

2020 ACF Winter
Packet M by Editors 2

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Tossups

1. Farmers of this crop had to follow practices set by WINBAN when working for the company Geest. Lee Christmas and “Machine Gun” Molony were recruited by a Russian-born businessman who made his fortune from this crop with Cuyamel. The “Ten Years of Spring” expanded labor rights for harvesters of this crop, including by redistributing land through Decree 900. Panama disease wiped out much of this crop’s Gros Michel (“grow mee-SHELL”) variety in the 1950s. A company that primarily exported this crop was nicknamed “El Pulpo” and lobbied for the overthrow of Jacobo Árbenz in Operation PBSuccess in Guatemala. For 10 points, name this crop harvested by the United Fruit Company that appears in a derisive nickname for corrupt Central American “republics.”

ANSWER: **bananas** [accept **banana** republics; prompt on fruits; accept ***Musa***]

<World History>

2. Defining the adjectives “autological” and “heterological” is central to one of these constructs named for Grelling and Nelson. In discussing one of these constructs, Timothy Williamson has claimed that unknowable sharp boundaries exist between vague terms. The “student’s elimination argument” is a claim made about another of these constructs that centers around a teacher’s announcement of a surprise test. The removal of a grain of sand from a heap gives rise to one of these constructs named “sorites” (“so-RYE-teez”). The set of all sets that do not contain themselves is central to one of these constructs named after Bertrand Russell. For 10 points, what logically self-contradictory statements include “This sentence is a lie?”

ANSWER: **paradoxes** [accept **antinomy**, Grelling–Nelson **paradox**, sorites **paradox**, **paradox** of the heap, surprise test **paradox**, hangman **paradox**, or Russell’s **paradox**; prompt on philosophical problem or thought experiment; do not accept or prompt on “Zeno’s paradoxes”]

<Philosophy>

3. A character created by this author encourages his guests to “become patterns of virtue and wisdom to all the young people of the age!” At the end of a story by this author, a vase containing a 55-year-old rose given to the title character by Sylvia Ward is broken. In a story by this author, a character’s husband screams her name, then her pink ribbon falls from the sky. Three men fight over Widow Wycherley (“WITCH-er-lee”) after the title character of a story by this author gives them water from the Fountain of Youth. A story by this author ends by noting that “no hopeful verse” is written on the title character’s tombstone. This author wrote a story about a man who finds Goody Cloyse and his wife Faith among the attendees of a satanic ritual. For 10 points, name this author of “Dr. Heidegger’s Experiment” and “Young Goodman Brown.”

ANSWER: Nathaniel **Hawthorne** [or Nathaniel **Hathorne**]

<American Literature>

4. Soldiers who fought for this cause were nursed by a woman nicknamed “Hurricane Jessie.” While exiled in London, a leader of this cause complained about the British Foreign Office opening his private letters. Henry Sanford was sent by Lincoln to approach a leader of this cause to be the leader of the Union Army. Felice Orsini attempted to assassinate Napoleon III due to his supposed opposition to this cause, which Napoleon III later allied himself with through the Plombières Agreement. A secret society nicknamed the “charcoal burners” fought for this cause before being usurped by a movement led by Giuseppe Mazzini. For 10 points, name this nationalist goal that was accomplished by figures such as the Count of Cavour and Giuseppe Garibaldi.

ANSWER: **Italian unification** [accept descriptions like the **creation** of **Italy**; accept **Risorgimento**; accept **Italian independence**; prompt on Italian **nationalism**]

<European History>

5. According to legend, an artist hit one of these animals over the head with his palette after it attacked a lifelike canvas at Wentworth Woodhouse. That artist painted one of these animals being attacked by a lion on an octagonal copper plate. A French artist cross-dressed in order to perform preliminary studies for a large painting depicting these animals. George Stubbs painted a portrait of one of these animals named *Whistlejacket*. Rosa Bonheur (“bon-URR”) painted many of these animals at a *Fair*. Franz Marc created several paintings of these animals in blue. For 10 points, Wassily Kandinsky painted a man on top of what animal in *Der Blaue Reiter* (“dair BLAO-uh RYE-tuh”)?

ANSWER: **horses** [or *The **Horse** Fair*; or *Blue **Horses***; or *Blue **Horse** I*; accept **equines**]

<Painting/Sculpture>

6. It’s not related to uterine cancer, but a disease in pregnant women in which this organ is overactivated by beta-HCG is termed GTT. Over half of the ovaries’ mass is made of tissue similar to that of this organ in struma ovarii. Diseases of this organ may be indicated by Hürthle (“HEERT-luh”) cells. PTU is preferred to methimazole to treat a disease of this organ during the first trimester. A disease of this organ can cause pretibial myxedema (“mix-uh-DEE-ma”), in which skin above the shin takes on a red-orange inflamed appearance, as well as a namesake orbitopathy, in which the patient’s eyes bulge out. Cancer of this organ can be treated with radioactive iodine therapy if levels of TSH are high enough. This organ is hyperactive in Graves’ disease, and it becomes swollen in a goiter. For 10 points, name this endocrine gland in the neck that produces thyroxine.

