

ACF Regionals 2020

Packet P by the Editors

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Tossups

1. Enslaved Africans in this country invented a rice-and-bean pancake called tacu-tacu and made beef heart skewers into a hit street food called *anticuchos*. In this country, Susana Baca revived black musical traditions like *festejo* (“fes-TAY-ho”) dancing from cities like Acarí. In 1655 and 1746, earthquakes in this country’s capital failed to destroy a crucifixion painted by an Angolan slave, so it’s paraded in the procession of the Lord of Miracles. This country’s *Landó* bands play donkey jawbones called *quijadas* (“kee-HA-dahs”) with the *cajón* (“ka-HONE”). This country’s black activist María Elena Moyano was killed by Maoists. Members of this country’s African diaspora moved near the geoglyphic Nazca Lines, and into *pueblos jóvenes* (“PWAY-blose HO-ven-ess”) bearing the logo of ex-President Alberto Fujimori, to escape the Shining Path. For 10 points, name this country governed from Lima.

ANSWER: **Peru** [or Republic of **Peru**; or República del **Perú**]

<Geography>

2. The structures of substances in this form are described by an index developed by J. D. Hanawalt and stored in a type of file called a PDF in the ICDD database. In substances of this form, the Scherrer equation is used to relate size, shape factor, and line broadening at FWHM (“full width half max”). Substances in this form are often analyzed with the Rietveld method. The surface of the standard hydrogen electrode is coated with platinum in this form, called platinum black. Single crystal X-ray crystallography is contrasted with a structure determination method performed on samples in this form. A mixture of charcoal, sulfur, and potassium nitrate in this form is an explosive solid propellant. For 10 points, many solid chemical compounds exist as white forms of what granular substances?

ANSWER: **powders** [or **powdered** materials; or **powder** diffraction; or **powder** diffraction file; accept **gunpowder**; accept **crystallites**; prompt on grains or particles; prompt on granular or particulate or crystalline materials]

<Chemistry>

3. A woman in this novel repeatedly compares a curmudgeonly man’s courtship of her to Sitting Bull visiting the president. Since this novel’s protagonist never reveals the “vulgar” industry of his hometown, E. M. Forster joked it might be “button-hooks” in *Aspects of the Novel*. While wandering in the “gilded oblong frame” of the countryside, the protagonist recognizes a couple on a boating trip and realizes that their “virtuous attachment” is sexual, contrary to the claims of the artist little Bilham. In this novel, the main character’s fiancée sends Sarah Pocock after him when he tries to get her son to stay with Madame de Vionnet instead of returning to Woollett, Massachusetts. Mrs. Newsome sends Lambert Strether to fetch her son Chad from Paris in, for 10 points, what novel by Henry James?

ANSWER: *The Ambassadors*

<American Literature>

4. Only the city of Amathus in this modern-day country refused to join Onesilus (“oh-NEE-sil-us”) after he overthrew his brother for his hesitation in supporting a revolt. The incomplete ending to the Story of Wenamun describes his near-death experience with an angry mob in this modern-day country’s Kingdom of Alashiya. The Knights Templar sold this place, which was captured by Richard the Lionheart, to Guy de Lusignan, who established a crusader kingdom in this modern-day country. Secret negotiations with the Ottomans prior to the Congress of Berlin allowed the British to acquire this modern-day country in which it still retains naval bases. A

1974 pro-*enosis* coup in this country overthrew its leader Archbishop Makarios III (“the third”), prompting its partition. For 10 points, name this Mediterranean island split between Turks and Greeks.

ANSWER: **Cyprus** [do not accept or prompt on “Northern Cyprus”]

<European History>

5. Varactor diodes are devices specifically manufactured so that this quantity is inversely proportional to the thickness of the depletion region. The junction type of this property dominates in reverse bias, while the diffusion type is much larger in forward bias and is proportional to current. This ratio can be calculated by [read slowly] taking the surface integral of “ $D \cdot dA$,” and dividing by the negative of the integral of “ $E \cdot dL$ ” over a closed loop. The product of area, the permittivity of free space, and the dielectric constant, all divided by distance, gives this quantity for two parallel conducting plates. For 10 points, name this ratio whose inverse is elastance, most commonly described as charge divided by electric potential difference and measured in farads.

ANSWER: **capacitance**

<Physics>

6. A woman from this country concluded that God was “the Maker, the Keeper, and the Lover” in a vision of Him with a hazelnut. The author of *Horæ lyricæ* developed the hymnody of this country, which medieval authors called the “dowry of Mary.” A ruler of this country promoted the allegory of Christ as a bird tearing its breast to feed its chicks in the “pelican portrait.” An anchoress from this country told of sixteen “showings” from God in *Revelations of Divine Love*. The “Daily Office Lectionary” ends a text from this country that forbid reserving the Eucharist until reforms led by the author of *Apologia Pro Vita Sua*. The Tractarians revived religious orders in this country’s church, which uses the *Book of Common Prayer*. For 10 points, name this homeland of Julian of Norwich and Anglicanism.

