2022 ACF Winter

Packet 14 by Chicago A, Oxford A, Georgia Tech B, Minnesota B

Edited by Joseph Krol, Eric Mukherjee, Justin Zhang, Henry Goff, Eve Fleisig, Athena Kern, Ani Perumalla, Hari Parameswaran, Govind Prabhakar, Ethan Ashbrook, Nick Jensen

Tossups

1. One of these devices was placed next to two lead blocks in a 1935 experiment, which was inspired by unreplicated data from one of these devices set up on Mount Wilson by Dayton Miller. The Hammar experiment investigated Augustin-Jean Fresnel’s (“OH-goo-stan-ZHAHN fray-NEL’s”) idea of “dragging” using a type of these devices named for Sagnac (“SAN-yak”). In an experiment that failed to produce the expected shift of 0.04 fringes, one of these devices was mounted on a stone slab floating in a pool of mercury. In that experiment, one of these devices was used to demonstrate that the speed of light was the same in two perpendicular directions, disproving the existence of the luminiferous aether. For 10 points, the Michelson–Morley experiment used what kind of device, named for how they combine light beams to form patterns?

ANSWER: **interferometer**s [accept Michelson **interferometer**s; accept common-path **interferometer**s; accept Sagnac **interferometer**s]

<Physics>

2. Parts of this book were re-edited to discuss 2009 protests for a “2.0” version of it made by the pseudonymous authors Sina and Payman. A character in this book places jasmine flowers in her bra every day, an image that closes its film adaptation. An episode from this book describes teens with plastic keys dying in landmine explosions. This book’s protagonist is hospitalized with a lung ailment after sleeping on the streets for several weeks in Vienna. The execution of Uncle Anoosh turns this memoir’s protagonist against her country’s government, which bans the American music she likes and forces her to wear a veil. For 10 points, name this two-volume comic book memoir of life in and outside of Revolution-era Iran by Marjane Satrapi (“mar-JAHN sah-TRAH-pee”).

ANSWER: ***Persepolis*** [accept ***Persepolis****: The Story of a Childhood* or ***Persepolis****: The Story of a Return*; accept ***Persepolis*** *2.0*]

<World Literature>

3. This organization’s members vetoed a shift of headquarters to Colorado during the so-called “Revolt of Cincinnati,” after which this organization’s political turn began under the anti-immigrant hawk Harlon Carter. In 2019, this organization cut ties with the advertising firm Ackerman McQueen. This organization’s president controversially called federal agents “jack-booted government thugs” after the Oklahoma City Bombing. A Charlton Heston speech inspired this organization to print bumper stickers reading that certain objects could not be “[taken] from my cold, dead hands.” In recent times, this organization has backed Florida’s “Stand Your Ground” laws. For 10 points, name this organization led by Wayne LaPierre, which lobbies for gun rights.

ANSWER: **NRA** [or **National Rifle Association**]

<American History>

4. One of these figures names a “method” led by the “Supreme Master,” who operates the Loving Hut restaurant chain and motivated a 1999 ban on “heretical teachings.” Medieval paintings depicted one of these figures with a flask and willow branch to evoke the “water moon.” A six-syllable chant ascribed to one of these figures is inscribed on mani stones. One of these figures with either 33 or 108 manifestations, who may be androgynous, says “gone, gone, gone beyond” in a dialogue with Śāriputra in a “perfection of wisdom” text. Japan’s Saigoku Kannon Pilgrimage honors one of these figures who is depicted with a thousand arms, the “goddess of mercy” Guānyīn, who is also called Avalokiteshvara (“UH-vloh-kee-TESH-vruh”). For 10 points, name these compassionate figures who may delay their enlightenment to aid others in Mahāyāna Buddhism.

ANSWER: **Bodhisattva**s [prompt on Buddhist goddesses or equivalents; reject “Buddhas”] (The first line refers to Ching Hai’s Guānyīn Fǎmén sect. The chant is “Om mani padme hum.” The fourth line refers to the Heart Sūtra.)

<Religion>

5. A comic aria by this composer that twice features a D2, one of the lowest notes in the standard repertoire, is often sung to demonstrate technical prowess by basses. In a bass aria by this composer of “O, how I want to triumph,” an irate man promises, “if you want to dance, my little count, I’ll play the little guitar for you.” The bass Osmin features in an opera by this composer that a ruler legendarily described as having “too many notes.” An opera by this composer features a meta joke in which a servant complains about his earlier opera’s bass aria “Non più andrai” being overplayed. A bass character in an opera by this composer schemes with his fiancée Susanna to expose the infidelity of Count Almaviva. For 10 points, what composer’s operatic roles for bass include the title character of *The Marriage of Figaro*?

ANSWER: Wolfgang Amadeus **Mozart** [or Johannes Chrysostomus Wolfgangus Theophilus **Mozart**] (The operas mentioned are *The Abduction from the Seraglio*, *The Marriage of Figaro*, and *Don Giovanni*.)