ANSWER: **thyroid** gland

<Biology>

7. Mitch Rowland plays a guitar solo on a song by this artist about a person who “lives in daydreams with me.” This artist of “She” plays the piano while the room floods in a song whose chorus contains the lines “What if I’m down? / What if I’m out? / What if I’m someone you won’t talk about?” This artist’s breakup with Camille Rowe inspired much of an album whose cover features this artist with a pink shirt viewed through a fisheye lens. “Falling” appears on an album by this artist with a lead single which claims that the title “high” tastes like “strawberries on a summer evenin’.” The 2019 album *Fine Line* contains this artist’s song “Watermelon Sugar.” For 10 points, name this former One Direction member behind “Sign of the Times.”

ANSWER: Harry **Styles**

<CE/Geo/Other/Pop Culture>

8. A fictional poem titled for this country that is signed “London, July 1955” is found in an A. E. Housman book by a university student. A nurse from this country covers up the murders of three men in *My Sister, the Serial Killer*. Madame Koto owns a bar in a novel from this country, where the spirit child Azaro struggles to stay in the realm of the living. A priestess brings Ezinma to visit the Oracle in this country, the birthplace of the author of *The Famished Road*. In a novel set in this country, Amalinze the Cat is defeated by a yam farmer who kills his adoptive son Ikemefuna. For 10 points, Umuofia is located in what home country of Okonkwo, the protagonist of *Things Fall Apart* by Chinua Achebe?

ANSWER: **Nigeria** [or Federal Republic of **Nigeria**]

<World/Other Literature>

9. Ignatius of Constantinople led the “Third Finding” of this saint’s relics, which alternately lie in Amiens (“ahm-YEN”) Cathedral or the Umayyad Mosque. Slavs set bonfires on the eve of this saint’s nativity, which coincides with Kupala, the pagan Midsummer festival. Mary and this patron saint of Québec flank Jesus in a Byzantine Deësis (“dee-EE-siss”) motif. This chief prophet of Mandaism inspired the main ritual for godparents. Penitents wearing hairshirts may cite Matthew chapter 3’s description of this saint wearing camel’s hair. In the Synoptic Gospels, this saint fulfills the Book of Isaiah’s prophecy of a “voice crying out in the wilderness,” where he eats honey and locusts. Herod Antipas beheads this saint at the behest of Salome. For 10 points, what prophet proclaims Jesus’s arrival and immerses him in the River Jordan?

ANSWER: Saint **John** the Baptist [accept **Jean**-Baptiste or **Yahya** or **Jonas** or **Juan** or **Ivana**-Kupala or **Iōánnēs** ho baptistēs or **Yohanān** Shlihā; accept **John** the Forerunner or the Prophet **John** or **John** the Immerser; accept the *Mandaean Book of John*]

<Religion>

10. For ribosome profiling, this technique is performed at 4 degrees Celsius to harvest cells before digestion and phenol–chloroform extraction. This technique is prefixed with “cyto” in a method for preparing histopathology slides. Qiagen’s (“KY-uh-jen’s”) RNeasy extraction kit includes columns for this technique, whose separation power is improved by Percoll and Ficoll media. This technique is often performed both before and after adding a wash buffer. Sucrose and cesium chloride can create density gradients in this technique, which can fractionate blood. This technique creates a major lab safety hazard if it isn’t carefully balanced. Svedberg units derive from this technique, whose rotor speed can be measured in RCF or RPM. For 10 points, what technique causes pellet sedimentation by spinning samples around?

ANSWER: **centrifugation** [or **centrifuge**; accept specific types like micro**centrifugation** or ultra**centrifugation** or using a cyto**centrifuge** or **Cytospin**; accept **sedimentation** or **pelleting** until read; prompt on **incubation** or **washing** samples or **extraction** or **spinning** or **spin** columns or **fractionation** until read by asking “as part of a protocol using what specific apparatus?”]

<Chemistry>

11. They’re not Gauls, but during a war against these people, a general with the epithet “raven” unusually showed clemency towards a band of mutinous soldiers and even helped pass the Lex Genucia to satisfy their demands. Publius Decius Mus was awarded the Grass Crown for his heroics in escaping from a siege by these people unscathed. These people inspired Rome to borrow a system of military infantry formation called maniples. The city of Capua submitted to Rome to protect itself against the incursion of these Oscan-speaking people. Rome was humiliated after these people forced thousands of Roman soldiers to symbolically pass under the yoke at the Caudine Forks. For 10 points, name these people that the Roman Republic defeated in a series of wars to take control of most of Italy.

