



ACADEMIC  
COMPETITION  
FEDERATION

# ACF NATIONALS 2019

## PLAYOFFS 1

Packet by

## The Editors (1)

### Editors

Auroni Gupta, Jordan Brownstein, Matt Bollinger,  
JinAh Kim, Alex Damisch, Ike Jose, Andrew Hart, Andrew Wang, Athena Kern,  
Aaron Rosenberg, Jason Cheng

### Writers

Mike Bentley, Will Nediger, Jason Zhou, Dylan Minarik, Rob Carson, Will Alston,  
Olivia Lamberti, Billy Busse, Zach Foster, Eric Mukherjee, Saul Hankin

## Tossups

1. This composer wrote a chamber work whose first theme, a quotation from the third scene of André Danican Philidor's opera *Le maréchal ferrant*, is introduced by two clarinets in thirds. This composer wrote a 77-measure draft of a string trio with two horns, which was finished in a second edition by adding an additional violin; that work and its companion pieces were called "the most perfect compositions that ever assumed a musical form" by this composer's biographer, Alfred Einstein. In the minuet movement of a work by this composer, two horns playing in thirds repeatedly clash against descending string accompaniment; that piece by this composer contains other intentional mistakes such as a violin cadenza that humorously ends up in the wrong key. For 10 points, name this composer of a "Gran Partita" serenade, divertimenti like K. 522, "A Musical Joke," and three other divertimenti that are grouped as "Salzburg Symphonies."

ANSWER: Wolfgang Amadeus **Mozart**

<Music>

2. Ivar Ugi argued that some molecules forgo this behavior in favor of the TR mechanism. This behavior was supported in a paper which used a modified WKB approximation to model nitrogen inversion as a tunneling process. A "chimeric" variant of this behavior occurs in disphenoidal molecules, while alternatives to this behavior include ones named for resembling a lever or a turnstile. This vibrational behavior results in a  $C_{4v}$  ["C sub four V"] symmetric intermediate while a nearly  $C_{5v}$  ["C sub five V"] symmetric intermediate forms in a related behavior named for Bartell. This mechanism was proposed to explain the presence of a compound's different fluorine-phosphorus bond lengths in spite of the presence of a single signal in F-NMR. This mechanism also occurs in square pyramidal molecules that resemble its intermediate. For 10 points, name this exchange of axial and equatorial ligands via pivoting that occurs in trigonal bipyramidal molecules.

ANSWER: Berry **pseudorotation** [accept **Berry** mechanism; accept **BPR**; prompt on **fluxional**]

<Chemistry>

3. Hundreds of Ghanaian students clashed with police in this location, carrying a banner that displayed a man's head impaled with a knife, to protest the death of medical student Asare Addo. A man's corpse was removed from this location and reburied after Dora Lazurkina publicly claimed that a ghost asked not to be buried next to that man. This place was the *destination* of a 16th and 17th century Palm Sunday ritual in which a ruler, on foot, led the head of the church on a donkey. A red granite step pyramid in this location titles a David Remnick history of the "last days" of an empire. In 1987, the East German teenager Mathias Rust shockingly landed a plane in this location, which was the site of annual military parades on May Day and Victory Day. For 10 points, name this Moscow plaza containing Lenin's Mausoleum, St. Basil's Cathedral, and the Kremlin.

ANSWER: **Red Square** [or **Krasnaya Ploshchad**; prompt on **Moscow**; prompt on answers such as **Lenin's Mausoleum**, **St. Basil's Cathedral**, or the **Kremlin** by asking "Where is that building?"]

<European History>

4. Several otherwise blank pages within this book show curves that are meant to represent its "circular" design. A girl in this book is said to have "easy" eyes, and her beauty is compared to the sorrowful singing of a Jewish cantor. A "dictie" woman in this book falls in love at age nine with a muscled pseudo-prophet who rides out of town on a "pitch-black bull," but is later mocked by him as a "lil milk-white gal." A woman in this book with skin "like dusk on the eastern horizon" is described as a "growing thing ripened too soon" in a "blues ballad" that opens this collection. Alice Walker drew from this collection's poem "Georgia Dusk" for her tombstone for Zora Neale Hurston, which reads "A Genius of the South." For 10 points, name this collection that is bookended by the vignette "Karintha" and the play "Kabnis," the masterpiece of Harlem Renaissance author Jean Toomer.

