



**ACADEMIC
COMPETITION
FEDERATION**

2023 ACF NATIONALS

Finals 1

Packet By

The Editors (11)

Editors

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TOSSUPS

1. This is the first title concept of an essay that analyzes Meridel Le Sueur's novel *The Girl* as a study of "double-life" and uses Kathleen Gough's list of eight characteristics of male power as a framework. A term for the imposition of this concept was popularized by Michael Warner, the author of *The Trouble with Normal*. An essay titled for this type of "mind" ends by arguing that the word "woman" only has meaning within this type of system of thought; that essay is by a thinker who theorized a social contract based on this concept, Monique Wittig ("VIT-ig"). This phenomenon is analyzed as a political institution in an Adrienne Rich essay that calls it "compulsory." People who exclusively or predominantly display this phenomenon are between zero and two on the Kinsey scale. For 10 points, queer theorists often criticize a type of "normativity" named after what sexual orientation?

ANSWER: **heterosexuality** [or **straightness**; accept **het** or **compHet**; accept compulsory **heterosexuality** or "Compulsory **Heterosexuality** and Lesbian Existence"; accept **heterosexual** contract; accept "The **Straight** Mind"; accept *The Invention of **Heterosexuality***; reject "heteronormativity"]

<Social Science>

2. A riot in this city led to an arsenal exploding in the "Great Blow" during the English Civil War. Some of this city's mayors lived in Strangers' Hall, whose name honors the Huguenot "Strangers" that Queen Elizabeth settled in this city to produce textiles. Extensive 15th-century correspondence survives from a gentry family living 20 miles north of this cathedral city, the Pastons. Rebels camped at Mousehold Heath to besiege this city while protesting land enclosure in Kett's Rebellion. Thomas of Monmouth accused this city's Jews of killing a tanner's apprentice in the first known instance of blood libel. A writer from this city said that "all that is made" by God is represented by "a little thing, the size of a hazelnut." A mystic active in this city detailed 16 visions, or "shewings," in *Revelations of Divine Love*. For 10 points, the earliest extant English work by a woman was written by "Julian of" what city?

ANSWER: **Norwich** ("NOR-itch") [accept Julian of **Norwich** or Juliana of **Norwich**; accept William of **Norwich**]

<European History>

3. Zeba ("ZEE-buh") spin columns remove these compounds from mixtures. These compounds are added stepwise over a full day to conjugate thiolated DNA onto gold nanoparticles. Either polymers or these compounds are exhaustively titrated as the precipitants for protein crystal trays. A 70-percent ethanol solution washes these compounds off the pellet during the second spin of a DNA precipitation. The concentration of these compounds is slowly ramped up in the mobile phase to release proteins from resins in IEC. Kosmotropic examples of these compounds precipitate proteins in a technique colloquially named for them and the word "out." These compounds name a tertiary protein structure motif that bridges amino acids bearing positive and negative charges. For 10 points, name these compounds added to buffers to make them isotonic to the cytosol, examples of which include ammonium sulfate and sodium chloride.

ANSWER: **salts** [or **ionic** compounds; or **ions**; accept **cations** or **anions**; accept **salt** bridges; accept **salting** out; prompt on **solutes**] (IEC is ion exchange chromatography.)

<Chemistry>

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4. This novel's protagonist overhears her new husband say that having a blind uncle is better than having no uncle to justify why he married her. A character in this novel often tells her daughter about a 120-year-old midwife as part of the story of "How You Were Left to Your Fate." During a controversy over a film adaptation of this novel, Germaine Greer wrote that the title location "is a real place" so "there was no need for [the author] to invent it." A patriarch in this novel takes out a loan to buy a computer from the moneylender Mrs. Islam. In this novel, anti-immigrant pamphlets denouncing "multicultural murder" are distributed by the Lion Hearts, sparking a war of pamphlets that involves Karim. Hasina, who writes letters to her sister in London in this novel, ends up working as a maid in Dhaka. For 10 points, Chanu and Nazneen live in Tower Hamlets on the title street in what novel by Monica Ali?

ANSWER: ***Brick Lane***

<British Literature>

5. A dosage-sensitive reversal of this process occurs with duplication of Dax-1, which acts during this process as a dominant negative regulator of a class of nuclear receptors including SF-1. A key protein in this process relies on a feedforward loop with prostaglandin D2 and FGF9 to maintain its production and lends its name to the SOX genes. Mutations in 21-hydroxylase cause a disease whose classic form is characterized by either salt-wasting or an abnormal version of this embryonic process, congenital adrenal hyperplasia. The paramesonephric ducts develop and the mesonephric ducts regress in a version of this process that occurs in the absence of AMH. Two distinct disorders of this process are caused by deletions or translocations of SRY. For 10 points, Turner's syndrome is a disorder of what process, whose result is classically determined by the presence of XX or XY chromosomes?