ANSWER: **England** [prompt on United Kingdom or UK; prompt on Britain or British Isles]

<Religion>

7. The F major second movement of this symphony begins with the muted first violins slowly and quietly playing “F [pause] low C, long A [pause] G, F, E,” to which the other muted strings respond with a *forte* staccato eighth-note chord. This symphony’s final movement features a theme that had earlier been used in its composer’s F major *Missa brevis*. Unison C, twice followed by triplet sixteenth-notes back up to C, opens this symphony’s first movement, which quotes its composer’s aria “Un bacio di mano.” The four-note theme “C, D, F, E” appears in this 1788 symphony’s final movement, which closes with a five-voice fugato. The “Great G minor” symphony immediately preceded, for 10 points, what last symphony by Wolfgang Amadeus Mozart that was nicknamed for a Roman god?

ANSWER: **Jupiter** Symphony [or Symphony No. **41** in C major, K. 551 by Wolfgang Amadeus **Mozart**]

<Classical Music>

8. The title character of a play by this author is haunted by the ghost of the archbishop Corneille Brelle and commits suicide after speaking with the jester Hugonin. At the end of another play by this author, a character shouts, “You-me, me-you! What in the hell is he up to?” before hearing the repeated chant of “FREEDOM HI-DAY!” A “man whose name was stolen” urges another character to “call me X” in a play by this author of *The Tragedy of King Christophe*. This playwright, who featured the trickster god Eshu in a postcolonial adaptation of a play that reimagines Ariel and Caliban as Prospero’s slaves, founded an Afro-diasporic literary movement with Léopold Senghor. For 10 points, *Une Tempête* (“oon tom-PET”) is a play by what Martinican playwright and proponent of Négritude?

ANSWER: Aimé **Césaire** (“ay-MAY say-ZAIR”) [or Aimé Fernand David **Césaire**]

<World/Other Literature>

9. In *The Philosophy of Redemption*, Philipp Mainländer wrote that only the individual form of this concept exists, contra its original formulator who describes it solely as “blind” and “cosmic.” A division of the natural world into inanimate matter, plants, animals, and humans is central to a book titled for this concept “in Nature” that greatly influenced Werner Heisenberg’s *Physics and Philosophy*. Sections 2 and 4 of an 1818 book are named for this thing, which is described as identical to Kant’s thing-in-itself. According to that book, the entire world of phenomena, including the human body, is an “objectified” type of this “striving and yearning” thing. For 10 points, name this force that is paired with the world as “idea” or “representation” in the title of a book by Arthur Schopenhauer.
ANSWER: the Schopenhauerian **will** [or **wille**; prompt on *The World as Will and Representation* or *The World as Will and Idea* or *Die Welt als Wille und Vorstellung* or *On the Will in Nature* or *Über den Willen in der Natur*; do not accept or prompt on “idea,” “representation,” or “vorstellung”]
<Philosophy>

10. After his expulsion from university due to membership in the Awakening Society, this man became a correspondent in Europe for the Current Events newspaper under the name John Knight. This man avoided an assassination attempt when he missed his flight on the *Kashmir Princess* en route to the Bandung (“ban-DOONG”) Conference. The official end of mourning for this man during the Qingming (“cheeng-meeng”) festival sparked protests in the Tiananmen Incident. This man agreed to Five Principles of Peaceful Coexistence in the Panchsheel Treaty with Jawaharlal Nehru. John Foster Dulles responded “I cannot” when this participant at the Geneva Accords moved to shake his hand. This man secretly met with Henry Kissinger in 1971 to arrange Richard Nixon’s visit to his country. For 10 points, name this longtime Chinese premier under Mao Zedong.
ANSWER: **Zhou** Enlai
<World History>

11. Results of this operation with respect to a Krylov subspace combine to form a Hessenberg matrix in the Arnoldi method for approximating eigenvalues. A theorem named for this operation states the following: for every x in a Hilbert space H , and for every subspace F of H , there exists a unique y in F such that the distance between x and y is minimized. The direct sum of this operation’s kernel and image gives the space in which it is defined. By definition, it refers to any idempotent linear transformation. In the Gram–Schmidt process, the result of this transformation is subtracted from each input vector to obtain each orthogonal vector. For vectors u and v , this transformation is computed as “ u -dot- v times v -hat over the magnitude of v .” For 10 points, what transformation gives the component of one vector along another?
ANSWER: **projection** [or **projecting** u onto v ; or **proj**; accept orthogonal **projection**]
<Other Science (Math)>

12. A discussion of the idiosyncrasies of daisies in this film immediately precedes a slow pan-out that reveals a massive cemetery of identical gravestones. A series of consecutive point-of-view shots of a general, a psychoanalyst, and a priest are flanked by portraits of Nixon, Freud, and the pope in a scene in this film. A marching band incongruously passes behind a coffin being placed in a hearse after this film’s protagonists meet at a funeral. This film’s long opening shot focuses on the bottom half of a character as he descends some stairs, plays a Cat Stevens record, and pretends to hang himself. For 10 points, name this black comedy directed by Hal Ashby about the romance between a death-obsessed young man and a bohemian elderly woman.
ANSWER: **Harold and Maude**
<Other Arts (Film)>