ANSWER: **Cane**

<American Literature>

5. In one paper, this thinker argues that “helping the grass to grow” can also mean “assisting the marijuana to mature.” That example is used to illustrate “timeless meanings” in this philosopher’s paper “Utterer’s Meaning and Intentions.” This thinker described a man who is getting on well at his job because “he likes his colleagues, and he hasn’t been to prison yet” in a paper that discusses how people naturally try to “be perspicuous” and “be relevant.” This philosopher’s 1967 William James Lectures were included in the collection *Studies in the Way of Words*, which discusses how speakers flout the maxims of Quantity and Quality and defines the Cooperative Principle. This philosopher categorized a concept as “conventional” or “conversational” in a paper that examines non-explicit meanings. For 10 points, name this author whose “Logic and Conversation” lays out his theory of implicature.

ANSWER: H. Paul Grice [or Herbert Paul Grice]

<Philosophy>

6. Some cancer patients experience deposits of sterile vegetation onto these structures in a “marantic” or “nonbacterial” condition. Though less common than dental plaque formation, damage to these structures is the severest result of *Streptococcus mutans* infection. The area of one of these structures is inversely proportional to the velocity time integral or the square root of the pressure gradient, which can both be read from a Doppler display. An increased preload accompanied by a reduced afterload suggests that one of these structures is insufficient, or regurgitant. The chordae tendineae [“cord-eye tendon-eye”] anchor the papillary muscles to these structures to prevent their prolapse. Two of these structures, which consist of either two or three “leaflets” or “flaps,” close to create the “lub” sound. For 10 points, name these four structures which allow blood to flow in only one direction in the heart.

ANSWER: heart valves [or the aortic valve; or the pulmonary valve; or the mitral valve; or the tricuspid valve; or the bicuspid valve; or the semilunar valves; or the atrioventricular valves]

<Biology>

7. Dwight MacDonald likened the organization of this series to a military chain of command in an article lambasting the “unreadable” double-columns into which it is typeset. This series was published with a “Synopticon,” in which 102 topics that repeatedly appeared throughout its texts were alphabetically indexed. This series begins with a volume written by Robert Hutchins asserting that its subjects are interlocked in a “great conversation.” After only 138 copies of this series were sold when it first was released in 1952, Kenneth Harden trained an army of salesmen to go door to door peddling it and enrolling many buyers in discussion groups. This series was compiled with the same ethos as the syllabus at St. John’s College in Annapolis and the “Core Curriculum” at Columbia University. Mortimer Adler helped assemble, for 10 points, what 54-volume series of authors in “The Western World,” which was put out by Encyclopedia Britannica?

ANSWER: *The Great Books of the Western World*

<Other Academic>

8. This author illustrated the idea that beauty is “the promise of happiness” with an anecdote about Alberic admiring the smallpox scar of his mistress. A photograph of the plaster cast of Metilde Dembowski’s hand kept on this writer’s desk is printed in the first section of W.G. Sebald’s *Vertigo*, which consists of a biography of this author. While traveling with Madame Gherardi, this author wrote of the transformation undergone by tree branches left in a Salzburg salt mine, which inspired him to describe a process with stages of “Admiration,” “Acknowledgement,” “Hope,” “Delight.” This author sketched a diagram on a playing card that depicts the “crystallization” of love as a journey from Bologna to Rome. This author of *On Love* wrote of nearly fainting in a Florence basilica, thus lending his name to a “syndrome” whose sufferers become overwhelmed by art. For 10 points, name this author whose experiences in the Napoleonic Wars inspired his novel *The Charterhouse of Parma*.

ANSWER: Stendhal [or Marie-Henri Beyle]

<European Literature>

9. Close to this river's mouth, the eunuch Yishiha founded the Yongning Temple, whose namesake stele [STEE-lee] displays a mantra written in four languages. Uchida Ryohei founded a secret right-wing paramilitary group named for this river which used "continental *ronin*" to incite conflicts across Asia. The "Sixty-Four Villages East of the River" were on territory to the north of this river. In response to attacks by Hong-huzi bandits during the Boxer Rebellion, a city's police chief had thousands of people driven into this river with bayonets to drown. A major tributary of this river contains Zhenbao Island, the site of a 1969 ambush by PLA soldiers. The treaty of Kyakhta clarified a boundary defined by this river, modifying an earlier treaty in which the Kangxi [kahng-shee] Emperor demanded the destruction of Albazin. This river's north bank was transferred in the Treaty of Nerchinsk. For 10 points, name this river that forms much of the boundary between China and Russia.

ANSWER: Amur River [or the Black Dragon River; or Heilongjiang]

<World History>

10. The Texas Tommy is considered the first dance in this style, because it broke away from a closed partnering position to an open position. Frankie Manning and Frieda Washington introduced the air-step to one dance in this style. Singer Ivie Anderson recorded the original version of a Duke Ellington song, dedicated to his former trumpeter Bubber Miley, which coined the name for this style of dance and music. The Savoy Ballroom in Harlem is often said to be the birthplace of one dance in this style, the Lindy hop. A song used for dances in this style that begins with a tom-tom solo is titled "Sing, Sing, Sing"; Benny Goodman, who popularized that song, was dubbed the "King of" this style of dance music. For 10 points, name this family of social dances from the 1930s and 1940s, often danced to a namesake type of big band music, which included the jitterbug.

