

## ACF Regionals 2019

Packet by Northwestern A, Oregon, Maryland A, and Auburn A

### Tossups

1. A woman from this country moves to the Bay Area to live with her Uncle Pol after being disowned by her parents in a 2018 novel whose title references an earlier novel about an immigrant from this country. In a novel from this country, the discovery of a note alluding to Daniel's reading of the "writing on the wall" is followed by a student throwing a kerosene lamp bomb into a river. An author who left this country as a teenager fictionalized his upbringing in the novel *America Is in the Heart*. An author from this country bid "farewell to all I love" in a poem written just before his execution by firing squad, "Mi último adiós" ("mee OOL-tee-mo ahd-YOCE"). Ibarra resorts to violence to liberate this country while in disguise as Simoun in *El Filibusterismo* ("fee-lee-boo-stay-REEZ-mo"), the sequel to *Noli Me Tángere* ("no-lee may TAHN-gay-ray"), a novel from this country. For 10 points, name this home country of Carlos Bulosan and José Rizal ("ree-S AHL").

ANSWER: **Philippines** [or Republic of the **Philippines**; or Republika ng **Pilipinas**] (The novel in the first sentence is Elaine Castillo's *America Is Not the Heart*.)

<World Literature>

2. A spin one-half particle that has a particular discrete example of these features must have at least one double degenerate state according to the Kramers theorem. These features are disrupted by short-range interactions in the two-dimensional XY model leading to a nonsensically divergent correlation function in the proof of the Mermin–Wagner theorem. The exponential of the operator for a conserved quantity corresponds to the continuous type of these features that often form Lie ("lee") groups. Discrete examples of these features include space inversion, or parity. Rotations about a fixed point describe all of these features of a circle. For 10 points, name this feature of a physical system that remains unchanged by some transformation.

ANSWER: **symmetry** [or **symmetries**; or word forms; accept **symmetry** transformations; accept discrete **symmetries** or continuous **symmetries**]

<Physics>

3. Some inhabitants of this region who lived near its Queen's Gate were given names by military sergeant Alfred Holmes. This non-German region was where the first adult Neanderthal skull was found, and its Gorham's Cave complex was likely home to some of the last surviving Neanderthals. Many words from the endangered language Haketia have found their way into this region's unique, code switching-heavy dialect Llanito ("yah-NEE-toh"). The most populous city on the bay named for this territory is Algeciras ("al-juh-SEER-us"). Its most prominent feature is a part of the Betic Cordillera that was classically paired with Jebel Musa as one of the Pillars of Hercules. Article X of the Treaty of Utrecht transferred control of this territory, which is home to a European population of Barbary macaques. For 10 points, identify this British territory on the Iberian peninsula, known for its namesake "Rock."

ANSWER: **Gibraltar** (Holmes was an officer responsible for caring for Gibraltar's population of macaques.)

<Geography>

4. Northwestern professor Sarah Maza argued that the existence of a certain social class during this event was a myth. A phase of this event lends its name to the period of "convalescence" that follows a period of "fever" in events like this one according to a 1938 book by Crane Brinton. Lynn Hunt has written multiple books about this event, including a 1992 book that explores the "family romance" of it. Simon Schama argued that violence was fundamental to this event in his book *Citizens*. A conservative pamphlet written about this event called it "the most astonishing that has hitherto happened in the world" and predicted that its focus on abstract rights would doom it to failure. Edmund Burke wrote a set of "reflections" on, for 10 points, what event which overthrew Louis XVI?

ANSWER: **French Revolution** [accept *The Family Romance of the French Revolution*; accept *Inventing the French Revolution*; accept *Reflections on the Revolution in France*]  
<European History>

5. *Description acceptable.* UCLA houses a database of examples of this phenomenon named for a linguist who wrote an article titled for their “non-anomalous nature.” One work argues that the formation of “solutions” via this phenomenon is similar to dreaming in that it involves a process of “condensation.” Victoria Fromkin is best-known for studying this phenomenon, specific forms of which include “anticipation” and “blends.” Another form of this phenomenon often treated through practice with “minimal pairs” is classified as “residual” when it persists beyond childhood. The English translation of Freud’s *The Psychopathology of Everyday Life* introduced the term *parapraxis* to describe instances of this phenomenon caused by the unconscious. For 10 points, name this phenomenon, one example of which is uttering “she shanty” rather than “sea shanty.”