13. Immigrants of this ethnicity dominated the Socialist Labor Party, which allowed Carter Harrison to win the 1879 Chicago mayoral race by siphoning 20 percent of the vote from Republicans. A society of nobles of this ethnicity purchased the Fisher–Miller land grant to settle these people, who also populated the Texas Hill Country. Sentiment against this ethnicity resulted in the Babel Proclamation mandating the use of English in Iowa and a Supreme Court

case between a schoolteacher and the state of Nebraska. John Law settled these people along their namesake coast in Louisiana. Missouri's Union regiments during the Civil War included many liberal Forty-Eighter refugees of this ethnicity. For 10 points, identify this ethnicity which names a "Bund" that held a 1939 pro-Nazi rally in Madison Square Garden.

ANSWER: **German**-Americans [or **German** American Bund]

<American History>

14. In an ekphrastic novel titled in English for one of these events, the narrator is teased by five nymphs representing the senses before passing through three curtains to reach Queen Eleutherillida. Dante describes an eagle, a siren, and the Biblical Leah during three of these events that occur in *Purgatorio*. Francisco Colonna is the presumed author of an illustrated novel about Poliphilo that is titled for the "strife of love" in one of these events. Book I of Petrarch's *Africa* retells a story originated by Cicero in which Scipio experiences one of these events. *The Divine Comedy* has many characteristics of a medieval genre centered on these events, which includes Chaucer's *Parliament of Fowls* and *The House of Fame*. For 10 points, what sort of event "of the Rood" titles an Old English poem?

ANSWER: **dreams** [or **vision**; accept *Hypnerotomachia Poliphili* or *Poliphilo's Strife of Love in a Dream*; accept synonyms of **strife** or battle until "Purgatorio" is read]

<European Literature>

15. This organism is infected by a virus that produces a 30-kilodalton movement protein, which allows for cell-to-cell movement through this organism. While trying to discover a growth regulator in this organism, Murashige and Skoog inadvertently developed MS medium. A cell line that comes from this organism's Bright Yellow-2 strain was established from a callus. In 1983, Michael Bevan, Richard Flavell, and Mary-Dell Chilton inserted a chimeric gene into this organism, making it the first transgenic plant. A molecule primarily produced by this plant names a type of acetylcholine receptor contrasted with muscarinic receptors. Molting of the leaves of this nightshade is caused by the first discovered virus, a namesake "mosaic" virus. For 10 points, name this nicotine-producing model organism.

ANSWER: **tobacco** [or *Nicotiana tabacum*; or *N. tabacum*; or *Nicotiana benthamiana*; or *N. benthamiana*; accept **tobacco** mosaic virus]

<Biology>

16. John Duncan painted a figure with this name being carried by angels. People make straw-and-lavender dolls of a figure with this name during a festival where they eat dairy and seed cakes. A figure with this name saves a man by giving a wild fox to the King of Leinster. A slave's daughter with this name is fed by a red-eared cow because she vomits up all the food she gets from a druid. This is the name of a goddess of smiths and poetry who invents keening in the *Cath Maige Tuired* ("kah mwee tur-ray"). The February feast day of a saint with this name grew from the Gaelic spring lambing festival Imbolc ("im-MOLG"). The flamekeeping wife of the Fomorian Bres shares this name with a saint who founded the "church of the oak" in Kildare. For 10 points, give the name shared by a daughter of the Dagda and a female patron saint of Ireland.

ANSWER: **Brigid** [accept any variants including **Bridget** or **Bride** or **Breeshey** or **Brideóg** or **Brigantia**; accept "**Mary of the Gaels**"; accept "the **exalted one**"]

<Mythology>

17. John H. Falk described visitors to these places as explorers, facilitators, or rechargers in his 2009 book on identity and the experience of people in these places. The sociologist Tony Bennett wrote a book on the "birth of" these institutions, the study of which was pioneered by Georges-Henri Rivière and Hugues de Varine-Bohan ("oog duh va-REEN bo-ON"), the former director of ICOM. The Isotype pictorial language was developed at one of these places in Vienna headed by Otto Neurath ("NOY-rot"). Arthur Danto most famously described a "world" named for objects contained in these institutions, which have an "aura" according to Walter Benjamin ("VALL-tuh

BEN-yah-meem”). Practitioners of institutional critique like the Guerilla Girls have called for increased curatorial awareness in, for 10 points, what institutions where art and artifacts are displayed?

ANSWER: **museums** [accept any specific types of museums, such as art or history **museums**; accept art **galleries**; prompt on **museology**; prompt on works of **art** or **artworks** by asking “what type of institutions house works of art?”]
<Social Science (Sociology and Other)>

18. Marc Chagall studied at an academy named for one of these objects, which became an avant-garde center under Jean Metzinger (“met-san-ZHAY”). The cover of Julian Barnes’s book of art criticism, *Keeping an Eye Open*, depicts one of these objects belonging to Edgar Degas, whose friend Camille Pissarro painted a landscape featuring a haywain on one of them. A woman resting one of these objects on her arm wears a flower-topped straw hat and smiles at the viewer in a painting by Élisabeth Vigée Le Brun (“vee-JAY luh BRUN”). *The House of the Hanged Man* is one of the works that Cézanne created by applying paint to the canvas with a type of knife named for this object. For 10 points, artists in self-portraits commonly hold what kidney-shaped mahogany boards used to mix color?