ANSWER: swing dance [or East Coast swing; or West Coast swing; anti-prompt on Balboa or on shag or Lindy hop or jitterbug before mention, by asking "What general movement was that dance a part of?"]

<Other Fine Arts>

11. *Description acceptable.* Sultan Cem, an Ottoman pretender, died accompanying a king in this conflict, who also bought a succession claim from Andreas Palaiologos to prepare for a planned crusade on Constantinople. During this conflict, the Lord of Aubigny's cavalry and pikemen routed Gonzalo Fernandez de Cordoba's swordsmen at the Battle of Seminara. Michael Howard wrote that the instigator of this conflict led the "first modern army" because it included, for the first time, a siege train whose horse-drawn bronze cannons kept pace with infantry. The first recorded syphilis outbreak in Europe occurred during this conflict after an army easily took Naples. A king who was encouraged to enter this conflict by Etienne de Vesc suffered a strategic defeat at the Battle of Fornovo. It began after Ludovico Sforza opened Milan to a foreign army, whose successes drove the Florentine populace to embrace Girolamo Savonarola. For 10 points, identify this 1494-95 conflict, a transalpine invasion by the king of France.

ANSWER: Charles VIII's invasion of Italy [or Charles VIII's Italian War; or the First Italian War; or the 1494 Italian War; or Charles the Affable's invasion of Italy; prompt on the Italian Wars; prompt on answers that mention Charles without specifying Charles VIII]

<European History>

12. A major comparative study of this industry, which used data from Iowa and Manitoba as a check on the broader results, was published in 1990 by James Hahn and a leading American economist who studies this industry, the Stanford professor Victor Fuchs. The paper that initiated the economic study of this industry begins with an analysis of the welfare theorems and concludes that, because of this industry's inherent complexity, including an element of "trust" and high ethical standards, its "impersonal price system" provides an "incomplete description of reality." That seminal 1963 paper, which concluded that this industry could not be modeled competitively, is titled for its "uncertainty" and is by Kenneth Arrow. The economist Jonathan Gruber was the policy architect of a major government intervention in this industry in 2006 in Massachusetts under Governor Mitt Romney. For 10 points, what industry was radically reshaped in 2009 via the Affordable Care Act?

ANSWER: healthcare industry [accept any answer indicating medical care or health care industry; accept health insurance industry or similar answers; do not accept or prompt on answers indicating "pharmaceutical (industry)" or "(prescription) drug (industry)" or similar]

<Social Science>

13. An 1897 textbook by this scientist introduces a formula for describing the action around monodromic points. This mathematician strengthened the result that neighborhoods are dense if they have “severe singularities” by considering the modular lambda function. Thus, this scientist improved and names the refinement of the Casorati-Weierstrass [VYE-ur-shtrass] theorem. He developed a recursive integral expression that allows for the use of successive approximations to solve ODEs, and which is often used to give conditions for when a function is Lipschitz continuous. The result that a non-constant, entire function takes on either the entire set of complex values, or almost all but one of them, is known as this mathematician’s “little theorem.” This son-in-law of Charles Hermite names a theorem with a Danish mathematician giving conditions for when solutions to initial value problems exist and are unique. For 10 points, name this French mathematician who names that aforementioned theorem with Per Lindelof.

ANSWER: Emile **Picard**

<Other Science>

14. This character is compared to “pitch that blackens the hands of its bearer” and a “shoe that bites its owner's feet” in a series of insulting similes. This character is described as wailing “like a woman giving birth” while watching a flood wash away people “like so many fish.” A couplet describes this character’s threat to “let the dead... eat the living” and make the “dead outnumber the living,” after which she is told that her request will bring about “seven years of empty husks.” After asking “where are your bridegrooms that you keep forever,” a man taunts this character by listing her lovers, including the “mighty lion,” the “shepherd-bird,” and the date gardener Ishullanu. Earlier, she promised a “chariot of lapis lazuli and gold” to that man, who rejects her, recounting this character’s fateful love of Tammuz. For 10 points, name this deity who gets Anu to send the Bull of Heaven after her advances are rebuffed by Gilgamesh.