ANSWER: **speech errors** [accept **misspeaking**, **speech impediment**, **slip of the tongue**, **lapsus linguae**, **Freudian slip**, as well as more descriptive answers such as **saying the wrong word**; accept **parapraxis** until read; anti-prompt on specific speech impediments, such as **lisps**]  
<Social Science>

6. Augustin Daly’s play *Under the Gaslight* is best remembered for a scene in which a character is nearly killed by one of these vehicles. The first chapter of *Wise Blood* was expanded from a Flannery O’Connor story titled for one of these vehicles. In a play named after these vehicles, Risa, who has mutilated her own legs with a razor, works at a restaurant run by Memphis Lee, whose clientele includes characters like Hambone and Holloway. That play from August Wilson’s *Pittsburgh Cycle* is named for two of these vehicles. One of these vehicles titles a Patricia Highsmith novel about the architect Guy Haines and the playboy Charles Anthony Bruno. In *Atlas Shrugged*, Dagny Taggart works for a company that deals with these vehicles. For 10 points, name these vehicles, one of which is the subject of Chris Van Allsburg’s *The Polar Express*.

ANSWER: **trains** [accept equivalents, such as **locomotives**] (*Under the Gaslight* is the origin of the trope where a villain ties someone to the railroad tracks.)  
<American Literature>

7. In an essay that centers on a narrator’s descriptions of James Steerforth’s arm, Martha Nussbaum analyzed this concept in relation to the “moral point of view.” Irving Singer wrote a three-volume work titled for “the nature of” this concept. This concept is likened to a man who “becomes winged” and “looks upward like a bird” when experiencing the fourth form of divine madness described by Socrates in the *Phaedrus*. In a different work, one speaker describes being taught about how a person can ascend from a “vulgar” form of this concept to a “divine” one via its namesake “ladder” by Diotima. In that work, one speaker satirically claims that this concept is a result of Zeus’s decision to chop in half a former race of humans with two faces and eight limbs. Plato’s *Symposium* discusses, for 10 points, what concept divided by Greek philosophers into forms such as *philia*, *agape* (“ah-GAH-pay”), and *eros*?

ANSWER: **love** [accept the ladder of **love**, divine **love**, or vulgar **love**; accept **eros** until read]  
<Philosophy>

8. In an overture, after a brief orchestral introduction, this instrument plays a melody in 3/4 that opens with the notes [read slowly] C E G E over pizzicato offbeats. In the opening of a tone poem in 9/4 time, a solo for this instrument is accompanied by muted strings divided into 13 parts. This instrument plays the opening melody, based on a love duet between Teresa and Benvenuto Cellini (“chay-LEE-nee”), in Berlioz’s *Roman Carnival Overture*. Along with the violas, this instrument introduces the love theme in Tchaikovsky’s *Romeo and Juliet Fantasy Overture*. The flute plays a call-and-response with this instrument in the *Ranz des Vaches* (“rahntz day VAHSH”) section of the *William Tell* Overture. This instrument represents a mythical bird in Jean Sibelius’s (“zhahn sih-BAY-lee-us’s”) *The Swan of*

*Tuonela* (“TOO-oh-nay-lah”). For 10 points, name this woodwind instrument that plays the solo in the *Largo* movement of the Symphony “*From the New World*.”

ANSWER: **English horn** [or **cor anglais**; do not accept or prompt on “horn” or “French horn”]

<Music>

9. A variant of a Greek key motif named for its resemblance to a jelly roll is most common in proteins found in these structures. Tagged RNA affinity purification relies on the binding of stem-loops with a protein found in this structure in MS2. A fourth-generation test for a particular pathogen relies on detecting a 24-kilodalton protein found in one of these structures. George Smith invented a technique where peptide libraries are fused to a protein found in this structure in M13 as a way to evolve tight binders. The three proteins that compose this structure are symbolized VP1, VP2, and VP3 in a common gene therapy vector. A triangulation number, commonly one, three, or seven, characterizes the shape of these structures, which are often icosahedra composed of hexamers and pentamers. A lipid envelope surrounds this structure in HIV. For 10 points, name this structure that encases a virus’s genetic material.

ANSWER: viral **capsid** [or viral **coat** protein; prompt on **virus** or **bacteriophage** or **shell**; do not accept or prompt on viral “envelope”]

<Biology>

10. This leader granted a French company a 70-year tax waiver for developing the El Boleo mine. At a summit at which this leader resolved the Chamizal dispute with the US president, an assassination attempt on this man was foiled by the celebrated scout Frederick Burnham. This leader’s government provoked the Yaqui (“YAH-kee”) Indians to revolt to justify seizing their land. This leader announced his retirement in an interview with the *Pearson Magazine* reporter James Creelman. José Limantour led this leader’s group of advisors, known as his *científicos* (“s’yen-TEE-fee-kohss”). A revolt against this man’s presidency was called for in the Plan of San Luis Potosi, which was authored by Francisco Madero. For 10 points, name this longtime President of Mexico who served from 1876 until his ouster in the Mexican Revolution.