<Other Fine Arts (Opera)>

6. The fact that this concept mainly applied to short-term issues contributed to its “decline” according to a book by Keith Thomas. A 1937 study that illustrates this concept using the example of a collapsing granary argues that this concept acts “regularly and impartially” and therefore is equivalent to Western concepts of justice. Misfortune is attributed to this concept according to a study about it and its users among the Zande by E. E. Evans-Pritchard. Societies move through phases of believing in “religion” and “science” after belief in this concept, according to James Frazer. The phenomenon of believing that unrelated events are causally related is called this concept’s namesake “thinking.” For 10 points, name this supernatural concept that may be wielded by healers or shamans.

ANSWER: **magic** [or **Zauber**ei; accept **magical** thinking; accept **witch**craft; accept **magic**ians; accept **sorcery**; accept sympathetic **magic** or imitative **magic**; accept *Witchcraft, Oracles and* ***Magic*** *Among the Azande*; accept *Religion and the Decline of* ***Magic***; prompt on rites or rituals; prompt on medicine or healing or cures until “healers” is read; prompt on the supernatural or superstitions until “supernatural” is read]

<Social Science>

7. This compound can be made by a green process co-developed by A. N. Simonov that uses a salt to shuttle protons for a lithium-mediated electrochemical reduction. In the Olin Raschig process, the reaction between this compound and sodium hypochlorite is used to produce hydrazine. This compound’s liquid form is the usual solvent used in the Birch reduction. A cost-efficient compromise pressure of 200 atmospheres is used in a chamber with catalyst beds in the production of this compound, which is oxidized in the Ostwald process. Toxic chloramines can be formed when this compound is mixed with bleach. Iron catalyzes the production of this compound in the Haber–Bosch process. For 10 points, fertilizer production consumes what nitrogen-containing compound?

ANSWER: **ammonia** [or **NH3**]

<Chemistry>

8. People of this ethnic group formed brass bands at Moravian missions like Nain that created Latin precursors of their syllabics. A builder of the DEW (“dew”) line on this ethnicity’s land replaced their disc numbers in “Project Surname.” A two-dollar bill depicts this ethnicity’s relocation as “human flagpoles” to Resolute Bay. The film *Atanarjuat: The Fast Runner* relates a legend of this ethnicity of Governor-General Mary Simon. In the 1950s, this ethnic group’s dogs were killed by the RCMP. In 1999, this ethnic group’s Tapiriit (“tah-PEER-it”) created a territory whose flag depicts a stone cairn called an inuksuk (“ee-NUCK-suck”). This ethnic group is related to Alaska’s Yupik and Greenland’s Kalaallit, who attend their Circumpolar Council. For 10 points, Nunavut is a homeland of what Indigenous people of the Canadian Arctic?

ANSWER: **Inuit** [accept **Inuvialuit** or **Inuvialuk**; accept **Iñupiat** or **Iñupiaq**; accept **Tunumiit** or **Inughuit**; accept **Yupik** or **Kalaallit** until each is read; accept **Alutiiq** or **Sugpiaq**; accept **Eskimo**s (note that many Inuit consider it offensive); accept **Inuit** Circumpolar Council or **Inuit** Tapiriit Kanatami; prompt on Indigenous Canadians; reject “First Nations” or “Native Americans”] (The second line refers to Abe Okpik and the Distant Early Warning Line.)

<Other History>

9. In a story by this author, a man purposefully mistranslates a letter in French that details a soldier’s affair before returning the title bird to the soldier’s wife. This author of “The Wintry Peacock” wrote a story in which a woman thinks that her husband may be in the Prince of Wales pub, which was adapted into his play *The Widowing of Mrs Holroyd*. This author’s upbringing in the coalfields of Nottinghamshire inspired his story in which Walter’s death in a mining accident is reported to Elizabeth Bates, who notices the title floral scent. This author of “Odour of Chrysanthemums” wrote a novel in which the half-paralyzed man Clifford is married to Constance, who has an affair with the gamekeeper Oliver Mellors. For 10 points, name this author of *Lady Chatterley’s Lover*.

ANSWER: D. H. **Lawrence** [or David Herbert **Lawrence**]

<British Literature>

10. In 1990, a painting by this artist was rediscovered hanging on the wall of the Society of Jesus in Dublin. This artist likely depicted himself as a man holding a lantern in that painting, whose title figure is grabbed by a soldier in anachronistic Renaissance armor. This artist of *The Taking of Christ* used himself as the model for a severed head in his painting *David with the Head of Goliath*. In another painting, this artist depicted himself with jaundiced skin and wearing a leafy crown as he holds a bunch of grapes. That painting, *Young Sick Bacchus*, makes use of this artist’s characteristic contrasts between light and shadow, which he also used in a painting in which light shines on a man who points to himself as Jesus summons the title saint. For 10 points, name this tenebrist artist of *The Calling of St. Matthew*.

ANSWER: **Caravaggio** [or Michelangelo **Merisi** or Michelangelo **Merisi** da Caravaggio]

<Painting & Sculpture>

11. Two characters in this story debate if six tigers are enough to merit the qualifier “only” while discussing a racist children’s book. Editor William Maxwell convinced this story’s author to add its opening scene, in which a woman phones her mother about her husband’s psychiatric health. A man in this story quotes a line from *The Waste Land* about “mixing memory and desire” when a girl in a yellow swimsuit confronts him for sitting on a piano bench with Sharon Lipschutz. After describing animals who go in a hole, eat too much of a certain food, and die, this story’s protagonist kisses the foot of Sybil Carpenter. For 10 points, Seymour Glass commits suicide after searching for the title fictional aquatic animals in what story by J. D. Salinger?