ANSWER: **Ishtar**

<World Literature>

15. Mark Morrison-Reed’s book *Black Pioneers* describes early efforts to overcome institutional racism in introducing this religion to black communities. Practitioners of this religion often read or sing from texts entitled *Singing the Living Tradition* and *Singing the Journey*. Norbert Čapek [CHAH-pek] introduced a springtime ritual in which congregants each contribute to a common bouquet representing this religion, and then leave with a different flower than the one that they had brought in. In 1995, this religion amended its major unifying religious statement, the Principles and Purposes, to include a sixth entry acknowledging “spiritual teachings of Earth-centered traditions.” This faith, which is symbolized by hands releasing a dove or two circles around a flaming chalice, was formed from the merger of two Christian denominations. For 10 points, name this liberal religion with no particular creed about the nature of a higher power.

ANSWER: **Unitarian Universalism** [or **UU**; prompt on Unitarianism; prompt on Universalism]

<Religion>

16. A woman in this novel imagines a knife slicing her skin after learning that a man “loves the other sex, you see,” and again when her niece compares a war statue to an ad for sanitary towels. The sister of that woman in this novel is traumatized by a pale, “pock-marked” flasher on the way to Lumley’s as a girl, and she is later arrested for throwing a brick while agitating for the vote. Characters in this novel repeatedly discuss “the psychology of great men” like Napoleon after meeting on the night of an air-raid. A protagonist repeats “And now?” while holding out her hands to her brother in part of this novel set in the “Present Day”; in that section, North sees “door after door” covered in the flash and circle of the British Fascists on the way to ask his cousin Sara to his aunt Delia’s party. Parts of this “Novel-Essay” were spun off into *Three Guineas*. For 10 points, name this late novel by Virginia Woolf that follows the Pargiter family from 1880 to the 1930s.

ANSWER: *The **Years***

<British Literature>

17. The Friedlander waveform expresses this quantity as the product of a decaying exponential term and a term of the form "1 minus quantity  $t$  divided by the time at which the waveform crosses the x-axis." For a degenerate Bose gas at low temperature, this quantity is proportional to the five-halves power of temperature. The Bourdon tube measures this quantity by pulling on a metal link to control a dial indicator. This variable is constant during the reversible heating phase of the Diesel cycle as well as for both the heat addition and rejection phases of the Brayton cycle. One of the Maxwell relations states that the partial derivative of temperature with respect to this variable at constant entropy equals the partial derivative of volume with respect to entropy when this variable is constant. The work done by an expanding gas is equal to the integral of this variable with respect to volume. For 10 points, name this state variable which varies inversely with volume according to Boyle's law.

ANSWER: pressure (the Friedlander waveform models pressure from blast waves)

<Physics>

18. As district attorney, this politician employed unconstitutional surveillance tactics to convict four left-wing union officials of murdering George Alberts on the *Point Lobos* freighter. In a ploy dubbed the "Great Train Robbery," Richard Nixon boarded this politician's private car and persuaded his delegation to support Eisenhower at the 1952 Republican Convention. As governor, he initially opposed, but ultimately signed, the Levering Act, requiring instructors at his state's universities to sign loyalty oaths. The John Birch Society funded billboards calling to impeach this man from a position in which he asserted that "legislators represent people, not trees or acres." Delivering a unanimous opinion, this one-time running mate of Thomas Dewey called for a policy to be implemented "with all deliberate speed." For 10 points, name this long-serving Chief Justice who delivered the opinions for such cases as *Reynolds v. Sims* and *Brown v. Board*.

ANSWER: Earl Warren

<American History>

19. Erika Wood, an advocate for this cause, led a mid-2000s effort by the ACLU and Brennan Center of Justice to call people from 23 states and determine their knowledge of the relevant laws. Implementing this reform requires challenging the legal precedent set in the 1974 Supreme Court decision *Richardson v. Ramirez*. Advocates of this cause in Alabama were unsure who could benefit from it until a 2017 law clarified the definition of "moral turpitude." In 2016, the Virginia Supreme Court overturned an executive order by Governor Terry McAuliffe enforcing this reform. Supporters of this reform seek to reverse a situation often described as "civil death." Though Charlie Crist enacted a sweeping reform of this kind in 2007, it was rolled back by his successor Rick Scott. The passage of Amendment 4 on the 2018 midterm election ballot in Florida has enacted, for 10 points, what voting rights reform?

ANSWER: felon enfranchisement [or descriptive answers indicating allowing ex-felons to vote; or descriptive answers indicating allowing ex-criminals to vote; prompt on expanding the vote or similar answers that do not indicate that felons are the beneficiaries until "voting" is mentioned]

<Current Events>

20. According to Janet Kaplan's biography *Unexpected Journeys*, this artist painted a "Mother Superior" leading a pack of bicycling children away from a beehive-shaped building as the first entry in an autobiographical triptych. In one of thirty-nine paintings by this artist that was controversially donated by Walter Gruen to the MAM, an owl-human hybrid dips its brush into light that has been dispersed through a prism to create a bird that pops out from the drawing paper. This artist, who felt marginalized as a *femme enfant* in Paris, joined a band of refugees from the Nazis in late 1941 and permanently left Europe. This painter, who included her characteristic checkerboard floors in paintings such as *Useless Science, or the Alchemist*, often played exquisite corpse with Leonora Carrington, her best friend and neighbor in Mexico City. For 10 points, name this Spanish-born surrealist whose paintings were inspired by the occult.