ANSWER: **palettes** [or **palette** knife; prompt on **knife** until read by asking “what specific type of knife?”]
<Painting/Sculpture>

19. A poem of this type ends with a man saying “I’m sick at the heart, and I fain would lie down” after realizing that his lover poisoned him with broiled eels. In *Defense of Poesy*, Philip Sidney remarked “I found not my heart moved more than with a trumpet” when hearing a poem of this type set at Chevy Chase. An omen of the “new Moon, With the old Moon in her arms” from a poem of this type provides the epigraph of Coleridge’s “Dejection: An Ode.” In that poem of this type, the title mariner drowns on a mission to Norway. “Lord Randall” and “Sir Patrick Spens” are poems of this type, as is a poem in which the speaker requests a “cambric shirt” from his one-time lover and repeats “Parsley, sage, rosemary, and thyme.” For 10 points, “Scarborough Fair” is what type of narrative verse often set to music?

ANSWER: **ballads** [prompt on **songs**]
<British Literature>

20. After convertibility was suspended following the Battle of Fishguard, this chair of the Bullion Committee drafted the bill that returned Britain to the gold standard. This politician’s first ministry fell after the Lichfield House Compact, in which Daniel O’Connell agreed to ally with the opposition. An attempted assassination of this man led to the formation of the M’Naghten (“muck-NAWT-in”) test for the criminal insanity defense. This prime minister’s opposition to ladies-in-waiting associated with Lord Melbourne provoked the Bedchamber Crisis. Richard Cobden led a “league” that supported an action taken by this prime minister, who laid down the principles of the modern Conservative Party in his Tamworth Manifesto. For 10 points, name this British prime minister who repealed the Corn Laws.

ANSWER: Robert **Peel**
<European History>

21. Differentiation of these cells is regulated by the imprinted lncRNA (“L-N-C-R-N-A”) H19 and the microRNA miR-206. They’re not sperm, but Pax7 defines the multipotent precursors of these cells. Reversine promotes the dedifferentiation of precursors of these cells to satellite cells. Mef2 differentiates these cells, whose subtypes form distinct “anatomical” and “functional” syncytia (“sin-SISH-uh”). Calcium-induced calcium release was discovered in the terminal cisternae of these non-nerve cells, whose T-tubules contain L-type calcium channels that stimulate ryanodine receptors. Calsequestrin buffers the specialized endoplasmic reticulum in these cells, whose “striated” subtypes cycle “crossbridges” in the “sliding filament” model. For 10 points, name these contractile cells whose hypertrophy is the goal of strength training.

ANSWER: **muscle** cells [or **myocytes**; accept **myogenesis**; accept skeletal **muscle** cells or cardiac **muscle** cells or cardi**myocytes** or smooth **muscle** cells; prompt on cardiac or heart cells by asking “what kind of tissue is the heart made of?”; prompt on mysatellite cells]

<Biology>

Bonuses

1. This composer drew on concepts introduced in his book *The Lydian Chromatic Concept of Tonal Organization* in albums like *Jazz in the Space Age*. For 10 points each:

[10] Name this jazz composer who rarely played an instrument while acting as bandleader. This composer left the U.S. for Scandinavia in 1964, where he explored his concept of the “vertical form” in compositions like *Othello Ballet Suite*.

ANSWER: George **Russell**

[10] Russell’s composition “Concerto for Billy the Kid” features a solo by this pianist known for his standard “Waltz for Debby.” This musician experimented with piano overdubbing with his album *Conversations with Myself*.

ANSWER: Bill **Evans** [or William John **Evans**; do not accept or prompt on “Gil Evans”]

[10] Russell’s modal theories influenced this 1959 Miles Davis album. Bill Evans played piano on this album, which opens with the track “So What.”

ANSWER: **Kind of Blue**

<Other Arts (Jazz)>

2. This poet praised artists who “from the womb, remembered the soul’s history / Through corridors of light” in his poem “I Think Continually of Those Who Were Truly Great.” For 10 points each:

[10] Name this poet who was part of a group of poets in the 1930s led by W. H. Auden that was derisively nicknamed “MacSpaunday” after its main members: Louis Macneice, this poet, Auden, and Cecil Day-Lewis.

ANSWER: Stephen **Spender**

[10] In Spender’s novel *The Temple*, the protagonist explores his bisexuality during a summer in this country. Erika Mann escaped this country by marrying W. H. Auden, who wrote about a war begun by it in “September 1, 1939.”