ANSWER: “A **Perfect Day for Bananafish**”

<American Literature>

12. This composer discouraged sopranos from singing his Rimbaud (“rahm-BOH”)-inspired song cycle *Les Illuminations* (“lez ee-loo-mee-nah-SYOHN”) because a frequent collaborator had a lower vocal range. This composer wrote a piece for that collaborator in which a Prologue and Epilogue for solo horn bookend settings of poets such as Blake and Tennyson. This composer was one of the cofounders of the Aldeburgh (“AWL-burr-uh”) Festival. An F sharp-C tritone motif recurs in a piece by this composer of a *Serenade for Tenor, Horn, and Strings* for his longtime partner, Peter Pears (“PEERS”). Pears sang the tenor solo “What passing bells” for the premiere of a piece by this composer that sets poems by Wilfred Owen; that piece is his *War Requiem.* For 10 points, name this British composer who wrote *Peter Grimes* and *The Young Person’s Guide to the Orchestra*.

ANSWER: Benjamin **Britten** [or Edward Benjamin **Britten**]

<Classical Music>

13. This vector quantity is approximated using 195 coefficients in a thirteenth-order spherical harmonic expansion that is officially updated every five years by the IAGA (“I-A-G-A”) to account for secular variation. Isoclinic lines join points with an equal value for this vector quantity’s inclination to the horizontal, which is called its “dip.” Changes in this vector give rise to periods called chrons. The Vine​​–Matthews–Morley hypothesis concerns patterns formed when this vector quantity changes direction, which creates “stripes” due to spreading around mid-ocean ridges. Dynamo theory accounts for the origin of this vector quantity, which has a typical observed surface magnitude of 0.5 gauss, or 50 microteslas. For 10 points, what vector field causes compasses to point north?

ANSWER: Earth’s **magnet**ic field (strength) [or geo**magnet**ic field (strength) or Earth’s **magnet**ic flux density or geo**magnet**ic flux density or Earth’s **B**-field; accept World **Magnet**ic Model]

<Other Science>

14. A character in a play by this author addresses “all that is left from humanity” as “leftovers” that can “make a very good soup.” In that play by this author, a character greets the Lady, the Photo-engraver, and the Belle while introducing his wife as Semiramis. In that play by this author, the deaf-mute Orator writes “ANGELFOOD” on a chalkboard before the Emperor arrives, causing two elderly characters to jump out of a window. Those characters created by this author, the Old Man and Old Woman, arrange a play’s title objects for invisible guests. In another play by this author, Jean’s skin turns green and the typist Daisy leaves Bérenger, who watches every character but himself turn into the title animal. For 10 points, name this author of *The Chairs* and *Rhinoceros*.

ANSWER: Eugène **Ionesco** [or Eugen **Ionescu**]

<European Literature>

15. This city’s cathedral contains zodiac signs painted by its namesake baroque school. A Late Intermediate kingdom based in this city built a mortarless ashlar house where women learned to weave, the main acllahuasi (“ock-lah-WAH-see”). The Killke (“KEEL-kay”) culture began the fortress that formed the “head” of this city, Sacsayhuamán (“sock-say-wah-MON”). This city’s name means “navel” due to its central temple, whence 41 paths called ceques (“seck-EHZ”) led out to sacred huacas (“WAH-kahs”) in the “Four Parts Together,” or suyus. In this non-coastal city, a colonial viceroyalty built the Convent of Santo Domingo over the Coricancha (“koh-ree-CON-chah”), a temple that held royal mummies. Garcilaso (“gar-see-LAH-soh”) de la Vega observed this city’s festival of Inti, which Pachacuti created a century before it was briefly conquered by the brother of Huáscar. For 10 points, Atahualpa (“at-uh-WAHL-puh”) was the last sapa to rule from what Inca capital?

ANSWER: **Cusco** [or variants like **Cuzco** or **Qusqu** or **Qosqu**; accept Kingdom of **Cusco**; accept **Cusco** school or escuela **cuzqueña**] (Diego Quispe Tito painted the zodiac series.)

<World History>

16. When given a choice of “come with me” or “lie here,” this film’s protagonist immediately decides, “I want to lie here.” In a Wong Kar Wai-esque scene in this film, two characters discuss their lost love in the rain behind a movie theater. A character in this film jokingly scolds, “language,” during a silent conversation between two rocks in front of a canyon. An actor who gained fame as Indiana Jones’s sidekick Short Round returned to acting in this film, in which his character covers various objects with googly eyes to subvert the power of a black hole-like bagel. This film’s protagonist, a laundromat owner with tax problems, engages in “verse-hopping” to fight the nihilistic villain Jobu Tapaki. For 10 points, name this 2022 multiverse martial arts film directed by the Daniels and starring Michelle Yeoh.