ANSWER: **sexual differentiation** [accept **sexual development** or **sex determination**; accept disorders of **sex differentiation** or disorders of **sex development**; accept **development of gonads** or **gonadogenesis**; accept descriptions of the **development** of different **sexes**; accept more specific answers like **differentiating** into a **female**, **differentiating** into a **male**, **virilization**, **masculinization**, or **feminization**; prompt on **DSDs** by asking "What does that stand for?"; prompt on embryonic **development**]

<Biology>

6. An unhappy millionaire urinates on a painting by this artist in John Michael McDonagh's film *Calvary*. Fritz Grossman attributed a painting to this artist because it depicts Adam standing with his legs widely apart and shows figures like those in *Christ as the True Light*, one of his woodcut *Icons*. This artist, who names a stitch used in blackwork embroidery, painted a green tapestry decorated with griffins in a portrait that was purchased in 1661 as part of a large collection of his works by the Kunstmuseum Basel. Like Memling, Crivelli, and Lotto, this artist nicknames a style of Turkish carpet used in his portrait of Georg Giese ("ghee-suh"). This artist painted another of those carpets in a portrait of a king with a large codpiece clutching a glove for the Palace of Whitehall. For 10 points, what 16th-century artist painted royal portraits of Christina of Denmark, Anne of Cleves, and Henry VIII?

ANSWER: Hans **Holbein** the Younger [or Hans **Holbein** der Jüngere; accept **Holbein** carpets; accept **Holbein** stitch] (The painting in the first sentence is *The Ambassadors*.)

<Painting & Sculpture>

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7. During a festival held near this country's Church of Saint John the Baptist, priests bless bread carried on huge headpieces by girls during the Festival of the Trays. A pious medieval queen of this country who spent years reforming her ne'er-do-well husband instituted this country's Divine Holy Spirit Festival. In this country, an angel told a group to return to a spot on the thirteenth day of the next five months to receive a series of three "secrets" eventually disclosed in the memoirs of Sister Lucia. It's not Italy, but a June 13th holiday honors a saint from this country who is the patron of lost objects and who legendarily preached to fish. In 1917, three shepherd children witnessed a Marian Apparition near this country's town of Fátima ("FAH-tee-ma"). For 10 points, name this country whose most-revered saint, Anthony of Padua, names a donation campaign used to rebuild its capital after a 1755 earthquake.

ANSWER: **Portugal** [or **Portuguese** Republic or República **Portuguesa**] (The earthquake was the Great Lisbon earthquake.)

<Religion>

8. A story by this author ends with the image of a canvas that is blank besides the word "solitary" or "solidary." In a story by this author set in Taghaza, the protagonist kills a missionary to escape being tortured in the House of the Fetish. This author created a ship's cook who was saved from drowning by praying to a stone statue of Jesus, which an engineer visiting Brazil later moves to a hut instead of a church. In a story by this author, a gendarme gives the protagonist custody of a man tied with rope and tells him to deliver the man to the police. This author of "The Growing Stone" wrote about a schoolmaster who discovers the message "You handed over our brother. You will pay for this" written on a chalkboard after letting a criminal escape. This author's collection *Exile and the Kingdom* includes his story "The Guest." For 10 points, name this author who also wrote a novella that opens "Maman died today."

ANSWER: Albert **Camus** (The stories in the first two lines are "Jonas or the Artist at Work" and "The Renegade," respectively.)

<European Literature>

9. The portrayal of a ruler of this kingdom as an "archdemon" in A. T. Bryant's history of "Olden Times" was challenged by the interviews in the James Stuart Archive. Dan Wylie analyzed myths about this kingdom in *Savage Delight* and said that a battle it won was fabricated by E. A. Ritter. The "Cobbing controversy" disputed histories like G. M. Theal's about the "depopulation" caused by this kingdom, whose loss to "commandos" with ox-wagons inspired the ethnonationalist "Day of the Vow." Donald R. Morris's *The Washing of the Spears* credits a military revolution to this kingdom, whose founder alternatively names Heritage Day, or Braai Day, and was fictionalized by Thomas Mofolo. Colonial historians blamed this kingdom for a period called "the Crushing." For 10 points, what kingdom's first ruler developed *impi* regiments, *iklwa* assegais, and the "bull-horns" formation in the "Mfecane"?

ANSWER: **Zulu** Kingdom [or **Zulu** Empire; or Kwa**Zulu**; accept **Zululand**; accept **Zulu** Kings and their Armies; accept *Olden Times in Zululand and Natal*] (The likely ahistorical battle was the "Battle of Gqokli Hill." Theal was the "father of South African history." The "Day of the Vow" commemorates the Battle of Blood River. Thomas Mofolo wrote *Chaka*. Shaka is ascribed the innovations in the final sentence.)

<World History>

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10. Alyssa Katz's book *The Influence Machine* describes how this organization replaced its leader, Richard Leshner, because of his support for the Clinton administration's health care proposal. In 2009, many high-profile members left this organization because its vice president William Kovacs planned to sue the EPA to create the "Scopes monkey trial of the 21st century." In 1997, under Thomas Donohue, this organization began to amass political power using affiliates like its Institute for Legal Reform. Lewis Powell's 1971 memo "Attack on the American Free Enterprise System" was addressed to this organization, which has spent the most money on federal lobbying in the past 25 years. This national organization is mirrored by local ones that promote tourism through member dues from small businesses. For 10 points, name this lobbying group that is the world's largest business association.