ANSWER: Remedios Varo (Uranga)

<Painting and Sculpture>

## Bonuses

1. In most protocols for generating these structures, cells are first exposed to tissue-specific factors such as Fgf4 ["F-G-F-four"] or Pax8 ["pax eight"], and are then embedded in a medium made of Matrigel. For 10 points each:  
[10] Identify these three-dimensional cell cultures that can mimic structures like the thyroid, gut, or brain.

ANSWER: **organoids**

[10] Most organoids are derived from these cells, which can either divide to renew themselves or terminally differentiate into mature cells.

ANSWER: **stem** cells [accept any specific subtypes, such as embryonic **stem** cells, adult **stem** cells, or induced pluripotent **stem** cells]

[10] Organoid formation is thought to be driven by self-assembly of stem cells with similar expression levels of these cell adhesion molecules. These calcium-dependent proteins bind to catenins to form the intermediate junctions between the actin cytoskeletons of neighboring cells.

ANSWER: **cadherins**

<Biology>

2. Norman Schwarzkopf Sr. trained early agents of this organization, which developed the "Apollo," a helmet that silenced screams from torture while amplifying them for its victims. For 10 points each:

[10] Name this intelligence service whose repressive domestic arm cracked down on opponents of the White Revolution and supporters of the Tudeh Party.

ANSWER: **SAVAK** [or **SAVAMA**; or **Sazeman-e Ettela'at va Amniyat-e Keshvar**; prompt on Iranian Domestic Intelligence or equivalents]

[10] The SAVAK was deployed by the Shah of Iran, a US-backed dictator who belonged to this dynasty established by his father, Reza Shah.

ANSWER: **Pahlavi** Dynasty

[10] The SAVAK participated in this incongruously-named alliance of intelligence agencies along with those of France, Saudi Arabia, Egypt, and Morocco. Formed in Kenya in 1976, it assisted dictators like Mobutu and Siad Barre in opposing communists in Africa.

ANSWER: **Safari Club**

<World History>

3. In a book about this kind of therapy "integrated," Erving and Miriam Polster developed the concept of "contact-boundary phenomena." For 10 points each:

[10] Give this word that describes a "practice" of personal exploration developed in part based on a "therapy" of the same name developed by Laura and Fritz Perls.

ANSWER: **gestalt** [accept **gestalt** practice or **gestalt** therapy]

[10] Price worked with Fritz Perls while running this "institute" in Big Sur, California, which aimed to advance the study of "human potentialities." Aldous Huxley was a prominent figure in this institute that spread new-age ideas during the counterculture movement of the 1960s.

ANSWER: **Esalen** [ESS-ah-len] Institute

[10] Gestalt practice combined western therapeutic ideas with the introspective meditative practices of this eastern religious movement that was popularized in the U.S. by the unrelated writers D. T. Suzuki and Shunryu Suzuki.

ANSWER: **Zen** Buddhism [or **Chan** Buddhism; or **Seon** Buddhism; prompt on Mahayana or Buddhism]

<Social Science>

4. This philosopher's most famous text inspired the similarly-named *A Vindication of the Rights of Whores*, a work of sex-positive feminist sociology. For 10 points each:

[10] Name this proto-feminist who argued for the education of women in *A Vindication of the Rights of Woman*.

ANSWER: Mary **Wollstonecraft**

[10] A full century before Wollstonecraft, this thinker published *A Serious Proposal to the Ladies*, which called for greater religious and secular education for women through female-only academies.

ANSWER: Mary **Astell**

[10] Astell created six rules to guide women's metaphysics that were based on Antoine Arnauld and Pierre Nicole's *The Logic of the Art of Thinking*, which is often named for this Jansenist abbey.

ANSWER: **Port-Royal**-des-Champs [or the **Port-Royal** Logic]

<Philosophy>

5. In his response to Christina Rossetti's "The Convent Threshold," this author took the point of view of a man trying to convince his lover not to become a nun. For 10 points each:

[10] Name this author who eventually abandoned that poem, "A Voice from the World," due to the gap between his religious and aesthetic ideals. His reading of Duns Scotus later in life helped him to both reconcile the two and develop his concepts of "inscape" and "instress."