ANSWER: **Samnites** [accept **Samnite** Wars; accept people of **Samnium**; prompt on **Campanians**]

<Other History>

12. This brand developed a metal chain-mail named “Oroton” for a Paris Opera exposition. This brand began after its founder split from Genny, Callaghan, and Complice over the usage of leather. This brand’s founder had his friend Naomi Campbell model a dress covered in Andy Warhol’s Marilyn Monroe silkscreens. This brand’s “THAT dress” was held together by large, gold safety pins and was modeled by Elizabeth Hurley. A low-cut green silk chiffon dress by this brand was worn at the 2000 Grammy’s by Jennifer Lopez. In 1997, serial killer Andrew Cunanan shot this brand’s founder in his Miami Mansion. Medusa’s head is the logo of, for 10 points, what Italian fashion house whose head designers include Donatella and her late brother Gianni?

ANSWER: **Versace** (“ver-SAH-chay”) [accept Gianni **Versace** S.r.l or Gianni **Versace** Subsidiary]

<Other Arts>

13. In this play, a conversation reveals that the needs of “a helpless mother and two little brothers” kept apart a pair of former lovers who are described as “two on the same piece of wreckage.” A character in this play hides under a table during a game of hide-and-seek and imagines that a “rich old gentleman had fallen in love” with her in conversation with a childhood friend who mends her Neapolitan fisher-girl costume. In this play, macaroons are sneakily offered to a syphilitic doctor who helps delay the opening of a letterbox. In this play, a trip to Italy saves the life of a bank manager. The protagonist of this play forges her father’s signature for a loan, causing her to be blackmailed by Krogstad. For 10 points, name this play about Nora Helmer, written by Henrik Ibsen.

ANSWER: *A **Doll’s House*** [or *Et **Dukkehjem***]

<European Literature>

14. A 2019 book titled for this concept introduced the term “homoploutia” to describe a recent trend of two measures consolidating in concert with assortative mating; that book by Branko Milanović is titled for this concept *Alone*. This is the first title concept of a 1942 book that uses statistics of total output to answer “No” to the question “Can [this concept] survive?” An “anti-[this concept]” lecture series is hosted by David Harvey. With socialism and democracy, this concept titles a Joseph Schumpeter book that introduced the term “creative destruction.” This economic system causes alienation and commodity fetishism according to a book analyzing its exploitation of labor. For 10 points, name this economic system characterized by private ownership of the means of production.

ANSWER: **capitalism** [accept **Capitalism**, *Alone: The Future of the System That Rules the World*; accept *The Anti-Capitalist Chronicles*; prompt on *Capital* or *Das Kapital*; prompt on *Capitalism, Socialism and Democracy* by asking “which title concept?”]

<Social Science>

15. Over finite-dimensional, algebraically closed vector spaces, a property named for a suffixed form of this word is equivalent to semi-simplicity. A matrix is expressed as the sum of a nilpotent matrix and a matrix described by a suffixed form of this word in Jordan decomposition. An n -by- n matrix has that property named for this word if the sum of the dimensions of its eigenspaces equals n , or if it has n linearly independent eigenvectors, by the spectral theorem. Only matrices described by this word are both upper-triangular and lower-triangular. The trace of a matrix is the sum of elements along the “main” one of these things, which is made up of the values where the row and column indices are equal. For 10 points, the identity matrix only has non-zero values along what construct that runs from the top left to bottom right?

ANSWER: **diagonal** [or word forms; accept **diagonal** matrices; accept **diagonalizable**; accept main **diagonal**; accept **non-defectiveness** or **defectiveness**]

<Other Science>

16. In this city, Fannie Peck founded a Housewives' League for Black-owned businesses, and Chokwe Lumumba planned to liberate Mississippi as the "Republic of New Afrika." *The Origins of the Urban Crisis* outlines the racist "slum clearance" of this city's Black Bottom. A 1963 "Walk to Freedom" to a Martin Luther King speech in this city was led by C. L. Franklin, father of Aretha. After the Montgomery bus boycott, Rosa Parks moved to this city to assist Congressman John Conyers. This city's police killed Black teenagers at the Algiers Motel in the "12th Street Riot" in 1967. Wallace Fard Muhammad founded the Nation of Islam in this city, where the Gordy family signed Marvin Gaye at Motown Records. For 10 points, what Rust Belt city went bankrupt in 2013 after the decline of the auto industry?

ANSWER: **Detroit**, Michigan [accept **Motown** or **Motor City** until "Motown" is read]
<American History>

17. Untuned percussion accompanies Latin rhythms in the finale of a piece of this type that was Philip Glass's first full non-theatrical work, and which Glass later followed up by writing an "American" version of an earlier set of pieces of this type. The heavy use of unisons, sevenths, and seconds represent the street address of the Curtis Institute in a piece of this type by Jennifer Higdon. Erich Korngold used themes from his film scores in a D major piece of this type written for the Lithuanian-Jewish virtuoso Jascha Heifetz ("YA-sha HIGH-fets"). A Baroque set of pieces of this type was accompanied by sonnets and included in *The Contest Between Harmony and Invention*. Vivaldi's *Four Seasons* exemplify, for 10 points, what type of piece where an orchestra accompanies the highest-pitched string instrument?