ANSWER: United States **Chamber of Commerce** [or **USCC**]

<Current Events>

11. In one technique, traces of these phenomena recorded at regularly spaced offsets are collected into a common midpoint gather. Adam Dziewoński ("zhuh-VON-skee") and Don Anderson used observations of these phenomena and astronomical measurements to develop the PREM ("P-R-E-M"), which calculates density from the velocity of these phenomena using the Adams-Williamson equation. Primordial thermochemical piles are one of many proposed mechanisms for the strange behavior of these phenomena at antipodal ("an-TIH-puh-dal") regions near Africa and the Pacific ocean called LLSVPs. Images reconstructed using these phenomena confirmed the natural formation of post-perovskite. The velocities of these phenomena change abruptly at a depth of 660 kilometers, below which ringwoodite decomposes, as well as at the Moho discontinuity. For 10 points, name these phenomena whose propagation is used to study the Earth's interior.

ANSWER: **seismic waves** [or **body waves**; or **surface waves**; accept **P waves** or **primary waves**; accept **S waves** or **secondary waves**; prompt on **earthquakes** by asking "what phenomena are generated by earthquakes?"; prompt on **waves**] (The first sentence refers to reflection seismology. PREM stands for Preliminary Reference Earth Model. LLSVPs are large low-shear-velocity provinces.)

<Other Science>

12. *Two answers required.* In a eulogy for one of these two authors, the other recalls going with his friend Andy to attend his failed attempt to start a fellowship club. One of these two writers claimed that a character created by the other "accepted a theology that denies him life" and "battle[s] for his humanity." One of these authors recalls distrusting the other's association with French intellectuals like Sartre and de Beauvoir in a three-part essay from *Nobody Knows My Name* that eulogizes the other's death in Paris and praises his collection *Eight Men*. One of these two writers criticized the other in the essay "Many Thousands Gone" and linked him to a "timeless battle" with Harriet Beecher Stowe for his use of racial stereotypes in the essay "Everybody's Protest Novel." For 10 points, name these two authors, one of whom wrote a novel about Bigger Thomas that inspired the title of the other's collection *Notes of a Native Son*.

ANSWER: James **Baldwin** AND Richard **Wright** [accept James Arthur **Baldwin** in place of "James Baldwin"; accept Richard Nathaniel **Wright** in place of "Richard Wright"]

<American Literature>

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13. James DeLong arrested two Confederate rebels in this city, necessitating the only deployment of Union troops in a city outside the Americas during the Civil War. The refusal to read the line “seek your inspiration from the French, friends of freedom” in a speech given in this city precipitated the ouster of Eirik Labonne. Since the French refused to go to war over this city, foreign minister Théophile Delcassé (“tay-oh-feel del-cah-SAY”) was sacked. The Mendoub served as a symbolic governing official in this city during its three decades-long status as an international zone, a period interrupted by its World War II-era Spanish occupation. The Algeciras Conference mediated a crisis sparked by Kaiser Wilhelm II’s visit to this city, where he declared support for Sultan Abdelaziz against French rule. For 10 points, name this Moroccan port city on the Strait of Gibraltar.

ANSWER: **Tangier** [or **Tangiers** or **Tanja** or **Tanger**; accept **Tangier** Crisis; accept **Tangier** International Zone, Mintaqat **Tanja** ad-Dawliyya, Zone internationale de **Tanger**, or Zona Internacional de **Tánger**; accept **Tangier** Speech] (Labonne included that line in the Tangier Speech given by Mohammed V, who refused to read it. The penultimate sentence refers to the First Moroccan Crisis.)

<Other History>

14. A study of these people uses John Dewey’s idea of active aesthetic experience to analyze a Chinese woman’s fascination with shapeshifting. That “anthropological account” of these people is by Bonnie Nardi. These people inspired Yasmin Kafai’s SPIKEY-20 model based on a disease whose basic reproduction number was over 1 and which spread in their auction houses. Gibbs et al. examined “boundary work” relative to a group of these people called Serenity Now who crashed a stroke victim’s funeral. Ran Balicer compared the transmission of avian flu through air travel to these people setting up quarantines to deal with a CDC-studied pandemic called Corrupted Blood. The most likely of these people to develop gaming disorder are those who chose Draenai, a race introduced during the Burning Crusade. For 10 points, name these people who roleplay in guilds of the Horde and Alliance in a Blizzard MMO.

ANSWER: players of **World of Warcraft** [or descriptions of people who play **World of Warcraft**; accept **WoW** in place of “*World of Warcraft*” accept characters or avatars or guilds in place of “players”; prompt on gamers or players of MMORPGs by asking “of what game?”; prompt on Horde or Alliance until each is read; prompt on humans, dwarves, gnomes, night elves, orcs, trolls, undead, tauren, warriors, hunters, priests, paladins, shamans, warlocks, mags, rogues, or druids] (Bonnie Nardi wrote *My Life as a Night Elf Priest*.)

<Other Academic>

15. A life-sized statue of this person is the only surviving structure from the once-flourishing town of Quindaro. Kate Field organized the return of an engine room popularly named for this person to its original site since it had been abandoned after the Chicago World’s Fair. Lyceum Bureau founder James Redpath penned a rousing biography of this person, who helped develop the “Timbuctoo” colony near North Elba. To commemorate this person, the Niagara Movement held their first American meeting at Storer College. James Freeman Clarke urged an author known for inspiring Mother’s Day to compose new lyrics to a song titled for this person, who legendarily kissed a baby on the way to the gallows. Julia Ward Howe used the tune of a song about this person’s “body” for the “Battle Hymn of the Republic.” For 10 points, name this abolitionist who was executed after failing to incite a slave revolt at Harpers Ferry.

