Haas argues that people like Jean Monnet have carried out this process primarily through "spill-over" between different domains. For 10 points each:

[10] Identify this process. It has sometimes been proposed that this process should take place at "two speeds" or "multiple speeds." The Charlemagne Prize rewards contributions to this process, such as those made by Richard von Coudenhove-Kalergi through a movement he established in 1923.

ANSWER: **European integration** [accept equivalents like the **integration of the European Union** or **European unification** or the **federalization of Europe**]

[10] The Chinese government has recently been making efforts to achieve increased economic integration in Asia, including the establishment in 2015 of this new institution, which was designed to compete with the Asian Development Bank. The US failed to convince key allies like Australia and Britain not to join it.

ANSWER: **Asian Infrastructure Investment Bank** [or **AIIB**]

[10] A fully-integrated European Union is sometimes seen as having the potential to become one of these political entities, which have the ability to exercise authority and exert influence globally. China is often seen as a rising one of these things, while the United States is generally recognized as being the only political one in the world today.

ANSWER: **superpowers**

<MC, Current Events>

8. Four reflective judgements are outlined in Immanuel Kant's book on this branch of philosophy, which is also explored in a book by John Dewey that considers its subject "as Experience." For 10 points each:

[10] Name this branch of philosophy that studies the nature of concepts such as art and beauty.

ANSWER: **aesthetics**

[10] In *The Work of Art in the Age of Mechanical Reproduction*, Walter Benjamin ("VALL-tuh BEN-yah-meen") argues that mechanical reproduction devalues this quality of a work of art, its unique "presence in time and space."

ANSWER: **aura**

[10] George Dickie is known for defending this theory of art, as is Arthur Danto, who defined art as an object existing in an "atmosphere of artistic theory" known as the "artworld."

ANSWER: **institutional** theory of art

<AK, Philosophy>

9. Answer some questions about the defense of Sihang Warehouse, for 10 points each:

[10] The defenders of Sihang Warehouse fought against the forces of what imperial power, which launched a full-scale invasion of China in 1937?

ANSWER: Empire of **Japan** [or *Dai Nippon Teikoku*]

[10] The defense of Sihang Warehouse was part of this larger 1937 battle. Nationalist Chinese and invading Japanese armies clashed for over three months in this battle, which decimated China's officer corps and produced a photograph of a baby in a bombed-out railway station titled *Bloody Saturday*.

ANSWER: Battle of **Shanghai**

[10] The public roster of the defenders of Sihang Warehouse listed this many names; in reality, the actual size was only about half this number, since its commander Xie Jinyuan ("sheh jin-yoo-EN") didn't want to give away how few troops he actually had.

ANSWER: **eight hundred** [accept **Eight Hundred** Heroes or *babai zhuangshi*]

<BL, World History>

10. This organization was founded by Willem Usselinx in 1621 and financed itself through slave trade on the Gold Coast. For 10 points each:

[10] Name this group that established colonies in Aruba and Curaçao and waged economic warfare against Spain and Portugal.

ANSWER: **Dutch West India** Company [or **WIC**; or *Geocroyeerde Westindische Compagnie*]

[10] One of the first Dutch settlements in the Americas was established in this modern-day country's state of Pernambuco. The colony fell after its capital of Recife was conquered by the Portuguese in 1654.

ANSWER: Federative Republic of **Brazil** [or *República Federativa do Brasil*]

[10] This Dutch privateer was the only person to ever capture a Spanish silver fleet, doing so near the Bay of Matanzas in Cuba in 1628. He appointed the then-fledgling Maarten Tromp as his flag captain, and died in battle when his fleet was intercepted by Dunkirkers, privateers in the pay of Spain.

ANSWER: Pieter **Hevn** ("hine") [or Pieter **Hein**]

<RD, Other History>

11. In the A-subtype of this phase, the director is parallel to the normal vector of each layer, while in the C-subtype, the director lies at an angle to the normal vector. For 10 points each:

[10] Name this phase characterized by distinct layers with directional and translational order, unlike the long range order of the nematic phase.

ANSWER: **smectic** phase [or **smectic** A phase; or **smectic** C phase; prompt on **SmA**; prompt on **SmC**]

[10] Smectic and nematic phases are exhibited by these materials, which exhibit properties in between those of an ordered solid and disordered liquid and are used in namesake displays.

ANSWER: **liquid crystals** [accept **liquid crystal** displays or **LCDs**]

[10] In an effect that underlies many LCD screens of calculators, the application of an electric field causes liquid crystals arranged in this configuration to change to the nematic phase, resulting in a dark pixel or segment.