ANSWER: Porfirio **Díaz** [or José de la Cruz Porfirio **Díaz** Mori]

<World History>

11. One can construct a “resolution” of this object based on a given self-adjoint operator where this object is equal to an integral over the operator’s spectrum. The operation of this object and its conjugacy classes on irreducible representations are listed in the first column of a character table. A group’s component group is its quotient group over its connected subgroup that contains this object. Rngs (“rungs”) are named for the fact that they lack these things, making them the non-unital version of rings. An unknot is one of them under knot addition. A monoid is a semigroup that contains one of these elements. The composition of a function with its inverse yields this element. For 10 points, name this element that leaves other elements unchanged under the group operation, which is zero for addition.

ANSWER: **identity** element [or **identity** function; accept multiplicative **identity** or additive **identity**]

<Other Science (Math)>

12. In a poem, this character sleeps with the Carle of Carlisle’s wife and then his daughter out of politeness. In a novel, this character has a vision in which he’s accosted by hags who shame him for his failure to kill Querig. This character appears as an elderly man who is killed by Wistan in Kazuo Ishiguro’s *The Buried Giant*. A poem that contains a tangent about the symbolism of the pentangle on this character’s shield describes how this man refuses a gold ring from a woman, but eventually agrees to take her silk girdle. In a poem that makes use of the “bob and wheel” form, this character has his purity tested by Lady Bertilak after he beheads a character who promptly picks up his head and promises to return in a year and a day. For 10 points, name this Arthurian character who encounters the Green Knight in a Middle English poem.

ANSWER: Sir **Gawain**

<British Literature>

13. The visibility of the insides of two black hats in a painting by this artist reveals the presence of a second mirror behind two men, who themselves must be situated behind the viewer. In that painting, this artist depicted a man with his hands in his pockets standing in front of a velvet banquette (“bang-KET”) and a large mirror in the title establishment. This painter depicted his brother standing in front of an orange-cushioned armchair with his back to the viewer and looking out over a balcony in another painting. A bottle of wine sits to the right of the three shirtless title figures who work on their knees to strip a floor in a work by this artist. The foreground of this man’s best-known painting shows a couple sharing an umbrella while walking over wet cobblestones. For 10 points, name this French painter of *The Floor Scrapers* and *Paris Street, Rainy Day*.

ANSWER: Gustave Caillebotte (“kye-BUT”) (The two unnamed paintings are *In a Café* and *Young Man at His Window*.)

<Painting>

14. A murdered member of this organization named Herbert Norkus was nicknamed “Quex” and was the subject of a popular novel and film depicting him as a martyr. A wing of this group called the BDM established the Faith and Beauty Society. The Edelweiss Pirates opposed this organization, with one of their slogans being “eternal war on” this organization. Hans Scholl, a founder of the White Rose movement, joined this organization but disagreed with its principles. Baldur von Schirach and Artur Axmann were the only two people to hold the highest possible rank in this organization. Hitler’s last trip out of his bunker was to award Iron Crosses to members of this organization who were defending Berlin. For 10 points, name this Nazi organization comprised of young men between the age of 14 to 18.

ANSWER: Hitler Youth [or Hitlerjugend; prompt on Nazi Party or National Socialist German Workers’ Party or NSDAP]

<European History>

15. Each New Year’s, this company posts a drawing by Jason Polan that cryptically hints at their upcoming products. This company’s YouTube channel includes “Three Reasons” videos, each of which offers three reasons for buying one of their products. This company also posts short videos called “Closet Picks” in which famous people enter their namesake closet and can take some of their products for free. In 2007, this company created the Eclipse brand, whose logo is a curvy stylized “e,” just as this company’s logo is a stylized “c.” With its eighth release, this company pioneered the use of letterboxing. In 2018, Warner Brothers shut down the short-lived streaming service on which this company teamed up with TCM, called FilmStruck. For 10 points, name this company that releases arthouse films as part of their namesake “collection.”

ANSWER: The Criterion Collection, Inc.