ANSWER: John **Brown** [accept “John **Brown**’s Body”; accept John **Brown**’s Fort] (James Redpath wrote *The Public Life of Captain John Brown*.)

<American History>

16. This book predicts that the world will end “to general applause from wits who believe it’s a joke,” like a clown who is applauded when he tries to warn the audience about a fire in a theater. The “Platitudinous Introduction” to a chapter of this book argues that neither “subject-matter” nor “formative activity” can be used alone as a principle of classification for classic works of art. This book notes that all of creation took place out of boredom to illustrate the idea that “boredom is a root of all evil” in a chapter that advocates constantly changing the “mode of cultivation.” Mozart’s *Don Giovanni* is analyzed in a chapter on “the immediate stages of the erotic” in this book, which also includes sections called “Diapsalmata” (“dee-ahp-sahl-MAH-tah”) and “Crop Rotation.” For 10 points, the distinction between the aesthetic and ethical lives is the subject of what 1843 book by Søren Kierkegaard (“KEER-kuh-gard”)?

ANSWER: ***Either/Or*** [or ***Either/Or: A Fragment of Life***; or ***Enten – Eller: Et Livs-Fragment***]
<Philosophy>

17. Jack Wisdom discovered sudden jumps in this quantity in test asteroids placed near the 3/1 commensurability of a restricted three-body problem. In hierarchical triple systems, mutual inclination and this quantity for the inner binary oscillate due to angular momentum exchange between the binaries. This quantity equals the square root of the expression: “one, plus 2 times energy times angular momentum squared, over reduced mass times k squared,” where k is the constant in the force law. This quantity is the magnitude of a vector that always points towards the periapsis. The denominator of the orbit equation contains the term: “this quantity times the cosine of true anomaly.” When this quantity is less than 1, energy is negative, so the orbit is bound. This quantity and the semi-major axis describe the size and shape of an orbit. For 10 points, name this quantity that is between zero and one for an elliptical orbit.

ANSWER: orbital **eccentricity** [accept **eccentricity** vector] (The second sentence refers to the Kozai–Lidov mechanism.)
<Physics>

18. It’s not a rabbit or goat, but an “angora” type of this animal titles a piano piece that Nicolas Horvath arranged from an incomplete Erik Satie piece for orchestra. A violin showpiece called *Cinema-Fantaisie* was arranged from a piece titled for this animal, which presents its theme in every major key and features a part for the güiro. A bar that Jean Cocteau named for this animal was the main meeting place of Les Six (“lay SEESE”). In a transcription of a movement depicting this animal, Maurice Ravel added a pianissimo dynamic to a melody played by a tuba over lumbering strings; that movement is sandwiched between one depicting the Tuileries and a “Ballet of Chicks in their Shells.” One of these animals titles a Brazilian-influenced ballet by Darius Milhaud (“dar-YOOSE mee-YO”), in which it is “on the roof.” For 10 points, name this animal that titles the fourth tableau of *Pictures at an Exhibition*, which depicts them drawing a cart.

ANSWER: **ox** [accept **cattle**, **cow**, **bull**, **bovine**, **bullock**, or **Bydlo**; accept *Le **Bœuf** sur le toit* or *The **Ox** on the Roof*; accept *The Angora **Ox*** or *Le **Bœuf** Angora*] (Modest Mussorgsky composed *Pictures at an Exhibition*.)
<Classical Music>

19. While exploring a palace, a man in this novel goes mad and develops malaria after discovering a naked statue of a woman for whom he worked as a masseur. This novel’s epigraph is a conversation between the Devil and Providence from Lope de Vega’s *The King of the West*. A crowd in this novel believes that a man escapes his execution in the city square by flying away from his pyre, but do not notice soldiers forcing him into the fire. At the end of this novel, the resigned protagonist shapeshifts into a bird, a stallion, a wasp, and an ant, before finally turning into a goose who is rejected by a flock of geese. The term “lo real maravilloso (“loh rey-AHL mah-ah-vee-YOH-soh”)” was coined in the prologue of this novel, which begins with the one-armed slave Macandal telling stories. For 10 points, name this novel that chronicles Ti Noel’s life during the Haitian Revolution, written by Alejo Carpentier.

ANSWER: *The **Kingdom of This World*** [or *El **reino de este mundo***]
<World Literature>

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20. In George Balanchine's 1974 staging of a ballet named for one of these characters, dancers dress up as Vikings and Roman soldiers to personify Discord and War. Josef Bayer's most famous Austrian court ballet inspired a later ballet in which two of these characters played by Lydia Lopokova and choreographer Léonide Massine dance the can-can to a Rossini piece arranged by Ottorino Respighi. A ballet titled for one of these characters was one of the first to include folk dances like the *mazurka*, which is danced before the Burgomaster announces the arrival of a new bell. That ballet named after one of these characters contains the Act III divertissement "Waltz of the Hours." After he is drugged, Franz's life force is given to Swanhilda, who is disguised as one of these characters created by a doctor. For 10 points, a mechanical example of what type of character comes to life in Léo Delibes's ballet *Coppélia*?