ANSWER: **Germany**

[10] Spender wrote about Auden’s love of Richard Wagner (“VOG-ner”), “who drives out every thought but tears,” in a poem titled for one of these events. The line “He was my North, my South, my East and West” appears in an Auden poem titled for this sort of event that issues commands like “Pack up the moon.”

ANSWER: **funerals** [accept “Auden’s **Funeral**” or “**Funeral** Blues”]

<British Literature>

3. Pioneers of Reform Judaism at this city’s Beth Elohim Congregation like Isaac Harby attempted to introduce sermons in English. For 10 points each:

[10] Name this city that hosted America’s largest Jewish community until the 1830s. A company of Jewish volunteers from King Street defended this city under William Moultrie and Benjamin Lincoln during the revolution.

ANSWER: **Charleston**

[10] During the Civil War, this Union General issued General Order No. 11 expelling all Jews from the Department of the Tennessee. This victor at Fort Donelson and Vicksburg received Robert E. Lee’s surrender to end the war.

ANSWER: Ulysses S. **Grant**

[10] This Jewish politician, who immigrated to Charleston as a child, served as Confederate Secretary of State, a role in which he lobbied for British and French recognition.

ANSWER: Judah **Benjamin**

<American History>

4. This transformation is described as “diffusionless” because it only involves a change in crystal structure, rather than the large-scale migration of atoms. For 10 points each:

[10] Name this well-studied phase transition in metallurgy that results from cooling below the *M*-sub-*s* line on a TTT diagram. The [emphasize] *reverse* of this process causes nickel titanium alloys to “remember” their past shape.

ANSWER: **martensitic** transformation [or austenite to **martensite** transformation; prompt on answers that mention **austenite** but not martensite; do not accept or prompt on “martensite to austenite transformation”]

[10] The martensitic transformation is usually induced to harden this alloy. The Bessemer process for producing this alloy was supplanted in the 1900s by electric arc furnaces and basic oxygen furnaces.

ANSWER: **steel**

[10] Since the martensitic transformation in steel is diffusionless, it does not change this quantity, which is typically plotted on the x-axis of steel phase diagrams. By definition, this quantity is higher for cast iron than for steel.

ANSWER: percentage of **carbon** [accept percentage of **carbon** by weight or mass; accept (mass or weight or mole) fraction of **carbon**; accept answers indicating **carbon** content or **carbon** composition or amount of **carbon**; prompt on answers with **C** in place of “carbon”]

<Other Science (Engineering)>

5. Frank O’Hara avowed “I would rather look at you than all the portraits in the / world / except possibly for the *Polish Rider* occasionally” in a poem about “having [this product] with you.” For 10 points each:

[10] Name this product. Kenneth, a New York School poet whose last name is a homophone for this product, punned on that fact in his “The Pleasures of Peace” and wrote “Variations on a Theme by William Carlos Williams.”

ANSWER: **Coca-Cola** [or **Coke**; accept Kenneth **Koch**; prompt on **soda** or soft **drinks**]

[10] Robert Hollander’s Coca-Cola-themed poem “You Too? Me Too – Why Not? Soda Pop” has this attribute, which is shared by [emphasize] *John* Hollander poems like “Swan and Shadow” and by Gregory Corso’s “Bomb.”

ANSWER: **concrete** poems [or they **look** like or are **shaped** like their topic; or equivalents; accept **visual** poetry, **pattern** poetry, or **shape** poetry]

[10] James Dickey talked about being nicknamed “Jingle Jim” while working as a copywriter for Coca-Cola in his “Art of Poetry” interview with a “review” named for this European capital city. James Baldwin settled in this city’s Left Bank area.

ANSWER: **Paris** [accept *The Paris Review*]

<American Literature>

6. Iron firms known as “hüttenzechen” (“HYOO-tin-TSEKH-in”) purchased mines of this resource to vertically-integrate steel production. For 10 points each:

[10] Name this resource mined in the Ruhr that fueled furnaces for German industrialization.

ANSWER: **coal**

[10] This family-owned German industrial giant based in the Ruhr city of Essen manufactured armaments for German militarization, including the 420-millimeter “Big Bertha” howitzer used in the siege of Liège.

ANSWER: Friedrich **Krupp** AG

[10] Most of France’s iron deposits were located in this region, which names the cross used as a symbol by the Free French. A duke of this region became Holy Roman Emperor after marrying the subject of the Pragmatic Sanction.

ANSWER: **Lorraine** [or **Lothringen**; accept Cross of **Lorraine**]

<European History>

7. The relationship between this quantity and genotype is visualized on adaptive landscapes. For 10 points each:

[10] Name this quantity that describes the propensity of an organism to pass on its genes.

ANSWER: Darwinian **fitness**

[10] This quantity is the difference between the mean fitness and the maximum fitness within a population. Muller’s ratchet describes how this quantity accumulates in populations of organisms that undergo asexual reproduction.

ANSWER: genetic **load** [accept deleterious mutation **load**; prompt on answers referring to the number of or accumulation of deleterious or harmful **mutations** within an organism]

[10] Genetic load can also accumulate as a result of this phenomenon, which increases the homozygosity of a population. The accumulation of deleterious recessive mutations as a result of this phenomenon within a population is called its namesake depression.