<Other Arts>

16. The ability of an acid or base to act as a general type of these substances is determined by the libido rule. Methylaluminoxane is used to activate one type of these substances by forming an ion pair. Plotting activity versus binding strength allows selection of an optimum one of these via the Sabatier principle. They can undergo leaching if they are improperly bonded to their supports. Cinchona (“sin-KOH-nuh”) alkaloids and quaternary ammonium salts operate as these substances by moving ions between phases. Quinoline and lead acetate are used to poison one of these substances named for Lindlar that is used to create alkenes (“AL-keens”) from alkynes (“AL-kines”). Depending on whether they exist in the same phase as the reactants, they are classified as homogeneous or heterogeneous. For 10 points, name these substances that decrease the activation energy of a reaction.

ANSWER: catalysts [accept Lindlar catalysts; anti-prompt on enzymes by asking “can you be less specific?”]

<Chemistry>

17. A series of prayers performed the Saturday before this holiday includes the recital of pizmonim (“pee-z-mo-NEEM”) as well as verses beginning with the phrase “Shema koleinu” (“sh’MAH ko-LAY-noo”) or “Hear our voice.” Those prayers spoken prior to this holiday end with the Ashamnu (“ah-SHAM-noo”) confession and are collectively called the Selichot (“slee-KHOTE”). A verse from Micah is often read while casting pieces of bread into water in the *tashlikh* (“TAHSH-leekh”) ceremony, which is usually performed on this holiday. A number of sects believe that this holiday’s current name is due to corruption from the Babylonian captivity and instead refer to it as Yom Teruah (“yohm troo-AH”). Participants in this holiday eat apples and honey to celebrate the beginning of Tishrei (“teesh-RAY”). For 10 points, name this first of the High Holy Days, which marks the Jewish New Year.  
ANSWER: **Rosh Hashanah** [accept **Yom Teruah** until read; prompt on High Holy Days]

<Religion>

18. John Church loaned participants in one of these events specially-rigged objects that were made by Wogdon and Barton; one of those participants may have attempted to “delope” during that event of this type. The title of a book by Joanne B. Freeman about “national politics in the new republic” alludes to these events. California Senator David Broderick turned into a hero after he died following one of these events near San Francisco’s Lake Merced (“mur-SED”). A common rendezvous (“RON-day-vo”) point for these events was Bloody Island in the Mississippi River between Missouri and Illinois. One of these events occurred after the *Albany Register* published Charles Cooper’s letters. A participant in one of these events in Weehawken, New Jersey, later died at the house of William Bayard. For 10 points, name these events, one of which resulted in Aaron Burr killing Alexander Hamilton.

ANSWER: **duels** [prompt on affairs of honor]

<American History>

19. This writer used the term “mattress-grave” for the bed that he was confined to for the last eight years of his life due to a mysterious paralytic illness. This author, who coined the word “Lisztomania,” wrote about a man “seized with a savage woe” who’d “rather look up at the mountain than down at the rocks below” in a poem that was set to music by Liszt. An otherwise minor play by this author is the source of the quote “Where they burn books, in the end they will also burn human beings.” This author described his journey from Paris to Hamburg in a long poem subtitled “A Winter’s Tale,” and also alluded to Shakespeare in the subtitle of a satire about an escaped dancing bear. In a short lyric poem, this author of *Atta Troll* described a golden-haired maiden on the Rhine who lures sailors to their deaths. For 10 points, name this German expatriate poet of “Die Lorelei” (“dee LOH-ruh-lie”).

ANSWER: Heinrich **Heine** (“HY-nuh”) [or Christian Johann Heinrich **Heine**]

<European Literature>

20. In one story, a king in the body of an ugly dwarf named Bāhuka teaches the art of horse jockeying to a master of this activity to regain his old body. One instance of this activity was arranged by a king who swore vengeance after his beloved sister was married off to a blind man. During one instance of this activity, a woman vows to keep her hair untied until it is washed with the blood of a man who asked her to sit on his thigh. That woman had earlier been dragged by her hair into the room in which this activity was taking place, where a man’s efforts to disrobe her fail after her dress magically extends. Two consecutive instances of this activity are lost by Yudhishtira, who wagers his kingdom, four brothers, and wife. For 10 points, the Pāndavas are forced into exile after losing their kingdom in what gambling game to the Kauravas, as told in the *Mahabhārata*?

