**ACF Regionals 2018**

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Tossups

1. Like its composer’s opera about Elizabeth of England, this opera’s overture is directly taken from that of *Aureliano in Palmira*. When asked to turn over a love letter, a girl in this opera hands over a laundry list instead. Its overture’s F minor second theme features a motif of three staccato eighth notes, followed by two slurred ones, in an example of the composer’s iconic “crescendo.” A tone below the original D major is usually used to sing its aria about gossip titled “La calunnia.” Arias in this opera include one sung before the music teacher Don Basilio arrives, titled “Una voce poco fa” (“OO-nah VOH-chay POH-koh FA”), and one in which the title character repeats his name before the patter section, titled “Largo al factotum.” For 10 points, name this opera about Count Almaviva’s attempts to woo Rosina, written by Gioachino Rossini.

ANSWER: *The* ***Barber of Seville****, or, the Useless Precaution* [or *Il* ***barbiere di Siviglia****, ossia L’inutile precauzione*]

<Other Art (Opera)>

2. The organization ICARDA received the first authorized transfer from one of these locations to help it recover from the Syrian Civil War. The largest of these locations was established by a Millennium Commission awarded to a royal organization based in Kew. In March 2017, a so-called “World Archive” was opened next to one of these locations that was built into an abandoned coal mine near Longyearbyen. Workers at the Vavilov Institute guarded one of these locations during the siege of Leningrad, refusing to make use of its contents. One of these locations is kept at negative 0.4 degrees Fahrenheit, which prevented melted permafrost from damaging its stocks in May 2017. For 10 points, identify these storage facilities exemplified by a “global” one in Svalbard that preserves over 400,000 agricultural samples.

ANSWER: **seed vault**s [or **seed bank**s; or **gene bank**s; prompt on vaults, banks, or other storage facilities]

<Geography>

3. This character is said to split an opponent “like a mussel” in a passage where he set himself ablaze. The return of a stolen statue of this character is predicted in a document called his “Prophecy” that tells of a journey to Hatti. That prophecy about this character was used for propaganda on the Cyrus Cylinder, which was found at the shrine to this character at Esagila (“ess-uh-GHEE-luh”). To allow the gods to rest, this character created humans by using the blood of a vizier who commanded legions of monsters against him named Kingu. This net-wielding hero was attacked by an “evil wind” unleashed by the personification of salty waters. After defeating that monster, this hero acquired the Tablets of Destiny, which justify his rule in the *Enuma Elish*. Tiamat was slain by, for 10 points, what chief Babylonian god?

ANSWER: (Bel-)**Marduk**

<Mythology>

4. Examining the spectrum of a quantization of the classical Hamiltonian “*H* equals *xp*” yields a result similar to this statement according to the Berry–Keating conjecture. This statement is implied by the stronger Mertens conjecture, which was proven to be false in 1985. Adolf Piltz formulated a “generalized” version of this statement that applies to Dirichlet (“DEE-ree-klet”) *L*-series, which reduces to the standard version when all terms in the series have numerator 1. This statement, which was introduced in the 1859 paper “On the Number of Primes Less Than a Given Magnitude,” would place a tight bound on the error term in the prime number theorem if it were true. This statement ignores the negative even integers, which are the “trivial zeros.” For 10 points, identify this unproven conjecture that the nontrivial zeros of a certain man’s zeta function all have real part one-half.

ANSWER: **Riemann hypothesis** [prompt on Riemann]

<Other Science (Math)>

5. Apart from “A,” this is the first word in the title of a poem that opens: “I’ll tell thee now (dear Love) what thou shalt do / To anger destiny, as she doth us.” T. S. Eliot wrote that a poem whose title starts with this word demands “considerable agility” to comprehend the double comparison of a globe to a tear, and of a tear to a deluge. Poems of this type “of the Book” and “of Weeping” appear in the volume *Songs and Sonnets* alongside a third example describing a love “inter-assurèd of the mind, / Care less, eyes, lips, and hands to miss.” The speaker asserts “’Twere profanation of our joys / To tell the laity our love” in that poem titled for this genre, which asserts: “Thy firmness makes my circle just / And makes me end where I begun,” at the end of an extended metaphor comparing two souls to points on a compass. For 10 points, John Donne wrote what type of farewell address “forbidding mourning?”