ANSWER: ***Everything Everywhere All at Once*** [prompt on *EEAAO*]

<Pop Culture>

17. *Description acceptable*. Fragments by Pindar hold that this event took place on the plains of Phlegra. During this event, a god stopped the sun and moon from shining and harvested all of the *pharmakon* on Earth. This event is depicted in the exterior frieze of the Great Altar of Pergamon. A figure who started this event by stealing the cattle of Helios could only be killed after being dragged out of his homeland by a mortal. Mount Etna was supposedly formed during this event by the imprisonment of Enceladus. Heracles helped to end this event by killing figures like Alcyoneus and Porphyrion. For 10 points, name this event from Greek mythology in which the gods fought some large children of Gaia.

ANSWER: **Gigantomachy** [or **Gigantomachía**; or descriptions of a **war** or **battle** between the gods and the **Giant**s; accept **Gígantes** or **Gigas** in place of “Giants”; accept **Gigantomachy** Frieze; reject “Titanomachy”]

<Mythology>

18. A disease caused by mutations in this protein has a localized variant named for Weber and Cockayne. This protein attaches to plakoglobin and desmoplakin in the inner dense plaque of desmosomes. Mutations in the 5 and 14 isoform of this protein causes epidermolysis bullosa simplex. Filaggrin binds to this protein in corneocytes. Elaine Fuchs discovered that the Type I, or acidic, and Type II, or basic, isoforms of this protein are pairwise regulated. This protein forms coiled-coil dimers that form a staggered tetramer. The strength of this intermediate filament protein comes from its many disulfide bridges. For 10 points, name this structural fibrous protein that makes up the bulk of hooves, horns, and hair.

ANSWER: **keratin** [or cyto**keratin**; accept alpha-**keratin**; accept acidic **keratin** or type I **keratin**; accept basic **keratin** or type II **keratin**; accept **keratinocytes**; prompt on intermediate filaments or IFs]

<Biology>

19. In his monograph on the invention of these things, Larry Shiner wrote that their modern conception “is a European invention barely two hundred years old.” A Paul Valéry quote about matter and space and time opens an essay titled for these things that briefly discusses their “cult value.” John Dewey argued that institutions separated these things from daily life in an essay titled for them “as Experience.” Susan Sontag argued for an “erotics” of these things while criticizing in-depth analyses of them in her essay “Against Interpretation.” Walter Benjamin wrote about the unique “aura” of these things in an essay titled for one of them “in the Age of Mechanical Reproduction.” For 10 points, name these creative objects that are studied in aesthetics.

ANSWER: works of **art** [or **art**works; accept specific types of visual art such as **painting**s or **drawing**s or **sculpture**s or **photo**graphs; accept *The Invention of* ***Art***; accept “The Work of **Art** in the Age of Mechanical Reproduction” or *Das* ***Kunst****werk im Zeitalter seiner technischen Reproduzierbarkeit* or *L’œuvre d’****art*** *à l'époque de sa reproduction mécanisée*; accept ***Art*** *as Experience*]

<Philosophy>

20. This leader’s aphorism “everyone imposes his own system as far as his army can reach” was included in a series of “conversations” written by Milovan Djilas. This leader, who is praised in the article “Dizzy with Success,” had his policies implemented by a minister of railways named “Iron Lazar.” Books by Robert Conquest about this leader include one about an event he oversaw called *Harvest of Sorrow*. A city named after this leader was defended by Operation Uranus. This leader exacerbated famine through the deportation of kulaks to labor camps, but was forced to reverse course after his country was invaded during Operation Barbarossa. For 10 points, name this Soviet leader who carried out the Holodomor in Ukraine and was in power during World War II.

ANSWER: Joseph **Stalin** [or Joseph Vissarionovich **Stalin**; or Ioseb Besarionis dze **Jughashvili**]

<European History>

TB. In 1954, an anti-McCarthy senator representing this state killed himself over Styles Bridges’s blackmail for his gay son’s arrest. This state’s trona mining for soda ash boomed under Governor Edgar Herschler during the Sagebrush Rebellion. Norm Mineta co-sponsored the 1988 Civil Liberties Act with this state’s senator Alan Simpson, whom he met at its internment camp at Heart Mountain. This state contains the first US national monument protected by the Antiquities Act. After the Clean Air Act, the coal industry shifted west to this state’s city of Gillette in the southern portion of the Powder River Basin. A 2009 anti-hate crime law was inspired by the 1998 murder in this state of the gay student Matthew Shepard. For 10 points, what state contains Devils Tower, Laramie, and Cheyenne?

ANSWER: **Wyoming** [or **WY**] (The first sentence is about Lester C. Hunt. Wyoming coal has a lower sulfur content than Appalachian coal.)

<TB (American History)>

Bonuses

1. William Dalrymple called for this man’s statue in Whitehall to be torn down in a 2020 article for *The Guardian*. For 10 points each:

[10h] Name this man who was satirized as “Lord Vulture” because he couldn’t govern well. After parliament led an inquiry into this man’s corrupt leadership, he committed suicide in 1774.

ANSWER: Robert **Clive** [or Robert **Clive**, 1st Baron Clive; accept **Clive** of India]

[10e] Clive’s victory at the Battle of Plassey secured this company’s domination of South Asia. This joint stock company was replaced by the British Raj after the Sepoy Mutiny of 1857.