ANSWER: **violin concerto** [prompt on concerto]
<Classical Music>

18. The claws of these beasts change color after touching poison. The Throne Room of Knossos contains frescoes of this beast, which appears in an Andalusian bronze in Pisa Cathedral. In medieval Alexander Romances, Alexander makes these mythical creatures pull a flying cage. Adrienne Mayor argued that myths of this beast drew on beaked *Protoceratops* fossils. A chariot drawn by one of these creatures carries in Beatrice at the end of *Purgatorio*. The one-eyed Arimaspan Scythians of Hyperborea fight these creatures to steal their gold. The offspring of this creature and a real animal carries Ruggiero to Angelica in *Orlando Furioso*. These creatures are a cross between a flying totem of Zeus and an animal that Heracles killed in Nemea. For 10 points, what half-lion, half-eagle monsters cross with horses to make hippogriffs?

ANSWER: **griffins** [or **grȳpus** or **gryps** or variants; accept **shirdal**]
<Mythology>

19. This author points out that "the taverns and coffee-houses are open" in an essay that hopes to "establish liberty of conscience." In another essay, this author recounts the story of a 15-year-old girl who is "crucified for an attempt to poison the emperor." This author advocates waiting for a time of international peace in an essay that considers the abolition of Christianity. This author promotes making "admirable gloves for ladies and summer boots for fine gentlemen" in an essay that hopes to discourage people from "fighting for the pretender in Spain." This author suggests "Lessening the number of papists among us" by serving a dish "stewed, roasted, baked, or boiled." For 10 points, name this author who suggested eating Irish children in "A Modest Proposal" and wrote *Gulliver's Travels*.

ANSWER: Jonathan **Swift**
<British Literature>

20. A rigid rotor named for these objects has the simplest rotational spectra due to having a single value for its rotational constants. The letter K sometimes names the point group of these objects, which is equivalent to R3. Associated Legendre (“luh-ZHOND”) polynomials are used to define a set of functions named for these entities that occur as a result of solving Laplace’s equation. A particle in a potential with the symmetry of one of these shapes may be used to model hydrogen-like atoms. Atomic orbitals whose angular momentum quantum number equal zero have equivalent symmetries to this shape. Three-dimensional charge distributions with this shape generate identical electric fields to a point charge. For 10 points, name these shapes that are invariant around any rotation around their center.

ANSWER: **sphere** [or word forms such as **spherical**]

<Physics>

21. Roy returns to this state after being released from prison due to a false rape conviction in Tayari Jones’s 2018 novel *An American Marriage*. In a novel set in this state, three men kidnap an albino boy named Dave Dawson and Ty Ty Walden attempts to find gold on his land. This state is the setting of a novel about the tenant farming Lester family. In a novel set in this state, the protagonist helps deliver Melanie Hamilton’s baby. This state is the setting of Erskine Caldwell’s novels *God’s Little Acre* and *Tobacco Road*. A character in this state tells his love interest “my dear, I don’t give a damn” in a 1936 novel. In that novel set in this state, Rhett Butler leaves Scarlett O’Hara. For 10 points, what state is the setting of Margaret Mitchell’s *Gone With the Wind*?

ANSWER: **Georgia** [or **GA**]

<American Literature>

Bonuses

1. In this novel, “a little phrase” in the Vinteuil (“van-TUH-ee”) Sonata represents a love that “swept over and enveloped” one character. For 10 points each:

[10] Name this novel in which the narrator remembers holidays in Combray as he struggles to sleep. Charles Swann marries Odette de Crécy in this novel.

ANSWER: **In Search of Lost Time** [or **Remembrance of Things Past**; or **À la recherche du temps perdu**; accept **Swann’s Way** or **Du côté de chez Swann**]

[10] Marcel Proust angered his own father by defending this man in *In Search of Lost Time*. Émile Zola’s letter *J’Accuse* accused Félix Faure (“fay-LEEKs FOR”) of mishandling accusations against this man.

ANSWER: Alfred **Dreyfus**

[10] Proust praised this other French author of *Gigi* for revealing “the violence of the female thought in the work of art.” This author received no royalties for writing the *Claudine* series due to the books being credited to her husband Willy.

ANSWER: **Colette** [or Sidonie-Gabrielle **Colette**]

<European Literature>

2. The available range of values for this property is known as a gamut. For 10 points each:

[10] Name this property whose “difference” is represented by delta-E in CIELAB (“C-I-E-lab”). Values for this property are visualized as points on a cylinder in the HSL and HSV spaces.