ANSWER: **valediction** [accept “A **Valediction** of the Book”; accept “A **Valediction** of Weeping”; accept “A **Valediction** Forbidding Mourning”]

<Non-Epic Poetry>

6. A design featuring pelicans and grape vines in this painting is situated above text that says “Youth without age on his forehead” on a step behind a crown. Popes Martin V and Gregory VII and the Antipope Alexander V are seen together in a crowd in this painting beneath John the Baptist holding a book. Depictions of John the Baptist and John the Evangelist in grisaille (“griz-EYE”) are located below two empty panels separating Gabriel and Mary in this painting’s Annunciation, which is located above a portrait of its patron, Jodocus Vijd (“yo-DOH-cuss FATE”), on its closed view. In this painting, Adam is positioned above a replacement for a stolen panel depicting the Just Judges, who are witnessing the title “Adoration of the Mystic Lamb.” For 10 points, name this polyptych altarpiece by Hubert and Jan van Eyck.

ANSWER: ***Ghent Altarpiece*** [accept *The* ***Adoration of the Mystic Lamb*** or ***Het Lam Gods*** until “adoration” is read]

<Painting/Sculpture>

7. A writer from this present-day country was said to have created “the strongest narcotic” of his century by saying that history should be written “as what actually happened.” The leading figure of this country’s “youngest historical school” was the author of the six-volume history series *Modern Capitalism*. Another of this country’s historians wrote a three-volume *History of Rome*, which won him a Nobel Prize in 1903. A *Universal History* up to the time of ancient Greece was attempted by this country’s leading 19th-century historian, who wrote the essay “The Great Powers” and pioneered emphasis on primary sources. Many historians were influenced by an idealist from this country who effectively stated “Africa has no history” in his *Lectures on the Philosophy of History* and described history as a process of dialectic. For 10 points, name this home country of Georg Hegel.

ANSWER: Federal Republic of **Germany** [or Bundesrepublik **Deutschland**; be generous and accept historical incarnations such as the **German Empire** or **Weimar Republic**] (The thinkers referenced are Walter Benjamin, Werner Sombart, Theodore Mommsen, Leopold von Ranke, and Hegel.)

<Historio/Archaeo>

8. Defects in SURF1, which partakes in the biogenesis of an enzyme in this process, are linked to central nervous system degeneration in Leigh syndrome. That enzyme in this process has an unusual crosslink between the side chain rings of its tyrosine-244 and histidine-240, enabling the function of its binuclear copper center. The protein that generates heat in brown adipose tissue, thermogenin, counteracts the chemical gradient induced by this process as an “uncoupler.” A free radical intermediate called semiquinone is reduced to ubiquinol as part of the Q cycle carried out by cytochrome bc1 in this process. Oxygen acts as the “final acceptor” of this process, whose complexes I and II use reserves of NADH and FADH2. ATP synthesis is driven by the proton gradient formed by, for 10 points, what series of redox reactions at the end of cellular respiration?

ANSWER: **electron transport chain** [prompt on oxidative phosphorylation; prompt on OXPHOS; prompt on respiration]

<Biology>

9. Restrictions after one of these events forced a contingent of Old Believers to relocate to Rogozhskoye (“ruh-GOHSH-skuh-yuh”). A column formed by nine angels was erected during one of these events in Vienna by Holy Roman Emperor Leopold I. The *Loimologia* of Nathaniel Hodges chronicles one of these events, during which a diarist claimed “I have never lived so merrily.” A 1630 one of these events that forced Venice to use the Lazzaretto Vecchio is depicted in great detail in the novel *The Betrothed*. Another of these events popularized a religious movement whose members traveled around whipping themselves. One of these events that gave way to a fire was chronicled in the diary of Samuel Pepys (“peeps”). For 10 points, name these events that were addressed by doctors wearing bird-like masks.