ANSWER: British **East India** Company [or **EIC**; reject “Dutch East India Company”]

[10m] Clive was also nicknamed the “tyrant” of this city, which became the capital of a South Indian presidency governed from Fort St. George. Today, this city is the capital of the state of Tamil Nadu.

ANSWER: **Chennai** [or **Madras**; accept **Madras** Presidency or **Madras** Province]

<European History>

2. In a famous photograph of people with this profession, a few children were allowed to pose at the front of the frame because one repeatedly stole a subject’s hat and refused to return it until they were included. For 10 points each:

[10h] Name this specific profession of the 57 main subjects of Art Kane’s 1958 photograph *A Great Day in Harlem*. Many widely reproduced images of this profession are drawn from the immense collection of William P. Gottlieb.

ANSWER: **jazz** musicians [prompt on musicians or performers or singers or artists by asking “in what genre?”] (The musician whose hat was stolen was Count Basie.)

[10e] The collection of Herman Leonard, who extensively photographed the mid-20th-century jazz scene, is now in the archives of this institution that operates a group of Washington, D.C. museums like the National Portrait Gallery.

ANSWER: **Smithsonian** Institution

[10m] Dexter Gordon once referred to music photographer David Redfern as jazz’s equivalent of this photographer. This French photographer’s image of a man skipping over a puddle illustrates his concept of the “decisive moment.”

ANSWER: Henri **Cartier-Bresson** (“kart-YAY breh-SOHN”)

<Other Fine Arts (Photography)>

3. When levels of CstF are low, the first sequence for this process is skipped, resulting in a longer transcript that leads to a protein with an alternate C-terminus. For 10 points each:

[10h] Name this process in which CPSF recruits CstF, which cleaves the 3’ (“three-prime”) end of a certain molecule, which is then acted upon by PAP.

ANSWER: **polyadenylation** [or descriptions of **add**ing a **poly(A)** tail; prompt on adding a tail; prompt on post-transcriptional modification or post-transcriptional processing]

[10e] CstF exerts its activity after this process, in which DNA is read to synthesize RNA. This process is catalyzed by RNA polymerase.

ANSWER: **transcription** [or word forms like **transcribe**; reject “translation”]

[10m] Polyadenylation protects mRNA from these enzymes, which cleave nucleotides off of the end of a DNA or RNA molecule, unlike endonucleases.

ANSWER: **exonuclease**s [prompt on nucleases; reject “endonucleases” or “restriction enzymes” or “restriction endonucleases”]

<Biology>

4. In this book’s first section, an anthropologist lies about being a bootlegger to sawmill employees before holding a contest to collect folklore. For 10 points each:

[10h] Name this book whose second part, titled “Hoodoo,” describes the author’s experiences with spiritual doctors in New Orleans.

ANSWER: ***Mules and Men***

[10m] This anthropologist wrote *Mules and Men* as well as the 1928 essay “How It Feels To Be Colored Me,” both of which share a setting with much of her fiction.

ANSWER: Zora Neale **Hurston**

[10e] Like most of Hurston’s work, the first section of *Mules and Men* is set in this US state. Folk figures from this state include the John Henry-like figure Ole Pete, who lived in Tampa.

ANSWER: **Florida** [or **FL**]

<Social Science>

5. In 2001, a team at IBM applied this procedure to the number 15 using a quantum computer running Shor’s algorithm. For 10 points each:

[10e] Name this procedure that splits a number up into its prime divisors.

ANSWER: prime **factorization** [or integer **factorization**; or word forms like **factorize**]

[10m] The runtime of Shor’s algorithm is polynomial in this function of the input *n*, making it viable for breaking RSA. The average runtime of binary search is big O of this function of *n*, as on average it splits the list in half on each step.

ANSWER: natural **log**arithm [or **log** n or **ln** n; accept any particular base logarithm]

[10h] An efficient application of Shor’s algorithm would also ruin the security of this method of key exchange. Ralph Merkle and two other scientists co-created this first method of key exchange to involve both public and private keys.

ANSWER: **Diffie–Hellman** exchange [or **Diffie–Hellman**–Merkle exchange; accept **exponential** key exchange]

<Other Science>

6. A poem about the death of this author laments that “the honor’s striver fell, slandered by a gossip's dread.” For 10 points each:

[10m] Name this author whose death inspired the poem “The Death of the Poet.” This poet’s fatal duel surprisingly resembled a duel fought by one of his characters after he flirts with a friend’s fiancée at a name day party.

ANSWER: Alexander **Pushkin** [or Alexander Sergeyevich **Pushkin**]

[10e] This Pushkin title character kills his friend Lensky in a duel. The “superfluous man” trope of cynical, bored aristocrats in Russian literature originated with this character.

ANSWER: Eugene **Onegin** (“ah-NYEH-ghin”) [or **Eugene** Onegin; or **Yevgeniy** Onegin]

[10h] This Russian author wrote “The Death of the Poet” after Pushkin’s death and drew on the “superfluous man” trope for a novel whose protagonist falls in love with Princess Mary and kills Grushnitski in a duel.

ANSWER: Mikhail **Lermontov** [or Mikhail Yuryevich **Lermontov**] (The novel is *A Hero of Our Time*.)