ANSWER: **colors** [accept **color** gamut or **color** difference or **color** spaces; accept **shades** of color; prompt on **hue**]

[10] A common, robust color classifier for an image known as a GMM is constructed by summing multiple functions named for this man. This man names a blur method that averages the color values in a window around a pixel, which is often used to reduce noise in image processing.

ANSWER: Carl Friedrich **Gauss** [accept **Gaussians** or **Gaussian** mixture models or **Gaussian** blur; prompt on **normal** distribution or **bell curve**]

[10] The most intuitive color space for humans is an additive model based on these three colors, which correspond with the peak sensitivities of human cone cells. Pixel values are typically defined in terms of these three colors.

ANSWER: **RGB** [accept **red, green, and blue** in any order; do not accept or prompt on “primary colors”]

<Other Science>

3. During the “Peoria War,” Main Poc, Black Partridge, and Senachwine led this people, who converted to Catholicism at Saint Rose Philippine Duchesne’s Sugar Creek mission in St. Marys, Kansas. For 10 points each:

[10] Name this people who won the Battle of Fort Dearborn and formed the Three Fires Council with the Ojibwe (“oh-JIB-way”) and Odawa. An 1838 “Trail of Death” forced this people from Indiana to Kansas, where they named a gang of abolitionist “Rifles” during Bleeding Kansas.

ANSWER: **Potawatomi** [or **Neshnabé**; or **Bodéwadmi**; accept **Pottawatomie** Rifles or **Pottawatomie** Massacre or **Pottawatomie** Creek; prompt on **Anishinaabe**]

[10] The Potawatomi Chief Menominee shared his name with another nation led by Chief Oshkosh around this state’s Fox River. The Ojibwe and French traded furs at La Pointe on this state’s largest Apostle Island, Madeline Island.

ANSWER: **Wisconsin** [or **WI**]

[10] In the aftermath of this war, Potawatomi leaders Billy Caldwell and Alexander Robinson negotiated Wisconsin’s Treaty of Prairie du Chien (“sheen”). The British took the trade post Fort Mackinac (“MACK-ih-naw”) in this war, which included the battles of Queenston Heights and Lake Erie.

ANSWER: War of **1812**

<American History>

4. This character asks “Thy hand, Belinda” in a recitative (“reh-sit-uh-TEEV”) before her most famous aria. For 10 points each:

[10] Name this operatic character who sings a dotted rhythm on three repetitions of the phrase “Remember me!” before singing a descending melody on “but ah! forget my fate.”

ANSWER: **Dido**

[10] This English Baroque composer of *Ode to St. Cecilia* included “Dido’s Lament” as the final aria in his opera *Dido and Aeneas*.

ANSWER: Henry **Purcell** (“PUR-sull”)

[10] Among Purcell’s semi-operas is one named for a holder of this position and subtitled “The Prophetess.” The duet “Pur ti miro” is included in a Monteverdi opera centering on the romantic liaison between a holder of this position and his mistress.

ANSWER: **Roman emperor** [or **emperor of Rome** or equivalents; accept **Dioclesian** or **Diocletian** or **Nero**] (The second opera is *The Coronation of Poppea*.)

<Other Arts>

5. The Sanches–Greenberg–Slobin generalization argues that these words are elaborated in languages that treat all nouns as “mass nouns” instead of using obligatory inflection. For 10 points each:

[10] Name these elements of Chinese, Burmese, and Vietnamese grammar that are also used in American Sign Language predicates conveying location, shape, and movement. In Mandarin, words of this type, like *gè* (“guh”), come between demonstratives and nouns.

ANSWER: noun **classifiers** [or **measure words**; or **counter** words; or **counters**; accept **classifier** predicates; do not accept or prompt on “noun classes” or “count nouns”]

[10] Chinese uses classifiers to convey this grammatical category instead of inflection. French noun–adjective agreement depends on gender and this category, which English often conveys by ending nouns with “s.”

ANSWER: grammatical **number** [accept **singularity** or **plurality**; accept **dual** or **trial** or **paucal** or **collective**]

[10] This language, constructed for a popular franchise by David J. Peterson, uses the paucal number meaning “a few” and the collective number meaning “all.” On Duolingo, it’s more popular than the other constructed languages Esperanto and Klingon.

ANSWER: High **Valyrian** (from *A Song of Ice and Fire/Game of Thrones*)

<Social Science>

6. Judith Defour reportedly sold the clothes off of her 2-year-old child’s back to buy some of this product, inspiring a series of 18th-century etchings. For 10 points each:

[10] Name this product. Early vending machines shaped like cats were created in England to bypass laws banning the dispensing of this product.

ANSWER: **gin**

[10] Gin boomed after the passage of these tariffs intended to protect domestic producers from foreign grain producers. These acts were repealed by Robert Peel after a large effort spearheaded by the founders of *The Economist*.