ANSWER: **dolls** [accept **automatons** or **automata**; prompt on **toys** or **puppets** or **figurines**] (The two ballets referenced in the second sentence are *The Fairy Doll* and *The Magic Toyshop*.)

<Other Fine Arts>

BONUSES

1. This ruler reportedly quipped “the wretch cannot have had a bone in his body” while standing over a rival he had just killed. For 10 points each:

[10m] Name this ruler whose reign can be tracked through the *Variae* (“WAH-ree-eye”) of his private secretary, Cassiodorus. This ruler’s palace church survives as Sant’ Apollinare Nuovo (“SAHNT ah-poh-lee-NAH-reh NWOH-voh”).

ANSWER: **Theodoric** the Great [or **Theodoric** the Amal; or **Theoderic** the Great; or **Theoderic** the Amal]

[10h] After retiring, Cassiodorus founded this monastery on his property in Squillace (“squee-LAH-chay”) near the Castellum. While at this monastery, whose name means “fishpond,” Cassiodorus wrote the encyclopedic handbook *Institutes*.

ANSWER: **Vivarium** (“wee-VAH-ree-um”)

[10e] Cassiodorus’s Vivarium operated more informally than the monastery of Monte Cassino (“MOAN-tay kah-SEE-noh”), where this saint established his namesake “rule” for monks to follow.

ANSWER: Saint **Benedict** [or **Benedict** of Nursia; or **Benedetto** da Norcia; or **Benedictus** Nursiae; accept *Rule of Saint Benedict*]

<European History>

2. This sculptor created an indistinct head in his piece *Ecce Puer* after glimpsing a boy for only a moment through a curtain. For 10 points each:

[10h] Name this Italian Post-Impressionist sculptor known for his airy busts with blurry features. This contemporary of Rodin depicted his wife and newborn son in *The Golden Age*.

ANSWER: Medardo **Rosso**

[10e] The figure on the left in Rosso’s *The Golden Age* is performing this action as her baby cries. A Rodin sculpture titled for this action depicts Paolo and Francesca.

ANSWER: **kissing** [accept *The Kiss*; accept giving a **kiss** or **smooch** or equivalents]

[10m] Rosso was a major influence on this later Italian sculptor whose own busts include *Antigrazioso* or *The Mother*. This artist used winding bronze sections to sculpt the “development” of a bottle.

ANSWER: Umberto **Boccioni**

<Painting & Sculpture>

3. In Icelandic folklore, this word describes both a ferocious cat that devours people who are not wearing new clothes and a set of 13 mischief-causing “lads.” For 10 points each:

[10h] Give this word that also describes a type of festive Scandinavian goat character and a related practice of wassailing in disguise.

ANSWER: **Yule** [accept **Yule** cat or **Yule** lads or **Yule** goat; accept **Jule** or **jól** in place of “Yule”; accept **Yuletide**; accept **Julebukking**]

[10e] Scandinavian folk practices involving the Yule goat have been linked to the pre-Christian worship of this Norse deity, whose chariot was drawn by the goats Tanngrisnir and Tanngnjóstr.

ANSWER: **Thor** [or **Thuner** or **Thunar** or **Donar**]

[10m] A white goat similar to the Yule goat is one of the symbols of Dazhbog, who was worshiped as the protector deity of the Kievan Rus along with this other god. This god frequently fought with the underworld god Veles over cattle.

ANSWER: **Perun**

<Mythology>

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4. A glyph depicting an owl holding one of these tools identifies a mysterious ruler who may have sent the general Siyaj K'ak' to install his son Yax Nuun Ahiin on the throne of Tikal. For 10 points each:

[10m] Name these tools that the Maya called *hul'che*, which today are typically referred to by their Nahuatl name or by the Australian word *woomera*.

ANSWER: **spear-throwers** [or **atlatls**; accept answers like a stick for **throwing spears**; accept **arrows**, or **darts** in place of “spears”; reject “spears” or “arrows” or “darts”]

[10e] Tatiana Proskouriakoff was the first to propose that this city's lord Spearthrower Owl conquered Tikal in an event called the *entrada*, or the “arrival of strangers.” This city's ruins contain the Pyramids of the Sun and Moon.

ANSWER: **Teotihuacán**

[10h] Teotihuacán's power in the Mayan lands was later curbed by an *ajaw* of Calakmul whose name identifies him as a “witness” of this place. A queen of Naranjo partly named for this place is shown trampling a naked captive on her Stela 24.

ANSWER: **sky** [or **chan**; accept Lady Six **Sky** or Wak **Chanil** Ajaw or Wak **Chan** Jalam Ajaw Lem; accept **Sky** Witness or Ut **Chanal**]

<World History>

5. In a short 1968 paper, Neil Ashcroft argued that this substance exhibits high-temperature superconductivity. For 10 points each:

[10m] Name this substance that was purportedly synthesized by Ranga Dias and Isaac Silvera by applying nearly 500 gigapascals of pressure in diamond anvil cells. The dynamos of gas giants begin within this substance.