ANSWER: **inbreeding** [or **inbreeding** depression]

<Biology>

8. A smoking pipe was added to this image for a piece that the artist Sapeck created as part of the short-lived “Incoherents” art movement of the 1880s. For 10 points each:

[10] Name this image that another artist scribbled on for a work of appropriation art that was published in *391* magazine with the caption *L.H.O.O.Q.* (“L-ahsh-O-O-koo”)

ANSWER: the ***Mona Lisa*** [or *La Joconde*; or *La Gioconda*]

[10] This artist drew a mustache on a reproduction of the *Mona Lisa* to create *L.H.O.O.Q.* His ready-made *Fountain* consists of a urinal labelled with the name “R. Mutt.”

ANSWER: Marcel **Duchamp**

[10] This artist parodied *L.H.O.O.Q.* with *The Avant-Garde Doesn't Give Up*, which depicts a picture of a schoolgirl with a drawn-on mustache. This Danish painter of *Stalingrad* led the COBRA movement with Karel Appel and collaborated with Guy Debord (“ghee duh-BOR”) on *Mémoires* (“maym-WAHR”).

ANSWER: Asger **Jorn** (“ESS-ker YORN”)

<Painting/Sculpture>

9. The Stoic Cleanthes drew an allegory of *Logos* from this plant, which has been variously identified as snowdrop, rue, and amaranth, though Theophrastus favored wild black garlic in his *Historia Plantarum*. For 10 points each:

[10] Name this magical herb given to Odysseus by Hermes to protect him from Circe’s magic. Homer claims that this plant has a black root and a white flower and can only be picked by the “deathless gods.”

ANSWER: **moly**

[10] Another candidate for the identity of moly is this hallucinogenic plant, whose root supposedly resembles a human and kills all who hear its cry. This plant’s alleged power to boost fertility inspired a play by Niccolò Machiavelli.

ANSWER: **mandrake** [or *la mandragola*; or *Mandragora*]

[10] While mandrakes are real, this plant from Slavic and Baltic folklore isn’t. This plant blooms only on Kupala Night, or midsummer, and allows its finder to understand the animal language. Seeking this plant is a euphemism for sex in the woods.

ANSWER: **fern flower** [or **fern seed**; or **fern in bloom**; prompt on **ferns** or specific ferns; accept **kwiat paproci** or **zlatého kapradí** or **paparčio žiedas** or **tsvetók páporotnika** or similar]

<Mythology>

10. In most states east of the Mississippi, the legal right to use this resource is determined by riparian claims. For 10 points each:

[10] Name this resource that, in the United States, can be harnessed for use in irrigation if one owns property abutting its source. The Commerce Clause allows Congress to regulate navigable areas covered by this thing.

ANSWER: **water** [accept fresh **water**; accept salt **water**; accept bodies of water like **rivers** or **lakes**]

[10] Because of its scarcity in the western United States, water rights west of the Mississippi are determined by a doctrine with this two-word name rather than by riparian claims. This doctrine states that a party has a right to a water source if they are the first to divert the water to productive ends.

ANSWER: **prior appropriation** doctrine

[10] Exceptions to the prior appropriation doctrine are often made to grant water rights to the residents of these places, which were central to *Winters v. United States*. Title 25 of the Code of Federal Regulations deals with these places and includes regulations related to a certain National Gaming Commission.

ANSWER: Indian **reservations** [accept Native American **reservations**; accept indigenous **reservations**]
<Social Science (Political)>

11. Trucial Scouts recruited from a neighboring country defended this country's Buraimi Oasis from an invasion.
For 10 points each:

[10] Name this country that fought a secessionist insurgency in the Dhofar ("THOUGH-far") region. Ghalib Alhinaï rose up to protect the lands of his Imamate in the interior of this country from annexation in the Jabal Akhdar War.

ANSWER: **Oman**

[10] Sultan Said bin Taimur's reign was propped up by this country's Special Air Service, which fought in the Dhofar Rebellion and Jabal Akhdar War. This country's MI6 bureau probably helped overthrow Sultan Said.

ANSWER: **United Kingdom** [or **UK**; or Great **Britain**; prompt on **England**]

[10] This sultan, who died in early 2020, overthrew his father Said bin Taimur in a 1970 coup. This sultan defeated the Dhofar Rebellion and replaced the Indian rupee with the Omani rial as his country's currency.

ANSWER: Sultan **Qaboos**

<World History>

12. This novel's protagonist, who is said to have been "much experienced in the art of confidences," believes that the "role I am to play" is "the unraveler." For 10 points each:

[10] Name this novel, whose protagonist is a gold prospector named Walter Moody. A council of twelve men who each represent the twelve signs of the zodiac appears in this novel.

ANSWER: *The **Luminaries***

[10] Eleanor Catton's Booker Prize-winning novel *The Luminaries* is set in this country. Keri Hulme's Booker Prize-winning novel *The Bone People* was influenced by its Māori culture.