ANSWER: **Corn Laws**

[10] Gin gained a boost in popularity after William of Orange banned all imports of French cognacs and wines. William of Orange ascended to the English throne with his wife Mary in this 1688 “revolution” that ended Stuart rule in England.

ANSWER: **Glorious** Revolution

<Other History>

7. A book by Anne Carson claims that it was this person who first called eros “bittersweet” and that “no one who has been in love disputes her.” For 10 points each:

[10] Name this poet whose works were translated in *If Not, Winter*, including a poem addressed to a “deathless” goddess that begs “do not break with hard pains... my heart.”

ANSWER: **Sappho**

[10] “Ode to Aphrodite” is Sappho’s only surviving poem with this quality. Brackets are used in *If Not, Winter* to indicate that Sappho’s other poems are fragmentary, thus [emphasize] *lacking* this quality. A description is acceptable.

ANSWER: **complete** [or **finished** or **not found in pieces**; or equivalents]

[10] A moment when Delphis enters Simaetha’s house in this ancient poet’s Second Idyll was adapted from Sappho 31. This poet is considered the inventor of bucolic poetry.

ANSWER: **Theocritus**

<World/Other Literature>

8. Aristotle referred to butterflies with this word, which is the Greek word for “soul.” For 10 points each:

[10] Give this word that is also the name of a mythological figure who makes love with her husband Cupid in complete darkness until she accidentally splashes his face with hot oil.

ANSWER: **Psyche**

[10] In a myth of these peoples, it was believed the souls of some of the deceased would return as butterflies. A goddess of these people who was associated with fertility, flowers, and butterflies was kidnapped by a god who replaced one of his feet with a mirror.

ANSWER: **Aztecs** [or the **Mexicatl** or **Nahuatl**] (The second clue is Tezcatlipoca’s abduction of Xochiquetzal.)

[10] Aztecs believed that the souls of enemy warriors became butterflies, but that their warriors became these animals. A god named after one of these animals burst fully armed from his mother’s womb and fought off 400 brothers and a sister whose head became the moon.

ANSWER: **hummingbirds** [or **huitzilin**; prompt on **birds**; prompt on **Huitzilopochtli** by asking “what animal is he named for?”]

<Mythology>

9. Pure examples of these entities correspond to vectors in Hilbert space. For 10 points each:

[10] Name these entities that are represented by kets in bra-ket notation. Fermions cannot occupy the same one of these entities according to the Pauli exclusion principle.

ANSWER: quantum **states** [accept **eigenstates**]

[10] This no-go theorem states that it is impossible to create an independent and identical copy of some arbitrary quantum state.

ANSWER: **no-cloning** theorem

[10] At sufficiently low temperatures, integer-spin particles will condense into the lowest energy quantum state to form this so-called fifth state of matter named for a pair of physicists.

ANSWER: **Bose–Einstein condensate** [or **BEC**]

<Physics>

10. After a sculpture of a bird by this artist was damaged by dynamite, he donated an identical sculpture to stand next to the damaged one. For 10 points each:

[10] Name this Colombian artist known for depicting figures in an exaggeratedly round manner.

ANSWER: Fernando **Botero** Angulo

[10] Botero depicted this woman with an enlarged head at the age of twelve. Marcel Duchamp added a goatee to a picture of this woman on a postcard.

ANSWER: **Mona Lisa** [or **Lisa**; or Lisa del **Giocondo**; or La **Golconda** or La **Joconde**; prompt on L.H.O.O.Q.]

[10] Botero also created a double self-portrait based on a painting by this artist. This artist appears with the red cross of the Order of Santiago on his chest as he looks into an easel on the left side of his masterpiece *Las Meninas*.

ANSWER: Diego **Velázquez**

<Painting/Sculpture>

11. This novel is set in the neighborhood the Bottom, where the PTSD-afflicted veteran Shadrack leads the celebration of National Suicide Day each year on January 3rd. For 10 points each:

[10] Name this novel whose title character sleeps with her best friend Nel's husband and accidentally kills Chicken Little.

ANSWER: **Sula**

[10] This Black Nobel laureate wrote *Sula* as well as a novel about Sethe and Denver escaping from the Sweet Home plantation, *Beloved*.

ANSWER: Toni **Morrison**

[10] In *Sula*, it is rumored that Sula's grandmother Eva lost her leg by purposely placing it on one of these objects to collect insurance money. In Frank Norris's novel *The Octopus*, a company attempts to seize farmers' land for the construction of one of these objects.

ANSWER: **railroad** [or **train track**; accept **train**, **locomotive**, or similar; prompt on vehicle]

<American Literature>

12. A queen from this region named Piroska married John III Komnenos and created the Pantokrator, a church with hospital wards open to people of all socioeconomic classes. For 10 points each:

[10] Name this kingdom. An 11th-century king of this region overthrew Petar Snačić ("SNAH-cheech") in a neighboring state, acted as a gatekeeper for travelers during the First Crusade, and had the epithet "Book-Lover."