ANSWER: **metallic hydrogen** [prompt on **hydrogen** or **H**] (The scientific community seems to not believe Dias and Silvera's results, but the paper has not been retracted.)

[10e] Metallic hydrogen surrounds the core of this largest planet in the Solar System.

ANSWER: **Jupiter**

[10h] Emission features of H₃⁺ (“H-three-plus”) were detected where this structure intersects Jupiter's ionosphere. “S-bursts” in decametric radio emissions are linked to this structure that consists of the Jovian magnetic field lines that intersect the equatorial plane at the point where the Solar System's most geologically active object orbits.

ANSWER: **Io flux tubes** [prompt on **flux tubes** by asking “what moon forms the flux tube with Jupiter?”; reject “tube(s)”]

<Other Science>

6. Answer the following about the advanced crafts of the Mycenaeans, for 10 points each.

[10h] Many Mycenaean death masks, including the Mask of Agamemnon, were crafted using this metalworking technique in which a sheet of metal is hammered from the back to create a relief on the front.

ANSWER: **repoussé** [or **repoussage**]

[10e] A necklace found in a Cretan tomb contains faience beads of this color. Ancient Egyptians used faience as a cheap alternative to lapis lazuli, a gem with this color.

ANSWER: **blue** [accept light **blue** or any other shade of blue]

[10m] The British Museum holds a *kylix*, a type of these objects, decorated with a stylized cuttlefish. Animals like lions and boars are depicted on another type of these objects called a *rhyton*.

ANSWER: **drinking vessels** [or **wine vessels**; or **cups**; or **goblets**; accept descriptions of an object that stores **liquid**; prompt on **containers** or **vases** or **vessels** by asking “used for what purpose?”]

<Other Fine Arts>

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7. A stop named for this place of articulation is a common allophone of /t/ (“tee”) in English. For 10 points each:

[10e] Name this opening between the vocal folds.

ANSWER: **glottis** [accept **glottal** stop]

[10h] The change from a /t/ to a glottal stop is an example of this type of lenition process in which an oral consonant becomes glottalized.

ANSWER: **debuccalization** [or **debuccalizing**]

[10m] The debuccalization of /s/ (“ess”) at the end of a syllable in many Latin American Spanish dialects is sometimes referred to by this term. This word more commonly refers to a property that is possessed by the /p/ (“pee”) in the English word “pin,” but not the one in the word “spin.”

ANSWER: **aspiration** [or **aspirated**]

<Social Science>

8. While at this place, a character daydreams about being a footsoldier in Napoleon’s army during his failed invasion of Russia. For 10 points each:

[10h] Name this place attended by the obedient character Kraus in a 1909 novel. This place’s director makes advances on the novel’s narrator, a bright servant-in-training.

ANSWER: **Institute Benjamenta** (“ben-yah-mehn-tah”) [or **Benjamenta Institute**; accept anything indicating **school** run by the **Benjamentas**]

[10m] The Institute Benjamenta is attended by the young Jakob von Gunten in a novel by this author, who spent the end of his life writing tiny “microscripts” in a sanatorium.

ANSWER: Robert **Walsert**

[10e] The meaningless rules and inefficient staff in *Jakob von Gunten* are concepts that this author later explored in his novel *The Castle*.

ANSWER: Franz **Kafka**

<European Literature>

9. Post-translational processing of viral fusion proteins confers this property, which allows acidity to trigger a conformational change. For 10 points each:

[10m] Name this property of proteins whose conformations correspond to a *local* energetic minimum but require further energetic input to achieve the conformation corresponding to a global energetic minimum.

ANSWER: **metastability** [or word forms like **metastable**; reject “unstable” or “stable”]

[10h] *Two answers required.* HIV’s metastable Env protein consists of three dimers of these *two* glycoproteins. Upon contact with CD4 and CCR5, one of these proteins is shed while the other changes conformation to open a fusion pore. Name both.

ANSWER: **gp120** AND **gp41** [accept envelope glycoprotein **gp120** in place of “gp120”; accept envelope glycoprotein **gp41** in place of “gp41”; accept answers in either order]

[10e] The best-characterized metastable viral protein is hemagglutinin, whose isotypes, along with those of neuraminidase (“nyur-am-IN-ih-daze”), provide the “H” and “N” numbering for naming strains of this virus.

ANSWER: **influenza** virus [accept **influenza** A virus; prompt on **flu** virus]

<Biology>

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10. Answer the following about authors who wrote about snow despite coming from countries where it rarely snows, for 10 points each.

[10m] This poet complained about describing “the imported alien experience of the snowfall” in the lecture “History of the Voice.” This Barbadian poet coined the term “nation languages” and wrote *Born to Slow Horses*.

ANSWER: Kamau **Brathwaite** [or Edward Kamau **Brathwaite**]

[10e] This author’s poem “Snow in Paris” calls it a “white death” that “burns worse than salt” and compares it to colonizers. This president of Senegal and Négritude poet wrote *Ethiopiennes*.

ANSWER: Léopold **Senghor** [or Léopold Sédar **Senghor**]

[10h] This author wrote about the love between a journalist and a film actor in a novel that analogizes the white world to the title *Memory of Snow and Dust*. A prison memoir by this writer is addressed to an imagined interrogator named “Mr. Investigator.”