ANSWER: Gerard Manley **Hopkins**

[10] Hopkins compares passion to one of these phenomena throughout "A Voice from the World." In another Hopkins poem, one of these events causes the title wreck of the *Deutschland*.

ANSWER: a **storm** [prompt on answers like wind or rain; prompt on weather]

[10] In a poem subtitled "a nun takes the veil," Hopkins described heaven as this kind of place "where no storms come." "The Wreck of the Deutschland" asks the reader to "Remember us in the heaven-[this word] of the Reward."

ANSWER: **haven** (the poem is "Heaven—Haven")

<British Literature>

6. In a cartoon by this illustrator, a woman with coiffed hair looks down through a magnifying glass at a tiny man that she prepares to prick with a needle. For 10 points each:

[10] Name this illustrator from the late-19th and early-20th centuries whose drawings of women with hourglass figures and "S-bend" corsets popularized a fashion standard known as his namesake "girl."

ANSWER: Charles Dana **Gibson**

[10] In the drawing "Woman: The Eternal Question," Gibson depicts this model with her hair falling into the shape of a question mark. In a later incident, she described kicking a parasol while sitting on a "red velvet swing" in a 24th Street apartment.

ANSWER: Evelyn **Nesbit** (the "red velvet swing" incident refers to her first trip to Stanford White's apartment)

[10] As the Gibson Girl's coiffed hair waned in popularity, Irene Castle and Clara Bow popularized this short haircut for women, which many flappers adopted along with close-fitting cloche hats.

ANSWER: **bobbed** hair [or **bob** cut]

<American History>



7. The 1951 study *The Voices of Silence* was an attempt to give physical form to this idea. For 10 points each:

[10] Identify this theoretical assemblage of postcards and photographic reproductions that André Malraux believed could serve as a portable, accessible record of the world's art history.

ANSWER: **Museum Without Walls** [or **Imaginary Museum**; or **Musée Imaginaire**]

[10] The LA County Museum of Art houses this American artist's monumental work *The 1/4 Mile*, which comprises 190 panels illustrating art historical works such as the Parthenon frieze and Chinese bodhisattvas interspersed with references to this man's own "Combine" paintings.

ANSWER: Robert **Rauschenberg** [or Milton Ernest **Rauschenberg**]

[10] In *Atlas*, a set of nearly 4000 photographs comprising a cultural history from 1962 onwards, this postwar German painter included the source images for his blurred, photorealistic portraits of members of the Red Army Faction.

ANSWER: Gerhard **Richter**

<Painting and Sculpture>

8. Fraser Stoddart's work on supramolecular chemistry mostly focused on derivatives of these compounds. For 10 points each:

[10] Name this class of alkylated bipyridine derivatives. These di-cations can undergo a reduction to form a deep blue radical cation, and an additional reduction to form a yellow quinoid.

ANSWER: **viologens**

[10] The most prominent viologen is an herbicide named for its nitrogens being in this relative position to each other. Constituents in this relative position are the farthest apart from each other on a six membered ring.

ANSWER: **para** [accept **paraquat**]

[10] The nitrogens in paraquat and viologens in general are considered to have this property, which typically refers to atoms bound to four alkyl substituents.

ANSWER: **quaternary**

<Chemistry>

9. The narrator of this work recalls having a vision of a mob of rats dying from the poison he had scattered in one of his milk-cellars. For 10 points each:

[10] Name this prose work in which a nobleman describes a crisis through which he has "lost the ability to think or speak coherently about anything at all."

ANSWER: *The Lord Chandos Letter* [or *The Letter of Lord Chandos*; prompt on *Ein Brief* or *A Letter*]

[10] The author of *The Lord Chandos Letter*, Hugo von Hofmannsthal, was part of a group of "Young" writers that met in one of this city's coffee houses. This capital city's fin-de-siecle [FAN duh s'YEH-cluh] cultural scene included writers like Sigmund Freud.

ANSWER: **Vienna**

[10] A letter written by Chandos's wife is the postscript to this J.M. Coetzee novel, which largely focuses on lectures delivered by the title author on subjects such as animal rights and Kafka.

ANSWER: **Elizabeth Costello**

<European Literature>

10. An unofficial lexicon for this language is available at a satirical website named for the expression “talking cock,” which refers to the idle banter in gibberish that characterizes conversations in this dialect. For 10 points each:

[10] Identify this notoriously staccato and difficult-to-imitate English Creole which incorporates loanwords from Tamil, Hokkien, and Malay and uses the filler word “lah” as a sort of punctuation.

ANSWER: **Singlish** [or **Singaporean English**]

[10] Lee Kuan Yew, who denounced Singlish as a “handicap,” launched a campaign to encourage Singaporeans to speak this most common variant of Chinese.