ANSWER: **Hungary**

[10] Interestingly, Coloman the Book-Lover passed a law banning the trials of these people. Hunts for these people were popular in early modern Europe, and they were often tossed into water to see if they could float.

ANSWER: **witches** [accept **witch** trials, **witch** hunts, or synonyms in place of "hunts" or "trials"]

[10] Coloman was part of the Árpád Dynasty, first ruled by this canonized king. This first king of Hungary was crowned on Christmas Day, 1000.

ANSWER: **Stephen** I [or St. **Stephen** of Hungary; or Szent **István** király; or Sanctus **Stephanus**]

<European History>

13. This character uses the example of a hot hand and a cold hand being simultaneously plunged into a bowl of water to demonstrate the absurdity of the arguments proposed by his interlocutor. For 10 points each:

[10] Name this character, the second one in the title of a work, who claims that “seeing a thing which is at the same time unseen” is a contradiction.

ANSWER: **Philonous**

[10] Philonous debates with Hylas in a set of three dialogues by this Irish philosopher, who names a California university. His philosophy can be summed up in the maxim “to be is to be perceived.”

ANSWER: George **Berkeley** (“BARK-lee”)

[10] Karl Popper has analogized Berkeley’s anti-essentialist work on the scientific method to this kind of object. This kind of object also names an earlier philosophical concept that can be used as a heuristic to decide between competing theories.

ANSWER: **razor** [accept Berkeley’s **razor** or Occam’s **razor**]

<Philosophy>

14. One abnormal finding during this procedure is called an ASCUS, or atypical squamous (“SKWAY-mus”) cells of undetermined significance. For 10 points each:

[10] Name this procedure that can detect low and high-grade squamous intra-epithelial lesions, or LSILs and HSILs. A colposcopy might be ordered if abnormal cells are discovered during this test.

ANSWER: **Pap** smear [or **Pap** test; or **Papanicolaou** test; accept **cervical** smear or **cervical** test; accept **anoscopies**]

[10] Pap smears are often used in conjunction with testing for this virus, the most common cause of cervical cancer and the cause of the most common STI in the United States.

ANSWER: **HPV** [or **human papillomavirus**]

[10] A form of cervical cancer called clear-cell adenocarcinoma (“AD-in-oh-carcinoma”) is much more likely to develop in daughters of women who took DES, a synthetic analogue of this hormone. Androgens are converted into this hormone by aromatase.

ANSWER: **estrogens** [prompt on female sex **hormones**]

<Biology>

15. A statue of a charioteer holding an umbrella was smeared with this substance to allegedly keep the statue’s soul trapped. For 10 points each:

[10] Name this substance, which in ancient China was believed to bring eternal life. A river of this substance made access to a tomb defended by the Terracotta Army and located near Xī’ān (“shee-ahn”) nearly impossible.

ANSWER: **mercury** [accept **Hg**]

[10] This emperor was ironically killed by mercury pills he swallowed daily so he could achieve eternal life. This first Chinese emperor’s minister Lǐ Sī oversaw book burnings and live burials of Confucian scholars.

ANSWER: Qín **Shǐ Huángdì** [accept **Qín Shǐ Huáng** or **Shǐ Huángdì**; accept **Yíng Zhèng** or **Zhào Zhèng** or King **Zhèng** of **Qín**]

[10] The arrival of Qín Shǐ Huángdì’s admiral Xú Fú to Japan in search of an elixir of life coincides with Japan’s transition from the Jōmon period to this period. Communal settlements around rice paddies characterize this Iron Age period.

ANSWER: **Yayoi** Period

<World History>

16. The narrator of this poem “sings the sweetness, Mercy, Majesty / And glories of [his] King.” For 10 points each:
[10] Name this poem that describes “flowing Cups... With no allaying Thames (“tems”).” This poem considers “The Gods that wanton in the Air” and “Enlargèd Winds, that curl the Flood” before concluding “Angels alone that soar above / Enjoy such Liberty.”

ANSWER: “**To Althea, from Prison**”

[10] This Cavalier poet of “To Althea, from Prison” declared “I could not love thee (Dear) so much / Lov’d I not Honour more” in “To Lucasta, Going to the Wars.”

ANSWER: Richard **Lovelace**

[10] Richard Lovelace’s “To Amarantha, That She Would Dishevel Her Hair” and Robert Herrick’s “To The Virgins, To Make Much of Time” are examples of poems described by this phrase. This two-word phrase, which is Latin for “seize the day,” describes a common theme of Cavalier poetry.

ANSWER: **carpe diem**

<British Literature>

17. In the movie *Good Will Hunting*, Matt Damon’s character deciphers the proton NMR spectrum of ibogamine. For 10 points each:

[10] Ibogamine is an iboga alkaloid, making it a derivative of this aromatic heterocycle found in melatonin and tryptophan. An enamine (“EEN-uh-meen”) undergoes a [3,3]-sigmatropic rearrangement to form this group’s pyrrole ring in its Fischer synthesis.