ANSWER: games of **dice** [or **pachīsi**; or **parcheesi**; or **ludo**; or **chaupar**; or **chopat**; or **pagade**; prompt on gambling]

<Mythology>

21. The phrase “Boys, be ambitious” was popularized on this island by William S. Clark, an American professor who established an agricultural college here. The last public performance of soprano Maria Callas (“CAL-uss”) was held in 1974 in this island’s largest city. A breakaway republic on this island was established by French army officer

Jules Barnet. Shakushain's revolt was led on this island in the late 1660s against its governing Matsumae clan. The Republic of Ezo on this island, the first democracy in its country, was established in the aftermath of the Boshin War by Tokugawa officials fleeing from the Meiji Restoration. This island's native people practice bear sacrifice in the Iyomante ritual. The Ainu people are native to, for 10 points, what northernmost Japanese island?

ANSWER: **Hokkaido**

<World History>

## Bonuses

1. According to legend, Alexander Glazunov managed to reconstruct this opera's overture and Act III strictly from memory after its composer's death, and Nikolai Rimsky-Korsakov did the rest. For 10 points each:

[10] Name this unfinished opera. In its section the "Polovetsian Dances," slaves perform a series of exotic dances for the title character.

ANSWER: Prince Igor

[10] *Prince Igor* was left unfinished by this member of the Five who also composed *In the Steppes of Central Asia*.

ANSWER: Alexander Borodin [or Alexander Porfiryevich Borodin]

[10] Borodin adapted an abandoned chorus from *Prince Igor* into the opening of this piece. In that opening, each measure alternates between a held B-natural in the strings and horns, followed by a series of unison eighth notes in the strings.

ANSWER: Symphony No. 2 in B minor [prompt on Borodin 2]

<Music>

2. Answer the following about WWE events in Saudi Arabia, for 10 points each.

[10] WWE's first Saudi Arabia event, on April 27th, 2018, was titled for the "Greatest" version of this type of match. This match format generally features a roster of 30 wrestlers entering the ring at timed intervals; wrestlers are eliminated by having both feet touch the floor after going over the top rope.

ANSWER: Royal Rumble [or Greatest Royal Rumble; prompt on battle royale]

[10] WWE was heavily pressured to cancel its second Saudi pay-per-view, *Crown Jewel*, after the murder of this journalist by agents of the Saudi government.

ANSWER: Jamal Khashoggi ("ka-SHOOK-chee") [or Jamal Ahmad Khashoggi]

[10] At *Crown Jewel*, this wrestler nicknamed "The Beast Incarnate" defeated Braun Strowman to win his second WWE Universal Championship. During his six-year MMA career, he won two heavyweight titles before losing to Cain Velasquez at UFC 121.

ANSWER: Brock Lesnar [or Brock Edward Lesnar]

<Trash>

3. This event was prophesied ("PROFF-uh-sighed") by the sour face of the wedding deity Hymen, and Ovid's account attributes this event's cause to a night of dancing with the naiads. For 10 points each:

[10] Name this tragic event. In one of the final sections of Virgil's *Georgics*, this event takes place as a result of Aristaeus, the keeper of the bees, giving chase to a certain woman.

ANSWER: the death of Eurydice

[10] Eurydice's death by snakebite forces this man, her husband, to rescue her from the underworld. He convinces Pluto with his musical skill, but Eurydice vanishes when he looks back after returning to the world of the living.

ANSWER: Orpheus

[10] Ovid's account of the Orpheus myth includes him wandering around and singing about this group of women from Cyprus. They become the world's first prostitutes as punishment for refusal to worship Venus.

ANSWER: Prooetides

<Mythology>

4. A late 19th-century genre named for its opposition to this ideology is exemplified by Nikolai Leskov's *No Way Out*. For 10 points each:

[10] Name this ideology held by a character who visits the estate of his college friend Arkady Kirsanov. That character with this ideology duels Pavel, who has a disdain for this ideology.

ANSWER: nihilism [or nihilist]

[10] The aforementioned nihilist, Bazarov, is one of the main characters of this novel by Ivan Turgenev (“tur-GAIN-yeff”).

ANSWER: **Fathers and Sons** [or **Ottsy i deti**]

[10] At the end of *Fathers and Sons*, Bazarov dies of blood poisoning after cutting himself while distractedly performing this type of procedure.

ANSWER: **autopsy**

<European Literature>

5. Answer some questions about a building-shaped 20-carbon molecule, pagodane (“puh-GO-dane”), for 10 points each.

[10] All of the faces of pagodane have the same shape as this cycloalkane. This cycloalkane has envelope and twist conformers.

ANSWER: **cyclopentane**

[10] A di-cation derivative of pagodane was the first molecule to demonstrate the sigma-bis-homo version of this phenomenon. Benzene exhibits this phenomenon, which occurs in planar molecules that have  $4n$ -plus-2 pi electrons.