ANSWER: **helix** [or **helices**; prompt on **twisted** or **T**]

<AK, Chemistry>

12. Before traveling to this location by a namesake train, an author is repeatedly warned that it is “a dreary place.” For 10 points each:

[10] Name this region. A “brontosaurus scrap,” which turns out to be some skin of an ancient sloth, inspired another author to travel to this region, as described in a 1977 book that also discusses the supposed log-cabin of Butch Cassidy.

ANSWER: **Patagonia** (That work is Bruce Chatwin’s *In Patagonia*.)

[10] This author of *The Old Patagonian Express* is renowned for travel literature like *The Mosquito Coast*. He described traveling from London to Tokyo by the Trans-Siberian railroad in *The Great Railway Bazaar*.

ANSWER: Paul **Theroux** [or Paul Edward **Theroux**]

[10] Before leaving for Patagonia, Theroux stops in Buenos Aires to meet this author, who recalled “[recovering] the world of [his] distant ancestors” by learning Anglo-Saxon after “[losing] the visible world” in the essay “Blindness.”

ANSWER: Jorge Luis **Borges**

<RK, Misc Literature>

13. Cell therapy techniques, such as stem cell transplants, can be broadly classified into two categories based on the source of the cells being transplanted. For 10 points each:

[10] While techniques that treat patients with another person’s cells are termed allogeneic, this term is used to describe techniques in which the patient’s own cells are modified and used in the treatment.

ANSWER: **autologous** [or **autogenous**; or **autogeneic**; or **autogenic**]

[10] Recent cell therapy research has focused on modifying these lymphocytes to express chimeric antigen receptors on their surfaces. These cells exist in “cytotoxic” and “helper” varieties, and predominantly mature in the thymus.

ANSWER: **T** cells [accept cytotoxic **T** cells or helper **T** cells or **T** lymphocytes]

[10] Production of autogeneic CAR-T (“car-T”) cells frequently involves the use of these restriction enzymes that may be engineered to cut precise regions of DNA. Secreted by *Xanthomonas* type-3 secretion systems, these enzymes have their cleavage domain from the FokI endonuclease fused to a repeat variable diresidue, unlike zinc finger nucleases.

ANSWER: **TALENs** [or **transcription activator-like effector nucleases**; prompt on **endonucleases**]

<AK, Biology>

14. In 1828, this religious movement was founded by Ram Mohan Noy, who had previously helped spread Unitarianism in India by co-founding the Calcutta Unitarian Society. For 10 points each:

[10] Name this Hindu reform movement that was later led by Debendranath Tagore, whose disagreements with Keshab Chunder Sen over the incorporation of Christianity led to a schism within this movement.

ANSWER: **Brahmo Samaj** [or **Brahma Samaj**; accept **Brahmo Sabha**; accept **Adi Samaj** or **Adi Dharma**]

[10] One of Ram Mohan Noy’s early goals for Brahmo Samaj was to abolish “social evils” like this funerary practice in which widows would commit suicide by throwing themselves on their husbands’ funeral pyres.

ANSWER: **sati** [or **suttee**]

[10] Another practice opposed by Brahma Samaj was the veneration of these Hindu images of deities. These images are ritually bathed during *abishekha*, which takes place as part of pujas.

ANSWER: **murti** [or **pratima** or **vigraha** or **rupa**; prompt on **idols** or **statues**]
<WC, Religion>

15. This musical number features a droning electric organ throughout as one of the performers calls out random numbers. For 10 points each:

[10] Name this musical number. It precedes Act I of the opera it appears in and features two characters in plain white shirts and suspenders, with one reciting a Christopher Knowles (“nohlz”) text describing “wind for the sailboat” and “these are the days my friends.”

ANSWER: **Knee Play 1** [or the **first knee play** or equivalent descriptions; prompt on **knee play**]

[10] Knee Play 1 kicks off this minimalist and largely-plotless opera by Philip Glass, the first in his *Portrait Trilogy*.

ANSWER: **Einstein on the Beach**

[10] This scene in *Einstein on the Beach* is followed by “Spaceship,” scored for electric organ and soprano solo, and is divided into a cadenza, prelude, and aria. Robert Wilson’s set design for this scene consists entirely of a rectangle of light that appears on the floor, floats up and rotates, and ascends offstage.

ANSWER: **Bed**

<AK, Opera>

16. An anonymous fifth-century artist known as this city’s “Painter” developed the red-figure style in a vase that shows a satyr superimposed on a depiction of Hermes. For 10 points each:

[10] Name this city, home to a museum on Museum Island that houses several fragments of panels depicting the life of Telephus, who is featured along with a frieze depicting the Gigantomachy in a reconstruction of the Pergamon Altar.