ANSWER: **New Zealand** [or **Aotearoa**]

[10] Catton was born in this country, in which *The Luminaries* won one of its national literary awards for "English-language Fiction." Anne Carson is a poet from this country.

ANSWER: **Canada** (*The Luminaries* won the Governor General's Award for English-language fiction.)

<World/Other Literature>

13. These entities are specified by the lattice parameters, which include three lattice vectors and three interaxial angles. For 10 points each:

[10] Identify these smallest repeating components of a crystal that have the same symmetry properties as the full crystal.

ANSWER: **unit cells**

[10] This is the lattice system of a crystal whose unit cells' three lattice vectors are of equal lengths and are orthogonal to each other.

ANSWER: **cubic** [accept specific **cubic** crystal systems like face-centered **cubic**; prompt on **bcc** or **fcc** by asking "what does that stand for?"]

[10] Crystallographic symmetries can be described using one of these 230 groups, which, like point groups and plane groups, are specified using Hermann–Mauguin ("mo-GAN") notation. These groups are the three-dimensional equivalent of wallpaper groups.

ANSWER: **space** groups

<Chemistry>

14. This theme originally appeared in the first movement of the cantata *Herminie* ("air-mee-NEE"), which was written two years before it was reused by its composer for another work. For 10 points each:

[10] Name this theme, which is introduced in that work by the flutes and violins playing a long G, then rising to a quarter note C, and then returning to that G on a dotted quarter-note before rising again to an eighth-note E.

ANSWER: **idée fixe** (“ee-day FEEKS”) [prompt on any reasonable answer that contains the notion of a melody that represents a woman or Harriet Smithson in *Symphonie fantastique*]

[10] The *idée fixe* represents a beloved woman based on the actress Harriet Smithson in *Symphonie fantastique*, which was written by this French Romantic composer.

ANSWER: Hector **Berlioz**

[10] At the end of this movement of *Symphonie fantastique*, a solo clarinet reprisal of the *idée fixe* is interrupted by a *fortissimo* G minor chord that represents a “fatal blow.”

ANSWER: “**March to the Scaffold**” [or “**Marche au supplice**”]; accept the **fourth** or **penultimate** movement of *Symphonie fantastique* or equivalent descriptive answers]

<Classical Music>

15. The trees used in this method are closed if each branch within it contains a contradiction. For 10 points each:

[10] Name this proof procedure used for testing statements in first-order logic. When using this method, applying the disjunction or material conditional operator causes the central tree to branch.

ANSWER: method of analytic **tableaux** [or method of semantic **tableaux**; accept any answer indicating the use of a **tableau**; do not accept or prompt on “table” or “Young tableaux”]

[10] The analytic tableaux method is used to test inferences for this property, which comes in semantic and proof-theoretic types. A proposition has this property if the truth of the premises makes it impossible for the conclusion to be false.

ANSWER: **validity** [or being **valid**]

[10] A branch in an analytic tableau becomes closed when it contains both a statement and this operation on that statement. This operation is sometimes written as a tilde, and applying this operation to a true statement renders it false.

ANSWER: **negation** operator [or **not** operator; or logical **complement**]

<Philosophy>

16. This colony’s thriving shipbuilding industry exported its namesake sloops built from this island’s prized cedar. For 10 points each:

[10] Name this island where the *Sea Venture* was shipwrecked en route to supplying Jamestown. William Strachey’s eyewitness report of the wreck on this island is thought to have inspired *The Tempest*.

ANSWER: **Bermuda**

[10] This man reached Jamestown on the *Sea Venture*, though his wife Sarah and infant daughter Bermuda died while stranded on the island. This tobacco planter later married Pocahontas.

ANSWER: John **Rolfe**

[10] Bermudan sailors “raked” this good from the Turks and Caicos Islands on sloops. English towns with the suffix “-wich” were often known for harvesting this good, especially in the county of Cheshire.

ANSWER: **salt**

<Other History>

17. The protagonist of a novel by this author decides not to continue a Dickens-inspired journey after realizing that doing so would destroy the mental image he’s created of his destination. For 10 points each:

[10] Name this French author who wrote of the aesthete Jean des Esseintes’s (“zhahn dayz eh-SANT’s”) decision not to travel to London in the 1884 novel *À rebours* (“ah ruh-BOOR”), which has been translated as *Against the Grain* and *Against Nature*.

ANSWER: Joris-Karl **Huysmans** (“weese-MONS”)

[10] Ferdinand does not move to London with his English-history-obsessed boss in a Louis-Ferdinand Céline novel titled for a “journey to the end of” this time period. Elie Wiesel’s (“ELL-ee vee-ZELL’s”) Holocaust memoir is titled for this time period.

ANSWER: **night** [or **nuit**; accept *Voyage to the End of the **Night*** or *Voyage au bout de la **nuit*** or *La **Nuit***]

[10] Several thinkpieces on “fake news” have discussed how this author did not even travel to London when he worked as a London foreign correspondent, instead inventing accounts of events like the 1861 Tooley Street Fire. This German author wrote a realist novel whose title woman marries the social climber Instetten.