ANSWER: **aromaticity** [or **aromatic**]

[10] Pagodane can be isomerized to dodecahedrane, which like buckminsterfullerene belongs to this point group of order 120.

ANSWER: **Ih** (“I-H”) [or **I-sub-H**]

<Chemistry>

6. This event is known by Koreans as Sa-I-Gu, or 4-2-9, referencing the date it started. For 10 points each:

[10] Name this event in which Koreans defended their stores with firearms against mobs of looters, who had earlier beaten truck driver Reginald Denny senseless.

ANSWER: **Rodney King riots** [accept, but DO NOT REVEAL, 1992 **Los Angeles riots** or 1992 **L.A. riots**]

[10] Daryl Gates retired as the chief of this city’s police department following the Rodney King riots, which occurred in this city.

ANSWER: **Los Angeles** [or **L.A.**]

[10] This mayor of Los Angeles at the time called for peace despite expressing his anger at the acquittal of Rodney King’s attackers.

ANSWER: Tom **Bradley**

<American History>

7. A work by this philosopher asks the reader to imagine a group of fellow bus passengers eating a picnic lunch consisting of “live insects, fish heads, and pickled sex organs of lamb, veal, and pork,” an unpleasant but “harmless” experience. For 10 points each:

[10] Name this American philosopher who developed the aforementioned “Ride on the Bus” thought experiment in his book *The Moral Limits of the Criminal Law*.

ANSWER: Joel **Feinberg**

[10] *The Moral Limits of the Criminal Law* critiques this philosopher’s claim that the state should only criminalize conduct harmful to others, a “harm principle” he outlined in his work *On Liberty*.

ANSWER: John Stuart **Mill**

[10] Feinberg argues for the relationship between “offensiveness” and this other concept. An 1890 article by Samuel Warren and Louis Brandeis claimed that the “right to” this concept equaled the “right to be let alone.”

ANSWER: **privacy** [or “The Right to **Privacy**”]

<Philosophy>



8. A book by this author includes the autobiographical essay “Tristes Tropiques,” which discusses the experience of “twinning” with a loved one referred to only as SL. For 10 points each:

[10] Name this *New Yorker* theater critic who included people like Malcolm X’s mother in the title category of his book *White Girls*. He won the 2017 Pulitzer Prize for Criticism.

ANSWER: Hilton Als

[10] *White Girls* also includes a portrait of André Leon Talley, the former editor-at-large of this fashion magazine currently helmed by Anna Wintour (“winter”).

ANSWER: Vogue

[10] An essay from *White Girls* about Eminem shares its title with this novel in which Jack Gladney is spooked by the Airborne Toxic Event.

ANSWER: White Noise

<Other Literature>

9. This animal is an important indicator for the study of ocean acidification, and their species *Strongylocentrotus purpuratus* is used as a model organism to study development. For 10 points each:

[10] Identify these creatures from the order Echinoidea, a spiky, slow-moving organism that is common prey for sea otters. These organisms move through four-arm and eight-arm larva stages during development.

ANSWER: sea urchins

[10] Tim Hunt used sea urchins to study the cell cycle, leading to the discovery of these cell cycle regulatory proteins. They bind to and activate their namesake “dependent kinases” to advance from one stage to another.

ANSWER: cyclins

[10] Gastrulation in sea urchins begins with ingression of primary mesenchymal (“meh-ZANK-uh-mull”) cells, followed by the formation of this primitive gut tube. The blastopore is the opening of this tube.

ANSWER: archenteron

<Biology>

10. The Plastic People of the Universe was a protest band formed in this country. For 10 points each:

[10] Name this country whose government’s human rights abuses were criticized in Charter 77. Earlier, a manifesto called *The Two Thousand Words* called for more openness in its government.

ANSWER: Czechoslovakia [do not accept or prompt on “Czech Republic” or “Slovakia”]

[10] *The Two Thousand Words* were published in this 1968 period of liberalization in Czechoslovakia. It was ended when Soviet troops invaded in August 1968.

ANSWER: Prague Spring

[10] Jan Palach (“yahn PAH-lahkh”) performed this action in January 1969 to protest the Soviet invasion of Czechoslovakia. Malcolm Browne took a photograph of another person who performed this action.

ANSWER: self-immolation [accept burning oneself alive or setting oneself on fire or other clear equivalents]

<European History>

11. This quantity can be calculated by taking the trace of the density operator times an observable. For 10 points each:

[10] Name this quantity that takes into account quantum uncertainty by including all possible measurement results weighted by probability.