ANSWER: **Berlin**, Germany

[10] The British Museum is home to this set of sculptures that were once part of the frieze of the Parthenon.

ANSWER: the **Elgin Marbles**

[10] Glykon’s copy of the *Farnese* (“far-NAY-zay”) *Hercules* can be found in this city’s National Archaeological Museum. A site in this city lies in the *grotta vecchia* (“GROW-tah VECK-yah”) and featured a tree that supposedly died the year of Dante’s death and was replanted by Petrarch.

ANSWER: **Naples**, Italy [or **Napoli**, Italia] (That site is Virgil’s tomb.)

<AK, Painting/Sculpture>

17. The four steps of this algorithm are: [read slowly] append a character to the input, create a matrix of circular shifts of the input, lexicographically sort them, then return the last column of the matrix. For 10 points each:

[10] Name this transformation named for two British computer scientists that can also be efficiently computed with a suffix array.

ANSWER: **Burrows–Wheeler** transform [or **BWT**]

[10] Because the Burrows–Wheeler transform outputs strings with long runs of single characters, it can be used for this process. This process reduces the amount of data that information takes up, and can be done in a lossy or lossless way.

ANSWER: **compression**

[10] The Burrows–Wheeler transform is used in many algorithms that perform this task. The Needleman–Wunsch algorithm is a dynamic programming algorithm for this task, which can use PAM (“pam”) or BLOSUM (“blow-sum”) substitution matrices for scoring.

ANSWER: sequence **alignment** [accept nucleotide sequence **alignment** or amino acid sequence **alignment**]

<AK, Computer Science>

18. Archibald MacLeish declares science “that simple saint [which] cannot be bothered figuring what anything is for” in a poem in which this man “Discovers the Sea Shell.” For 10 points each:

[10] Name this subject of a W. H. Auden elegy which describes him as an “important Jew who died in exile” who studied the “fauna of the night” and “told the unhappy Present to recite the Past.”

ANSWER: Sigmund **Freud**

[10] Auden later wrote a similar elegy for this poet, which calls the day of his death a “dark cold day” and claims “Mad Ireland hurt you into poetry.” This poet included “Leda and the Swan” in his collection *The Tower*.

ANSWER: William Butler **Yeats**

[10] This poet, whom Auden popularized in the U.S., modeled his “Verses on the Death of T. S. Eliot” on “In Memory of W. B. Yeats.” He wrote an elegy for a metaphysical poet describing him as having “sunk in sleep.”

ANSWER: Joseph **Brodsky** [or Iosif Aleksandrovich **Brodsky**] (That work is “Elegy for John Donne.”)

<RK, Poetry>

19. In lattice QCD, preserving this property leads to the existence of twice as many states than a continuum, a phenomenon known as fermion doubling. For 10 points each:

[10] Name this property that a gauge theory has if rotating either the left-handed or right-handed components of the Dirac field has no effect on the Lagrangian. This property implies that fermions must be massless.

ANSWER: **chiral symmetry**

[10] QCD is a theory of the strong force that arises from gluon-mediated interactions between these elementary particles that make up hadrons. Ones named “charm” and “strange” belong to their second generation.

ANSWER: **quarks**

[10] This physicist introduced lattice QCD to non-perturbatively model the strong force. He also names a quantity that is the trace of a path-ordered exponential of the gauge field along a closed curve, his namesake “loop.”

ANSWER: Kenneth **Wilson** [or Ken **Wilson**; accept **Wilson** loop]

<AK, Physics>

20. This man’s killer failed to befriend Emma Goldman after hearing one of her speeches, and sought to imitate Gaetano Bresci’s (“BREH-shee’s”) assassination of Umberto I a year earlier. For 10 points each:

[10] Name this president, killed by anarchist Leon Czolgosz (“CHOLE-gosh”), whose death allowed Theodore Roosevelt to ascend to the presidency.

ANSWER: William **McKinley**

[10] McKinley’s assassination was forewarned by this personal secretary of his, whose later term as Secretary of the Treasury witnessed the disastrous Panic of 1907.

ANSWER: George **Cortelyou**

[10] The Panic of 1907 began when Fritz Augustus Heinze (“HINE-tsu”), one of three “kings” of this commodity in Butte (“byoot”), Montana, tried to corner the market for this resource. The Anaconda Company dominated production of this commodity in the early twentieth century.

ANSWER: **copper** [accept United **Copper**; accept Anaconda **Copper** Mining Company]

<BL, American History>