ANSWER: **indoles** [accept the Fischer **indole** synthesis]

[10] One of the difficulties in synthesizing iboga compounds is closing a mildly strained ring containing this many atoms. Diazepines (“dye-AZ-uh-peens”) have rings with this many atoms, which is one more than the number in a benzene ring.

ANSWER: **seven** atoms

[10] Ibogamine may reduce rodents’ addiction to morphine, which contains an oxygen in this molecular position. This position is denoted “mu” for ligands (“LIG-unds”) of coordination complexes and is occupied by atom 7 in the bicyclic molecule norbornane.

ANSWER: **bridge** position [accept **bridging** ligand; accept **bridgehead**, although that is technically the atoms at the base of the bridge]

<Chemistry>

18. Famous uses of this type of cadence include the opening bars of Beethoven’s *Les Adieux* (“layz ah-DYUH”) piano sonata and the beginning of “O Canada.” For 10 points each:

[10] Name this type of cadence in which a five chord usually resolves unexpectedly to a six chord.

ANSWER: **deceptive** cadence

[10] The plagal (“PLAY-gul”) cadence, which resolves from a four chord to a one chord, is sometimes named for this word because of its common use in church music. This word is found at the end of most Christian prayers.

ANSWER: **Amen** [accept **Amen** cadence]

[10] The “cadential” type of this chord often served as preparation for a dominant trill in the Classical era. This chord’s name refers to the two intervals that occur above the bass note in a second-inversion triad.

ANSWER: cadential **6/4** (“six-four”) chord [accept I (“one”) **6/4** or V (“five”) **6/4**; prompt on second-inversion triad until read]

<Classical Music>

19. The CHOICE and LEAP Acts created these regions as part of the 2017 Tax Cuts and Jobs Act. For 10 points each:

[10] Name these regions where businesses that create impact investment plans in low income areas are rewarded with capital gain tax deferrals.

ANSWER: qualified **opportunity zones** [prompt on QOZs]

[10] Opportunity zones were a bipartisan creation by Cory Booker and this other Senator, who, after Will Hurd's retirement, will be the only Black Republican in Congress. This senator described ending qualified immunity as a "poison pill" regarding his JUSTICE Act.

ANSWER: Tim **Scott**

[10] Scott is the junior senator from this state, whose senior senator is Lindsey Graham.

ANSWER: **South Carolina** [or **SC**]

<CE/Geo/Other/Pop Culture>

20. Barbara Newman used this country's saint Christina the Astonishing to highlight the 13th-century view of mentally ill women as both prophetic saints and demoniacs possessed by unclean spirits. For 10 points each:

[10] Name this modern country whose Beguines ("beg-EENS") included Marie of Oignies ("wann-YEE") and Marcella Patyn. Two "School Wars" erupted over Catholic education in this country, which is majority-Catholic despite a north-south linguistic divide.

ANSWER: **Belgium** [or Kingdom of **Belgium**; or Koninkrijk **België**; or Royaume de **Belgique**; or Königreich **Belgien**; prompt on the **Low Countries**]

[10] The 13th-century Belgian Saint Juliana of Liège convinced the Church to adopt this holiday, which is held on the Thursday after Trinity Sunday. The Wakefield and York mystery play cycles were staged for this feast.

ANSWER: Feast of **Corpus Christi** [or Solemnity of the Most Holy Blood and **Body of Christ**; or Dies Sanctissimi **Corporis** et Sanguinis Domini Iesu **Christi**; or **Corpus Domini**]

[10] Miri Rubin and Caroline Bynum examined Cistercian nuns having visions of this sacrament on Corpus Christi. Corpus Christi was inspired by a miracle in Bolsena about this sacrament, which involves consuming the "body of Christ" as a transubstantiated wafer.

ANSWER: **Eucharist** [or **Communion**; or **Lord's Supper**; accept the **host**]

<Religion>

21. Clara Driscoll led the union of women that was most famous for producing these objects, but was forced to leave after she got married. For 10 points each:

[10] Name these valuable objects made around the turn of the 20th century. Some of their iconic designs include the Peacock, Dragonfly, and Wisteria.

ANSWER: Tiffany **lamps**

[10] Tiffany lamps were made using the Favrite ("fav-REEL") type of this material. Louis Comfort Tiffany used this material's "stained" form in many cathedrals.

ANSWER: **glass** [or Favrite **glass**; or stained **glass**]

[10] Tiffany's designs reflect this style of art, which uses curved lines to depict natural objects like plants. Hector Guimard ("ghee-MAR") used this style for the entrances to the Paris Métro.

ANSWER: **Art Nouveau** [accept **Jugendstil**; prompt on **organic** architecture]

<Other Arts>