ANSWER: expectation value [or expectation or EV; prompt on answers indicating the average value of an observable]

[10] This object is sometimes said to collapse to one part of a superposition upon measurement. This mathematical object specifies the state of a quantum system with respect to the position eigenbasis, and its square norm is probability density.

ANSWER: wave function [or position-space wave function]

[10] Hugh Everett proposed an observer-independent explanation for wavefunction collapse based on this phenomenon, in which a quantum system becomes entangled with many degrees of freedom in its environment. This phenomenon results in non-unitary evolution and causes errors in quantum computing.

ANSWER: **decoherence** [or **decoherent**]

<Physics>

12. The first of these buildings was located in Ashgabat before it was secularized by the Soviets and destroyed in an earthquake. For 10 points each:

[10] Name these religious buildings that often feature large central domes and admit members of all faiths. One of these buildings in Delhi is named after its resemblance to a lotus flower.

ANSWER: **Baha'i temples** [or Baha'i **Houses of Worship**; prompt on **temples**]

[10] The construction of future Baha'i temples is overseen by the Universal House of Justice, a central governing body that is located on the slopes of Mount Carmel ("kar-MELL") in this country, the only Jewish-majority nation in the world.

ANSWER: **Israel** [or State of **Israel**; or Medinat **Yisrael**]

[10] North America's two Baha'i temples are located in the US and this other country, where it has become a significant minority religion among the native Ngäbe ("in-GAW-bay") people.

ANSWER: **Panama** [or Republic of **Panama**; or República de **Panamá**]

<Religion>

13. Answer the following about Aldous Huxley's relationship with drugs, for 10 points each.

[10] In *Brave New World*, this population-placating drug is described as having "all the advantages of Christianity and alcohol and none of their defects."

ANSWER: **soma**

[10] Huxley's description of a mescaline trip makes up the bulk of his book *The Doors of Perception*, which takes its title from this author's *The Marriage of Heaven and Hell*.

ANSWER: William **Blake**

[10] Huxley wrote about drugs as an avenue of escape in the epilogue to this non-fiction novel about Urbain Grandier, who was accused of being responsible for the demonic possession of a group of Ursuline nuns.

ANSWER: *The **Devils of Loudun***

<British Literature>

14. The oldest known name for this country is Wo, which translates to "dwarf." For 10 points each:

[10] Name this country whose prehistoric periods include the Jomon and Yayoi periods.

ANSWER: **Japan** [or **Nihon** or **Nippon**]

[10] Japan is first mentioned in historical documents from this dynasty, which was interrupted by the rule of Wang Mang's ("wong mong's") Xin ("shin") Dynasty. China's majority ethnic group is named after this dynasty.

ANSWER: **Han** Dynasty

[10] This period of Japanese history following the Yayoi period is named after giant keyhole-shaped burial mounds.

ANSWER: **Kofun** period

<World History>

15. Luciano Berio ("loo-CHAH-no BARY-oh") composed a new ending for this opera in 2002, attempting to correct the dramaturgical flaws of the standard ending written by Franco Alfano. For 10 points each:

[10] Name this opera in which Calaf successfully wins the hand of the title Chinese princess, the final opera of Giacomo Puccini.

ANSWER: **Turandot** ("TURR-an-dot")

[10] In this aria from Act 2, Turandot bemoans the death of Princess Lo-u-Ling and introduces Calaf to the challenge of the three riddles. The title of this aria translates as “In this palace.”

ANSWER: “In questa reggia” (“een KWESS-tah REJ-ah”)

[10] This is the answer to Turandot’s final riddle, which asks “What is ice which gives you fire and which your fire freezes still more?” Upon correctly giving this answer, Calaf challenges Turandot to discover his name before sunrise.

ANSWER: Turandot [accept any answer indicating that it’s Princess Turandot herself]

<Other Arts>

16. In 2016, this artist included three depictions of Winged Victory in various states of decay in an enormous mural that he created by removing grime from a wall running along the Tiber. For 10 points each:

[10] Name this South African artist, best known for producing animated films such as *Felix in Exile* by repeatedly photographing a process of erasing and redrawing images with charcoal.

ANSWER: William Kentridge

[10] Kentridge’s early charcoal work *Embarkation*, which shows a group of figures following a hyena onto a platform while reading, was loosely inspired by a 1717 fête galante (“FET gah-LONT”) painting by this French rococo artist.