ANSWER: Breyten **Breytenbach** (The memoir is *The True Confessions of an Albino Terrorist*.)

<World Literature>

11. Crystal field theory predicts that octahedral complexes with six d electrons will be paramagnetic if this energy is large compared to the d orbital splitting energy. For 10 points each:

[10m] Name this energetic penalty imposed on molecules like singlet oxygen that do not follow Hund’s rule.

ANSWER: electron spin **pairing** energy

[10e] The energy required to pair the spins in oxygen is supplied as light from this region of the electromagnetic spectrum. This radiation produces radicals from diatomic halogens.

ANSWER: **ultraviolet** light [or **UV**; accept **UV-A** or **UV-B**]

[10h] Since pairing is spin-forbidden, this synthetic thiazine dye is added as a sensitizer to improve yields of singlet oxygen. Microbiologists combine eosin with this dye to inhibit Gram-positive bacteria, and it is also the redox reporter bonded to gold in most electrochemical sensors.

ANSWER: **methylene blue** [or **MB**; or **methylthionium chloride**; reject “methylene” or “methyl blue”]

<Chemistry>

12. In a story by this author, the engineer Victor Hatherley is hired to repair a machine that is supposedly used to compress fuller’s earth, but is actually used to make counterfeit coins. For 10 points each:

[10e] Name this author of “The Adventure of the Engineer’s Thumb,” “A Scandal in Bohemia,” and “The Final Problem.”

ANSWER: Arthur Conan **Doyle** [or Arthur Ignatius Conan **Doyle**]

[10h] In Doyle’s story “The Adventure of the Copper Beeches,” Violet is hired as a governess on the condition that she sacrifice this thing; later, Violet finds what appears to be this thing in a locked drawer.

ANSWER: her long **hair** [or equivalents, such as **locks** or **tresses**]

[10m] In Doyle’s story “The Red-Headed League,” Jabez Wilson is hired to copy out this text as part of a criminal’s scheme to keep him occupied while the criminal tunnels into a bank vault.

ANSWER: *Encyclopaedia* **Britannica** [prompt on encyclopedia]

<British Literature>

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13. The Brentano Quartet commissioned poet Mark Strand to write secular poetic interludes between each movement of this work. For 10 points each:

[10h] Name this lengthy orchestral work by Joseph Haydn, which his publisher Artaria requested he transcribe for string quartet. It concludes with a C minor “earthquake” movement.

ANSWER: *The **Seven Last Words of Christ*** [or *The **Seven Last Words of Jesus Christ***; or *The **Seven Last Words of Our Saviour on the Cross***; or *Die **sieben letzten Worte unseres Erlösers am Kreuze***]

[10m] This contemporary Russian composer wrote a musical interpretation of *The Seven Last Words* in her *Sieben Worte* for cello, bayan, and strings. She also wrote *The Canticle of the Sun*.

ANSWER: Sofia **Gubaidulina** [or Sofia Asgatovna **Gubaidulina**]

[10e] A setting of *Es ist vollbracht*, the sixth saying of Jesus on the cross, is included in this J.S. Bach oratorio. This first of Bach’s Passions precedes the *St Matthew Passion*.

ANSWER: **St John** *Passion* [or *Passio **secundum Joannem***]

<Classical Music>

14. The Pemon people guide visitors across the Gran Sabana to Kukenán and to this mountain, which they believe to be the stump of a world tree. For 10 points each:

[10h] Name this mountain above the longest quartzite cave in the world. The novel *The Lost World* names a summit of this mountain.

ANSWER: Mount **Roraima** [or Cerro **Roraima**; or Monte **Roraima**; accept, BUT DO NOT REVEAL, Tepui **Roraima**]

[10m] Roraima, Kukenán, and Cerro Sarisariñama are examples of these mesas in the Guiana Shield. These sandstone table-top mountains have been called “islands above the rainforest” due to their isolated biodiversity.

ANSWER: **tepui**s [or **tepuy**]

[10e] In 1970, a gold prospector’s plane was removed from the Auyán Tepui, the source of this tallest uninterrupted waterfall in the world.

ANSWER: **Ángel** Falls [or Salto **Ángel**; or **Kerepakupai Merú**; or **Parakupá Vená**]

<Geography>

15. Answer the following about issues of nationality around the World Wars, for 10 points each.

[10e] After 1922, this man promoted his namesake “passports” for stateless people. This Norwegian explorer froze his ship *Fram* into the Arctic ice in a bid to reach the geographical North Pole.

ANSWER: Fridtjof **Nansen** [or Fridtjof Wedel-Jarlsberg **Nansen**; accept **Nansen** passports]

[10m] FDR convened a 1938 conference in this city to address the status of stateless Jewish refugees. A set of peace treaties signed in this city addressed the refugee statuses of the Harki and a group whose name means “black feet.”

ANSWER: **Évian** [or **Évian**-les-Bains; accept **Évian** Accords; accept **Évian** Conference]

[10h] In 1940, the German man Friedrich Nottebohm bought citizenship in this country to freely trade in Guatemala, but had his property seized as a German citizen. This country then sued Guatemala in a 1955 ICJ case that upheld the principle of “effective nationality.”