<European Literature>

7. Classicists have noted that this section of a larger work makes no mention of the Dorians, implying that it may be more modern than its parent text. For 10 points each:

[10h] Name this specific section in which the narrator lists out each faction of the Achaean (“ah-KEE-in”) army in great detail. Most of the objects that this section is named for are described as “black” or “hollow.”

ANSWER: **Catalogue of Ships** [or **neōn katálogos**; prompt on Book Two of the Iliad; prompt on the Iliad]

[10e] Like the beginning of the *Iliad*, the Catalogue of Ships in Book Two opens by invoking these Greek goddesses, the purveyors of the arts.

ANSWER: **Muse**s [or **Mousai**]

[10m] While organizing the armies in Book Two, Agamemnon is repeatedly referred to as simply the son of this man. This man names a cursed “House” that begins with Tantalus, who tried feeding his son Pelops (“PELL-ops”) to the gods.

ANSWER: **Atreus** (“AY-tree-us”) [accept House of **Atreus** or **Atreidai** or **Atreidae**]

<Mythology>

8. This piece’s composer claimed it was inspired by a melody he heard a Circassian prince play while traveling in the Caucasus. For 10 points each:

[10h] Name this “Oriental Fantasy” for piano, whose different editions often contain easier *ossias* because of its difficulty.

ANSWER: ***Islamey*** [or ***Islamey****: Oriental Fantasy* or ***Islamey****: Vostochnaya fantaziya*]

[10e] Nikolai Rimsky-Korsakov quoted themes from *Islamey* in this symphonic work titled for the female protagonist of the *One Thousand and One Nights*.

ANSWER: ***Scheherazade*** [or ***Shekherazada***]

[10m] This other Russian composer quoted *Islamey* in one of his operas, which also includes a set of oft-excerpted *Polovtsian Dances* inspired by nomadic groups.

ANSWER: Alexander **Borodin** [or Alexander Porfiryevich **Borodin**] (The opera is *Prince Igor*.)

<Classical Music>

9. The “election” of Queen Amanishakheto appears on a stele from this kingdom, whose Musawwarat es-Sufra complex contained a temple to the lion god Apedemak. For 10 points each:

[10h] Name this kingdom where a bronze head of Augustus was taken in a raid by its queen Amanirenas, whose title of kandake inspired the modern name “Candice.” This kingdom developed from the Kerma culture in the Napatan period.

ANSWER: **Kush** [or Kingdom of **Kush**; or **Kushite** Empire; or **Qes**; or **Ku-u-si**; accept island of **Meroë** or variants like **Medewi** or **Medewi** or **Meruwah** or **Meruwi** or **Meroitic** Empire; prompt on Nubia]

[10m] Kushite horse breeders lived in this city during the reign of Sargon II, who built the city of Dur-Sharrukin that it replaced as capital of the Neo-Assyrian Empire. ISIS destroyed a shrine to Jonah in this city near modern Mosul.

ANSWER: **Nineveh** [or variants like **Naynawā** or **Nīnwē** or **Ninua** or **Nīnəwe**]

[10e] Sennacherib’s palace at Nineveh contained a seal of the Kushite pharaoh Shabaka, whose namesake stone describes the unification of Egypt from this ancient capital that names a modern city in Tennessee.

ANSWER: **Memphis** [or **Men-nefer** or **Manf**; accept **Mit Rahina**; accept **Memphite** Theology; accept **Memphis**, Tennessee]

<Other History>

10. In a poem titled as a “letter from” this author, a little boy asks her, “does you, m’lady, sweep chimneys too?” For 10 points each:

[10m] Name this poet who authored a short poem that describes blackness as a “diabolic dye” and begins, “‘twas mercy brought me from my pagan land.”

ANSWER: Phillis **Wheatley** [accept “A Letter From Phillis **Wheatley**, London 1773”]

[10e] The title “pagan land” of that Wheatley poem is this continent, where Wheatley was born before being brought to America as a slave.

ANSWER: **Africa** [accept “On Being Brought from **Africa** to America”]

[10h] This author of “A Letter from Phillis Wheatley” described a more realistic image of the Atlantic slave trade in his poem “Middle Passage.” Another poem by this author asks, “what did I know of love’s austere and lonely offices?”

ANSWER: Robert **Hayden** (The other poem is “Those Winter Sundays.”)

<American Literature>

11. Since 2017, English-speaking insurgents have been fighting this country’s French-speaking leadership in a civil war nicknamed the “Anglophone Crisis.” For 10 points each:

[10m] Name this Central African country that has been led since 1982 by Paul Biya (“BEE-ah”), who is the longest-ruling non-royal current world leader.

ANSWER: **Cameroon** [or **Cameroun** or Republic of **Cameroon** or République de **Cameroun**]

[10h] The Anglophone Crisis has been centered on this breakaway state in northwest Cameroon, whose largely unrecognized first president is Sisiku Julius Ayuk Tabe (“tah-BAY”).

ANSWER: **Ambazonia** [or Federal Republic of **Ambazonia** or **Amba Land**; reject “Amazonia”]

[10e] In 2019, this UN agency stated that over 200,000 children had been displaced by the Anglophone Crisis. This UN agency, which is supported by an annual trick-or-treat charity drive, provides aid to young people worldwide.