ANSWER: Jean-Antoine Watteau (“vah-TOH”)

[10] Kentridge was inspired by viewing Renaissance *tondo* paintings to produce a number of works in this shape, including 2000’s *Atlas Procession*. Parmigianino’s (“par-mee-jah-NEE-no’s”) *Self-Portrait in a Convex Mirror* is in this shape.

ANSWER: circle [or circular; or round]

<Painting>

17. Answer the following about technology used in aerodynamics, for 10 points each.

[10] In these facilities, aerodynamicists use fan systems to blow air at high speeds past an object suspended or mounted on a “sting” to study its response. Vertical versions of these systems are often used for skydiving practice.

ANSWER: wind tunnels [prompt on partial answer]

[10] In addition to physical modeling, aerodynamicists use software like OpenFOAM to computationally model fluid flow. The results of flow field calculations can be visualized in one of these diagrams in which lines connect points where the flow velocity is equal, and color often corresponds to flow velocity.

ANSWER: contour diagram [or contour plot or contour map]

[10] Aerodynamicists use computational fluid dynamics to study flow past complicated structures. Before solving the Navier–Stokes (“nahv-YAY Stokes”) equations, the program has to discretize space, generating one of these structures. These structures can be generated through Delaunay (“duh-loh-NAY”) triangulation.

ANSWER: mesh [accept mesh generation or grid generation]

<Other Science (Engineering)>

18. Rule 704b of the Federal Rules of Evidence places limitations on the ability of people in this role to offer conclusions on the so-called “ultimate issue.” 10 points each:

[10] Name this role in common law justice systems frequently filled by forensic scientists and forensic psychologists who deliver a namesake “opinion” about a case’s evidence.

ANSWER: expert witnesses [accept expert opinion; prompt on witness]

[10] This standard, which replaced the Frye “general acceptance” test in federal law following a 1993 Supreme Court case involving Merrell Dow Pharmaceuticals, instructs judges to assess the relevance and reliability of expert witness testimony.

ANSWER: the Daubert (“DOW-bert”) standard [accept the Daubert Test]

[10] In defining the distinction between science and pseudoscience in his majority opinion in *Daubert*, Harry Blackmun quoted the claim that science should be defined by falsifiability put forth by this author of *The Logic of Scientific Discovery*.

ANSWER: Karl **Popper** [or Karl Raimund **Popper**]

<Social Science>

19. This novel ends with Jack bursting into a party after discovering the truth about his the identity of his wife, who then falls to her death out of a window. For 10 points each:

[10] Name this novel in which Irene recalls an encounter at a Drayton Hotel restaurant with Clare, a woman who is raised by her white aunts.

ANSWER: ***Passing*** (by Nella Larsen)

[10] The title character of this author's *Autobiography of an Ex-Colored Man* decides to pass as white after witnessing a lynching.

ANSWER: James Weldon **Johnson**

[10] Roxy, who is 1/32 black, is switched at birth with a white boy named Tom and is raised as white in *Pudd'nhead Wilson*, a novel by this creator of Huckleberry Finn.

ANSWER: Mark **Twain** [or Samuel Langhorne **Clemens**]

<American Literature>

20. The first usage of this word comes from a Count of Anjou named Geoffrey, and it is probably derived from a word for a broom. For 10 points each:

[10] Name this royal house of England that included the Angevins. Henry II was the first of this house to rule England.

ANSWER: House of **Plantagenet**

[10] The other two cadet branches of the House of Plantagenet were the Houses of Lancaster and York, who fought for control in this 15th-century war that ended with the Battle of Bosworth Field.

ANSWER: Wars of the **Roses**

[10] Following the Tudor victory at Bosworth, a Yorkist uprising broke out two years later when this man attempted to place Lambert Simnel on the throne. He was killed at the Battle of Stoke.

ANSWER: John **de la Pole**, 1st Earl of Lincoln

<British History>

21. A large number of icebergs split from one of these objects in Heinrich events. For 10 points each:

[10] Name these large bodies of ice that form at high elevations and extreme latitudes.

ANSWER: **glaciers**

[10] These samples can be taken from glaciers and ice sheets using a large auger. One use for these samples is to track atmospheric concentrations of gases such as carbon dioxide over time.

ANSWER: **ice cores**

[10] More advanced ice coring drills use a cable-suspended device referred to by this term. This term also refers to an instrument carried by a weather balloon.

ANSWER: **sonde** ("sond") [accept radios**sonde**]

<Other Science (Earth Science)>