ANSWER: **Mandarin**

[10] Singaporeans memorize combinations of Singlish, Malay, and Hokkien words to able to order from these cafes, which serve as public gathering places throughout Southeast Asia. Their name combines the Malay word for “coffee” and the Hokkien word for “shop.”

ANSWER: **kopitiam**

<Geography>

11. This poet supposedly drove Lycambes and his daughters to suicide with one of his verses, and was said to have become a poet after encountering the Muses on his way to sell a cow. For 10 points each:

[10] Name this Greek poet from Paros. An Isaiah Berlin essay takes its title from a fragment by this author that states “a fox knows many things, but a hedgehog knows one important thing.”

ANSWER: **Archilochus**

[10] Archilochus’s reputation as the first poet to write about his personal experiences derives from such poems as a quatrain that describes his performance of this action near a bush in Thracia, exclaiming, “I saved my life. What do I care...? The hell with it!”

ANSWER: **throwing away** his **shield** during battle [accept obvious equivalents; prompt on **running away** from **battle** or similar]

[10] Archilochus often wrote in an obscene genre of Greek poetry named for this meter. This metrical foot, the opposite of a trochee, consists of an unstressed syllable followed by a stressed syllable.

ANSWER: **iambus** [or **iambic**; or **iamb**]

<World Literature>

12. Answer the following about processing text, for 10 points each.

[10] These operators define patterns of characters, which are then algorithmically matched within input strings. They are often defined using the asterisk, indicating a “wildcard,” and brackets, which specify a set of valid characters.

ANSWER: **regular expressions** [or **regexes**]

[10] In one natural language processing model of words, vectors are formed from words stored in an unordered fashion in this type of data structure. In general, this kind of data structure allows for elements to be repeated, unlike a normal set.

ANSWER: **bag** [or **multiset**; accept **bag-of-words** model]

[10] Generating a corpus from images to perform text analysis may involve this natural language processing task, which is the conversion of characters in an image to text.

ANSWER: **optical character recognition** [or **OCR**; prompt on partial answers]

<Other Science>

13. The foundational statement of this discipline is “Locard’s exchange principle,” which holds that “every contact leaves a trace.” For 10 points each:

[10] Name this discipline that, according to a scathing 2009 report published by the National Academy of Sciences, routinely uses many practices with no scientific basis, including blood spatter analysis and ballistics.

ANSWER: **forensic** science [or **forensics**]

[10] A 2015 *Washington Post* article exposed the FBI’s nearly three-decade long history of faking exact match results for this forensic technique. When used accurately by toxicologists, this technique can detect drug use after nearly a month.

ANSWER: **hair** analysis

[10] In federal court, forensic evidence is admitted under this “standard,” which is named for a 1993 Supreme Court case and has generally replaced the *Frye* standard. Under this standard, the judge is the “gatekeeper” in charge of evaluating the scientific soundness of expert testimony or techniques.

ANSWER: **Daubert** [DOW-burt or doh-BARE or dow-BARE] standard

<Other Academic >

14. Clara Schumann composed these types of works for Beethoven’s third and fourth piano concerti. For 10 points each:

[10] Name this break in a piece in which a soloist plays or improvises a virtuosic passage.

ANSWER: **cadenza**

[10] In addition to his own difficult works, violinist Émile Sauret is now best-known for writing a cadenza to this composer’s *Violin Concerto No. 1*. This composer liked to use unorthodox bowing techniques like the ricochet, which features prominently in the finale of that concerto.

ANSWER: Niccolò **Paganini**

[10] This polystylist composer of six concerti grossi also wrote three cadenzas for Beethoven’s *Violin Concerto*, the first of which quoted the first violin concerti of Bartók and Shostakovich.

ANSWER: Alfred **Schnittke** [SHNIT-kuh]

<Music>

15. Statutes enacted in Toledo barred these people from holding office under the doctrine of *limpieza de sangre*. For 10 points each:

[10] Name these people. In 15th century Spain, Tomas de Torquemada hunted for *marranos*, those among these people who retained their old faith in secret.

ANSWER: Spanish crypto-**Jews** [or **conversos**; or **Judaizers**]

[10] Conversos in Toledo were scapegoated for this 1520 rebellion, in which Castilian cities rebelled against the regent Adrian of Utrecht before being crushed at the Battle of Villalar [vee-yah-lar].

ANSWER: Revolt of the **Comuneros**

[10] Many Portuguese Jews reached the Ottoman Empire thanks to the network of this wealthy Sephardic woman, who convinced Suleiman the Magnificent to offer protection to Jews in Ancona. Her nephew received the title Duke of Naxos from Selim II, whom he persuaded to take Cyprus from Venice.