ANSWER: **UNICEF** (“YOO-nih-seff”) [or United Nations International **Children’s** Emergency **Fund** or United Nations **Children's Fund**]

<Current Events>

12. Scholars disagree over how much architectural influence French colonial forces had in the rebuilding of this mosque. For 10 points each:

[10h] Name this earth-brick mosque whose walls are covered in smooth plaster and punctuated with palm sticks. This Malian mosque has three large towers topped with cone-shaped spires on one wall.

ANSWER: Great Mosque of **Djenné** (“jen-NAY”) [or ạl̊-jāmiʿu ạl̊-kabīru fī **Jīnī**ĩhu; accept **masjid** or **jami**-e or **jāmi**ʿu in place of “mosque;” prompt on “Great Mosque”]

[10e] On the day of Jum’a, mosques like the Great one in Djenné are the site of communal instances of this action, which is known as *salat* and often done using a mat.

ANSWER: **pray**er [accept **worship**; prompt on salat]

[10m] Ostrich eggs top the iconic pinnacles of three towers on the wall that faces this direction on the Great Mosque of Djenné. While praying, Muslims face this direction oriented toward the Kaʿba of Mecca.

ANSWER: **qibla** [accept **qibla** wall]

<Religion>

13. Archaeological sites in this ocean include Kilu Cave, “Chief Roi Mata’s Domain,” and the Taputapuātea marae (“tah-POO-tah-POO-AH-tay-ah mah-RAI”). For 10 points each:

[10e] Name this ocean where many islands contain dentate-stamped pottery left by the ancient Lapita (“lah-PEE-tah”) culture, whose Polynesian descendants spread “canoe plants” like breadfruit and taro.

ANSWER: **Pacific** Ocean [accept South **Pacific**]

[10h] Lapita settlers of this modern-day Pacific island country may have built stilt-houses on Chuuk (“chook”) and Kosrae (“koh-SHY”). The Saudeleur (“SAO-deh-loor”) dynasty ruled Pohnpei’s (“PON-pay’s”) megalithic city of Nan Madol (“nan muh-DAWL”) in this homeland of the navigator Mau Piailug (“MAO pee-AI-lug”).

ANSWER: **Micronesia** [or Federated States of **Micronesia** or **FSM**]

[10m] Micronesia likely obtained flakes of this material from Tonga or the Solomons. Rapa Nui’s rongorongo script was carved with shark teeth or this material, which Mesoamericans used for mirrors and prismatic blades.

ANSWER: **obsidian** [or **itztli**; prompt on volcanic glass; prompt on igneous rocks or volcanic rocks or stones; prompt on rhyolite or rhyolitic rock]

<World History>

14. 1,3-diaxial (“dai-ax-ee-ull”) interactions in methylcyclohexane (“meth-ill-cyclo-hexane”) are modeled as having similar energies to butane in this conformation. For 10 points each:

[10h] Name this conformation in which every substituent in a Newman projection is 60 degrees from the others.

ANSWER: **staggered** [accept **gauche** interactions]

[10m] Staggered conformations are partly stabilized by this phenomenon, which involves the delocalization of electron density from a sigma bond to a p-orbital. Carbocations (“carbo-CAT-ions”) are stabilized by this phenomenon.

ANSWER: **hyperconjugation** [accept **sigma-conjugation** or **sigma-donation** accept **no-bond resonance**; reject “resonance”; reject “conjugation”]

[10e] Hyperconjugation can explain why more substituents increase this functional group’s stability. This functional group consists of a carbon-carbon double bond.

ANSWER: **alkene** [accept **olefin**; reject “alkane” or “alkyne”]

<Chemistry>

15. This poem ends by lamenting the loss of “the tender grace of a day that is dead.” For 10 points each:

[10h] Name this poem that commands the sea to do the title action “on thy cold gray stones.”

ANSWER: “**Break, Break, Break**”

[10m] “Break, Break, Break” was written in response to the death of this person. Another poem about this person’s death, which declares “‘tis better to have loved and lost, then never to have loved at all,” is partly titled “In Memoriam.”

ANSWER: Arthur Henry **Hallam** [accept **A.H.H.**; accept “In Memoriam **A.H.H.**”]

[10e] This author of “Break, Break, Break” mourned the death of Hallam in his poem “In Memoriam A.H.H.” He also wrote “The Charge of the Light Brigade.”

ANSWER: Alfred, Lord **Tennyson** [or Lord Tennyson; or Alfred **Tennyson**, 1st Baron Tennyson]

<British Literature>

16. Saul Kripke identified a paradox in a book by this philosopher that is summarized as “no course of action could be determined by a rule, because any course of action can be made out to accord with the rule.” For 10 points each:

[10m] Name this philosopher who is the subject of that “rule-following paradox.” A book by this thinker holds that the nature of beetles inside different boxes can’t be expressed through words.

ANSWER: Ludwig **Wittgenstein** (The book in both cases is Wittgenstein’s *Philosophical Investigations*.)