ANSWER: outbreaks of bubonic **plague** [prompt on disease outbreaks, epidemics, or pandemics by asking “of what disease?”]

<European History post-600>

10. This novel enjoins the reader to consult a “metaphysical professor” should they “ever be athirst in the great American desert,” since “as everyone knows, meditation and water are wedded forever.” The narrator of this novel contrasts his quiet inclinations with the “philosophical flourish” with which “Cato throws himself upon his sword.” It opens with an “etymology” across thirteen languages for a word that appears in this novel’s full title, followed by a series of “extracts,” compiled by a “sub-sub-librarian,” of that word’s appearances in past literature. In its first numbered chapter, “Loomings,” the narrator confesses that “whenever I find myself growing grim about the mouth; whenever it is a damp, drizzly, November in my soul… then, I account it high time to get to sea as soon as I can.” For 10 points, name this novel that opens “Call me Ishmael,” written by Herman Melville.

ANSWER: ***Moby Dick****; or, The Whale*

<Long Fiction>

11. For Dirichlet (“DEE-ree-klet”) boundary conditions, this quantity is given by the volume integral of the charge density times the Green’s function. During a gauge (“gayj”) transformation, this quantity is replaced by its original value minus the time derivative of the gauge function. By applying the law of cosines and writing this quantity in terms of Legendre (“luh-ZHAWND-ruh”) polynomials, one obtains its multipole expansion. In empty space, this quantity has no local extrema due to Earnshaw’s theorem, which follows from the fact that it satisfies Laplace’s equation. This scalar quantity is constant within a conducting material. After specifying this quantity at one point, it can be calculated elsewhere by taking the negative line integral of the electric field. For 10 points, name this quantity whose difference between two points in a circuit equals current times resistance, according to Ohm’s law.

ANSWER: **electric potential** [accept **scalar potential** or **voltage**; prompt on potential or *V*; do not accept or prompt on “potential energy” or “vector potential”]

<Physics>

12. *The Washington Post* claimed that Barack Obama’s head of this agency considered resigning because “there are days where I have literally nothing to do.” Playing on Italian stereotypes, a head of this cabinet agency mocked a papal opinion on sex by opining “he no play-a da game, he no make-a da rules.” *Pigford v. Glickman* entitles African-Americans to apply for monetary settlements for this agency’s discriminatory loan allocations between 1981 and 1996. This agency switched from pushing “buffer stock” schemes to “get big or get out” industrialization during the tenure of Earl Butz. A selectively edited tape from Breitbart led Shirley Sherrod to be fired by this agency, which was headed by Tom Vilsack under Barack Obama and employs a “beagle brigade” to sniff out contraband. For 10 points, name this cabinet department currently headed by Sonny Perdue.

ANSWER: The United States Department of **Agriculture** [or the **USDA**]

<US History>

13. A character created by this author describes losing all hope in life after a love interest points out a caterpillar in his hair as he’s attempting to kiss her. Another character created by this author shoots out the eyes of a portrait that has a mustache drawn on it and makes mines out of china teapots. In a work by this author, the narrator’s friend Serval describes how people from a certain region are asked their names and addresses before being burned to death by Mother Savage. A character created by this author whose use of the phrase “fi donc” has earned him a feminine nickname is murdered by the prostitute Rachel. In another story by this author, a carriage containing the Loiseaus (“lwah-ZOHS”) and Cornudet is allowed to return to Le Havre (“AHV”) after Elisabeth Rousset sleeps with a Prussian officer. For 10 points, name this French author of “Mademoiselle Fifi” and “Boule de Suif” (“bool duh sweef”).