ANSWER: Gracia **Mendes Nasi** [accept either underlined portion]

<European History>

16. The Smithsonian houses a component of this installation featuring a nude man with an erect penis with a tray of bananas at his feet. For 10 points each:

[10] Name this 1972 installation in which students from the Feminist Art Program at CalArts refitted an abandoned Victorian mansion with a bathroom overflowing with used tampons, a kitchen in which eggs transform into breasts, and a linen closet whose drawers bisect the body of a female mannequin.

ANSWER: Womanhouse

[10] *Womanhouse* was jointly organized by Miriam Schapiro and this artist, who arranged place settings for 39 famous women from history in her installation *The Dinner Party*.

ANSWER: Judy Chicago

[10] *Womanhouse* featured a mannequin representing one of these people trailing a long, dirty outfit down a staircase. A cloud inscribed with three "draft pistons" or "nets" lies next to an insectile depiction of one of these people in the upper panel of a 1923 artwork, whose lower panel includes a "chocolate grinder."

ANSWER: a bride [the works are *Bridal Staircase* and *The Bride Stripped Bare by Her Bachelors, Even*]

<Other Fine Arts>

17. According to an amazing pun, a half-iz ["half"-eez] is a person who has memorized fifteen of these things. For 10 points each:

[10] Give the name of these thirty divisions of the Qur'an, which are fairly equal in length and are useful for dividing up reading during the days of Ramadan.

ANSWER: juz' [accept ajza'] (note to moderator: the apostrophes represent glottal stops [that noise your throat makes at the very start of pronouncing the word "it" or "uh oh"])

[10] The Qur'an is more typically divided up into these 114 chapters.

ANSWER: suras [or suwar]

[10] Each juz' is further divided into two of these things, whose Arabic name means "group." Surah 33, which describes the Battle of the Trench, is known by this Arabic word, which is often translated as "The Clans" or "The Confederates."

ANSWER: al-ahzab [accept the singular hizb]

<Religion>

18. Heterojunctions between semiconductor materials are divided into three types depending on how these regions line up on either side. For 10 points each:

[10] Name these forbidden energy regions in semiconductors. Doping a semiconductor will introduce charge carriers with enough energy to get over this barrier and create current.

ANSWER: band gap

[10] At the bottom of the conduction band and the top of the valence band, the electron and hole energy levels are approximated using an "effective" value for this quantity, which incorporates the periodic potential of the crystal.

ANSWER: effective mass

[10] In this type of diode, often made with a heterojunction double barrier, the bands are arranged such that charge carriers can pass through the barriers with perfect transmission at certain bias voltages.

ANSWER: resonant tunneling diode [prompt on "tunneling diode" or "Esaki diode"]

<Physics>

19. The protagonist of this novel pees into a half-full coffee cup while en route to a hookup so that she won't have to use the bathroom at her partner's house. For 10 points each:

[10] Name this digressive, metafictional novel published in 1997 by Semiotext(e). After a scintillating dinner conversation with art critic Richard Hebdige that she describes as a "conceptual fuck," its protagonist writes him hundreds of pages worth of love letters.

ANSWER: *I Love Dick*

[10] Chris Kraus, the author of *I Love Dick*, wrote a literary biography of this punk author that somehow fails to mention that both she and this person had dated writer and critic Sylvere Lotringer. This author wrote the similarly metafictional novels *Don Quixote* and *Blood and Guts in High School*.

ANSWER: Kathy Acker [grudgingly accept Karen Alexander]

[10] Acker's and Kraus' novels were published before this author made her mark on the canon of memoiristic nonfiction by writing *The Year of Magical Thinking* and *Slouching Towards Bethlehem*.

ANSWER: Joan Didion

<American Literature>

20. The common term for this type of architecture comes from a tradition attested in Pliny the Elder, based on the assumption that only giants could have built the walls around Tiryns [TEER-inz]. For 10 points each:

[10] Give this term for the style of building used for the walls of Mycenae [my-SEE-nee], which consist of huge stones fit closely together without mortar.

ANSWER: Cyclopean walls [or Cyclopean masonry; or Cyclopic Walls]

[10] This German archaeologist excavated the shaft tombs at Mycenae, where he discovered a golden mask he dubbed the "Mask of Agamemnon." He also excavated the ruins of Troy.

ANSWER: Heinrich Schliemann

[10] The Cyclopean walls around this ancient Mycenaean fortress enclose an area ten times larger than Tiryns, even though it is not known to correspond to any city from the *Iliad*. Mycenaean Greeks dug sinkholes called *katavothroi* to drain Lake Copais, which surrounded it.

ANSWER: Gla

<European History>