ANSWER: **Liechtenstein** [or Principality of **Liechtenstein**; or Fürstentum **Liechtenstein**; accept **Liechtenstein** v. *Guatemala*]

<Other History>

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16. Since the interaction term is proportional to this function in the Lieb–Liniger (“leeb LIN-ih-gher”) model of one-dimensional bosons (“BOZE-ons”), the particles only interact if they are in contact. For 10 points each:

[10e] Name this so-called “function” that is infinite at the origin and zero elsewhere.

ANSWER: Dirac **delta** function [or Dirac **delta** distribution]

[10h] This theoretical approach has been used to diagonalize the Lieb–Liniger Hamiltonian and a variety of other many-body systems, since a German-born physicist introduced it to solve the spin one-half XXX (“X-X-X”) model.

ANSWER: **Bethe ansatz** (“BAY-tuh ON-zotz”)

[10m] For weak interactions, this function for the Lieb–Liniger model has a branch that is equivalent to this function as derived for superfluids by Nikolay Bogoliubov. For phonons, the two branches of this function correspond to optical and acoustic modes.

ANSWER: **dispersion relation** [or **dispersion curve**; or **energy spectrum**; prompt on **spectrum**]

<Physics>

17. Answer the following about the skepticism of Sextus Empiricus, for 10 points each.

[10m] Sextus argues that ataraxia (“at-uh-RACK-see-uh”) can be attained by this process of suspending judgment. Edmund Husserl resurrected this Greek word to refer to a process of phenomenological “bracketing.”

ANSWER: **epoché** (“eh-po-KAY”)

[10e] Sextus uses the sentence “I think I am not heated” in discussing the question of whether skeptics have these attitudes. A three-pronged definition in Plato’s *Theaetetus* (“thee-uh-TEE-tus”) defines knowledge as a type of this attitude.

ANSWER: **beliefs** [accept justified true **belief**]

[10h] According to Sextus, skeptics can have beliefs that are based on “appearances” or “impressions,” which Pyrrhonists (“PEER-oh-nists”) and Epicureans described using this Greek word. In the singular, this word can also refer to the faculty that produces such impressions.

ANSWER: **phantasiai** [or **phantasia**]

<Philosophy>

18. Wisconsin governor George Peck created a popular series of books about his character Henner Peck, who is described as this type of person. For 10 points each:

[10h] Thomas Bailey Aldrich’s autobiographical novel titled for “The Story of” what type of character created a 19th-century craze for their namesake genre of children’s literature?

ANSWER: **bad boys** [accept “**bad boy**” literature; accept *The Story of a **Bad Boy***; accept Peck’s **Bad Boy**]

[10e] The genre of “bad boy” literature inspired this Mark Twain character, who discovers the hiding place of Injun Joe while trapped in a cave with his crush Becky Thatcher.

ANSWER: **Tom** Sawyer [or Tom **Sawyer**; accept *The Adventures of **Tom Sawyer***]

[10m] This author wrote positive reviews of many “bad boy” novels, including *The Story of a Bad Boy* and *The Adventures of Tom Sawyer*, for the *Atlantic Monthly*, which he edited during the 1870s. This author was nicknamed the “Dean of American Letters” for his prominence.

ANSWER: William Dean **Howells**

<American Literature>

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19. Before becoming a caste-critical traveling poet and then a royal treasurer, this man literally cut ties with his Brahmin family by cutting his *kautuka* thread. For 10 points each:

[10h] Name this 12th-century bhakti leader who was a master of the *vachana* form in the Kannada language. This man called Shiva “lord of the meeting of rivers” after his epiphanic experience at the junction of the Krishna and Malaprabha rivers.

ANSWER: **Basava** [or **Basaveshwara** or **Basavanna**]

[10e] Modern followers of Basava wear pouches containing these devotional objects around their necks. These phallus-shaped objects symbolize Shiva.

ANSWER: **lingam** [accept **Lingavats**]

[10m] Images of Basava found around Karnāṭaka depict him with a bindi and parallel tilak forehead markings arranged in this way, as is typical for followers of Shiva. Please give the number of lines and their orientation.

ANSWER: **three horizontal** lines [accept **sideways** in place of “horizontal”; accept **3** in place of “three”]
<Religion>

20. *Description acceptable.* Thomas Platt supported the creation of an inquiry committee for the realization of this goal that Andrew Haswell Green advanced. For 10 points each:

[10h] Name this political goal achieved in 1898 to combat the growth in importance of Chicago. This goal paved the way for a construction project of William Barclay Parsons and a transit company called the IRT.

ANSWER: **consolidation** of the **Boroughs** [or equivalents like **union** of the **Boroughs**; or **founding** of the City of **Greater New York**; accept **consolidation** of **New York City**; reject descriptions like “founding of New York City” or “founding of Manhattan”]

[10e] Green’s plan won support from Platt, whose nickname includes this title. William Tweed, who was colloquially known by this title, ran Tammany Hall.

ANSWER: **boss** [accept **Boss** Tweed; accept Easy **Boss**]

[10m] Green also worked to create the modern iteration of the New York Public Library by merging the Lenox and Astor collections with one left by the death of this mentor and one-time law partner of his. This politician earlier broke the Canal Ring.

ANSWER: Samuel **Tilden** [or Samuel Jones **Tilden**; accept **Tilden** Trust]
<American History>