ANSWER: Theodor **Fontane** (“fon-TAH-nuh”) (The novel is *Effi Briest*.)

<European Literature>

18. This inventor of M-theory said that it could stand for “membrane” or “mystery,” but a colleague suggested it was because “M” was the first letter of this physicist’s last name turned upside down. For 10 points each:

[10] Name this physicist at the Institute for Advanced Study who won a Fields Medal in 1990 for contributions to low-dimensional topology and Morse theory.

ANSWER: Edward **Witten**

[10] Witten proposed M-theory to unify five versions of this type of theory, which were improvements on S-matrix theory and a bosonic theory of the vibrations of the namesake objects.

ANSWER: **string** theory [accept super**string** theory]

[10] Extra dimensions in superstring theory are postulated to take the form of these surfaces. They are often defined as a compact Kahler manifold with a vanishing first Chern class.

ANSWER: **Calabi–Yau** manifolds

<Physics>

19. The tenth book of this text was the major source for Lallu Lal’s early Hindi novel *Prem Sagar*, named for the “ocean of love” between Krishna and the gopi milkmaid Radha during the *Rasa lila* dance. For 10 points each:

[10] Name this Sanskrit text that inspired the 16th-century Ekasarana Dharma movement in Assam, led by its prolific commentator Sankardeva. The classical dance *Kathak* drew from this text, which is the main non-*Gita* text of ISKCON.

ANSWER: **Bhāgavata Purana** [or **Bhāgvata Purana**; *Śrīmad Bhāgavata Mahā Purāṇa*; or *Śrīmad Bhāgavatam*; prompt on **Puranas** or **Mahapuranas**; do not accept or prompt on the “*Devi-Bhagavata Purana*” or “*Bhagavad Gita*”]

[10] The *Bhāgavata Purana* contains an early reference to this concept, though its focus on equality and love helped inspire the bhakti movement. This ancient system divided people into *Shudras*, *Vaishyas*, *Kshatriyas*, and *Brahmins*.

ANSWER: Indian **caste** system [or **varnas** or **four divisions**; accept the related but more complex **jāti**; prompt on **classes** or social **stratification** or similar answers]

[10] The Dalit Buddhist leader B. R. Ambedkar led the burning of this Dharmasāstra “law” text, which outlines the “rules of action” for the four castes. This text contrasts “*svadharma*” relative to one’s station and universal “*sanātana dharma*.”

ANSWER: *Laws of **Manu*** [or *Law Code of **Manu***; or ***Manusmṛti***; or ***Manusmruti***; or ***Mānava-Dharmasāstra***]

<Religion>

20. In September, unexpected turmoil in this market led the Federal Reserve Bank of New York to inject hundreds of billions in loans, the first such intervention since the financial crisis. For 10 points each:

[10] Name this type of short-term loan in which government securities are bought and sold on an often overnight basis. The Fed has carried out multiple additional injections to stabilize and support the market for these loans.

ANSWER: **repo** loans [or **repurchase** loans]

[10] The Fed argues its overnight funding operations are [emphasize] *not* a return to this policy. The Fed undertook this policy during the recession, increasing the money supply by 4 trillion dollars through purchases of long-term securities.

ANSWER: **quantitative easing** [or **QE**; prompt on **asset repurchase**]

[10] The Fed began its first round of quantitative easing in this year, the same year that Washington Mutual and Lehman Brothers declared bankruptcy. The Troubled Asset Relief Program, or TARP, was created in this year.

ANSWER: **2008** [or **'08**]

<Current Events>

21. Saint Euphrosyne disguised herself as a man to enter a monastery in this pentarchic city, where Popes Demetrius I (“the first”) and Theophilus called councils to condemn the native theologian Origen. For 10 points each:

[10] Name this city whose 4th-century bishop Athanasius promoted the Nicene Creed against Arianism. Saint Catherine was martyred in this Egyptian city, where the Coptic Orthodox Pope presides over Saint Mark’s Cathedral.

ANSWER: **Alexandria** [or al-’**Iskandariyya**; or **Rakote**; accept nicknames like “**Mediterranean’s Bride**” or “**Pearl of the Mediterranean**”]

[10] The Alexandrian rite omits the Antiochene liturgy named for this saint, which is the main liturgy used by Syriac Orthodox, Syriac Catholics, Malankara Orthodox, and Syro-Malankara Catholics. This saint’s “infancy gospel” recounts the birth of Mary and contains the “trial by bitter water” shown in a Castelseprio fresco.

ANSWER: Liturgy of Saint **James** [or **Jacobite** Liturgy; accept the Gospel of **James** or the Protoevangelium of **James** or the Infancy Gospel of **James** or the Revelation of **James**]

[10] James and Jesus’s apocryphal brother Thomas spread the rival East Syriac rite among this predominantly Christian Mesopotamian ethnic group. This stateless ethnic group dances the *khigga* and celebrates New Year with the Kha b-Nisan festival.

ANSWER: **Assyrian** people [or **Sūrayĕ**; or **Sūryōyĕ**; or **Atūrayĕ**]

<Religion>