[10e] Kripke’s book on Wittgenstein is partially titled for the private type of these constructs. The nature and structure of these constructs is studied in linguistics.

ANSWER: **language**s [or **Sprache**n; accept private **language**s]

[10h] Kripke demonstrated the rule-following paradox with this absurd addition-like function that equals 5 for any sum over 57. Kripke uses this function to illustrate how “interpretations by themselves do not determine meaning.”

ANSWER: **quus** (“kwoose”) function [accept **quaddition**]

<Philosophy>

17. When water coolants in these facilities absorb stray neutrons, it can form radioactive tritium (“TRIT-ee-um”) that can leak into the water supply. For 10 points each:

[10e] Name these facilities that produce energy via the fission of uranium.

ANSWER: nuclear fission **reactor**s [or **nuclear** power **plant**s or **nuclear** power **station**s or **atomic pile**s; prompt on power plants or power stations]

[10m] Many reactors use water both as a coolant and as one of these substances that slow down neutrons. Graphite is another common example of these substances.

ANSWER: neutron **moderator**s

[10h] When used as a coolant, this general type of substance would allow generation IV (“four”) reactors to function at atmospheric pressure, as did the Aircraft Reactor Experiment. The 1960s MSRE is the most recent of the two operational reactors that used this type of coolant.

ANSWER: **molten salt** [accept **liquid salt**; accept **molten salt** reactor; prompt on salt or liquid or molten substances; prompt on MSRs by asking “what does that stand for?”]

<Physics>

18. Japanese woodblocks inspired the high horizon line in a painting by this artist, in which a family in a yellow boat rows toward the viewer. For 10 points each:

[10m] Name this artist who also painted a woman in a striped dress washing a child’s feet over a basin.

ANSWER: Mary **Cassatt** [or Mary Stevenson **Cassatt**]

[10e] Cassatt exhibited paintings at an 1879 exhibition for this movement, which also included Claude Monet.

ANSWER: **Impressionism** [or **Impressionist**s; or L’**impressionnisme**; accept Fourth **Impressionist** Exhibition]

[10h] Several Cassatt works depict women in these places, including a painting of a woman in a pink dress and one in which a woman in black looks intently to the left as a man in the background stares at her.

ANSWER: **opera** houses [accept *In the* ***Loge***; accept ***Palais Garnier***; accept Paris **Opera** or **Opéra** de Paris; prompt on theater; reject “loggia”]

<Painting & Sculpture>

19. In this city, Otto and Muriel Snowden founded Freedom House to help provide accommodation to low-income African-American families. For 10 points each:

[10m] Name this city where Louise Day Hicks founded ROAR. Stanley Forman’s photograph “The Soiling of Old Glory” was taken in this city amidst a crisis over a new means of desegregating its schools.

ANSWER: **Boston**, Massachusetts

[10e] Boston public school desegregation was pushed with this form of transportation. Martin Luther King organized a boycott of this form of transportation in Montgomery in the 1950s.

ANSWER: **bus**ing [or **bus**es; accept Montgomery **bus** boycott]

[10h] This Irish mobster and leader of the Winter Hill gang carried out attacks against schools during the Boston busing crisis. This mobster got his start as a member of the Killeen gang.

ANSWER: “Whitey” **Bulger** [or James Joseph **Bulger** Jr.]

<American History>

20. One of this author’s plays begins with a stage manager’s assistant expressing surprise that they will perform this man’s work instead of that of any older, well-established playwright. For 10 points each:

[10m] Name this 4th or 5th century CE author who wrote a play in which the king Agnimitra falls in love with the servant dancing girl Mālavikā. He also wrote *The Recognition of Shakuntalā*.

ANSWER: **Kālidās**a

[10e] Kālidāsa wrote *Mālavikā and Agnimitra* and *The Recognition of Shakuntalā* in this ancient Indian language of the *Rāmāyana*.

ANSWER: **Sanskrit** [or **saṃskṛt**am]

[10h] In *Shakuntalā*, King Dushyanta remembers who his wife is after one of these objects is found in the belly of a fish.

ANSWER: **ring**s [or **signet** rings]

<World Literature>

TB. A thinker from this tradition named Iamblichus taught that theurgy was the true way to bring one’s self closer to the emanator of the universe. For 10 points each:

[10m] Name this broad philosophical tradition of the first millennia, which held that all of reality stems from “the One.” This tradition is named in reference to an earlier Greek philosopher.

ANSWER: **Neoplatonism** [or word forms like **Neoplatonist**s or the **Neoplatonic** school; prompt on pagan philosophy]

[10e] Neoplatonic study flourished in Athens and this other ancient city. Neoplatonists such as Philo and Hypatia taught in this Egyptian city, whose massive library was tragically burned down during an invasion.

ANSWER: **Alexandria** [or al-’**Iskandarīyah**; accept Library of **Alexandria**]

[10h] This Neoplatonist philosopher, who wrote the popular logic textbook *Isagoge* (“ISE-uh-GO-gay”), compiled his teacher Plotinus’s (“ploh-TAI-nuss’s”) work into the *Enneads* (“EN-ee-adz”).

ANSWER: **Porphyry** (“POR-fih-ree”) of Tyre [or **Porphyrios**]

<TB (Philosophy)>