ANSWER: Guy de **Maupassant** (“MO-pah-sant”)

<Short Fiction>

14. A target value for one form of this quantity that is especially useful during periods of crisis can be found with the McCallum rule. At equilibrium, this quantity equals the quantity provided by the Baumol–Tobin model. The k-percent rule advocates a constant yearly increase in this quantity. The LM curve tracks equilibrium points between liquidity preference and this quantity. This quantity divides a country’s gross national product in the “velocity equation.” Quantitative easing attempts to lower interest rates by raising this quantity through open market operations, or the buying and selling of bonds. Anna Schwartz and Milton Friedman argued that erratic changes in this quantity have led to inflation. For 10 points, name this quantity, the amount of currency present in an economy.

ANSWER: **money supply** [or **monetary supply** or **monetary base**; prompt on M or money]

<Social Science>

15. The finale of a symphony by this composer begins with a decrescendo, followed by the flutes playing a melody marked *leggiero* (“lej-JEH-roh”) over eighth note string triplets. This man said that he created a “blue sky in A major” with a symphony that is the first in the standard repertoire to start in major, but end in a minor key. The *Andante con moto* second movement of that symphony by this composer, according to Ignaz Moscheles (“EEG-nots MOH-sheh-les”), draws on a Czech pilgrims’ song. To create an alternative third movement for his Symphony No. 1 in C minor, this composer orchestrated the scherzo (“SKAIRT-so”) of his E-flat string octet. The finale of this man’s Fourth Symphony includes a *saltarello* and *tarantella*, which are dances from the country that symphony is usually named after. For 10 points, name this composer of “Italian” and “Scottish” symphonies who wrote incidental music to *A Midsummer Night’s Dream*.

ANSWER: Felix **Mendelssohn**

<Music>

16. In its main industrial use, this compound reacts photochemically with nitrosyl chloride to form an oxime that rearranges to generate the Nylon precursor caprolactam. Though the proton NMR spectrum of a mostly-deuterated derivative of this compound resolves into two signals at around negative 90 degrees Celsius, the spectrum for this compound itself is just a single peak at 1.43 ppm. This compound eliminates the steric strain caused by the proximity of two “flagpole hydrogens” by undergoing a very low energy 10.8 kilocalorie “pseudorotation.” Each carbon of this compound is bound to one “axial” and one “equatorial” hydrogen in its most stable configuration. Fully hydrogenating benzene yields this compound. The “boat” is less favorable than the “chair” conformation of, for 10 points, what cycloalkane with formula C6H12?

ANSWER: **cyclohexane** [do not accept or prompt on “hexane”]

<Chemistry>

17. A ruler of this ethnicity aided peasants by establishing “charity granaries” and regularizing the tax burden levelled by traditional owners of appanages of land won in war, called *khubi*. That ruler of this ethnicity chose not to convert the use of farmland thanks to his Christian wife Chabi. A princess of this ethnicity who would only marry a man who beat her in a wrestling match purportedly fell in love with a ruler of this ethnicity named Ghazan, who converted to Islam. Rulers of this ethnicity were patrons of Rabban bar Sauma, one of many Nestorian Christians prominent in their court. The leader who unified these people had a wife who was kidnapped by a group of them, the Merkits. This ethnicity ruled the largest realm to elect leaders through a *kuriltai* assembly, and led the Golden Horde. For 10 points, name this people who ruled the largest contiguous empire in world history thanks to Genghis Khan.

ANSWER: **Mongol**s [or **Mongolian**s; accept **Khamag** or **Khongirad** Mongols since all the leaders mentioned were from a family descended from those tribes] (The first two clues refer to Khubilai Khan’s policies in China.)

<Other History>

18. Colin Low was unusually granted permission to film a ritual named for this object that supposedly began after a race between “four-leggeds” and “two-leggeds” to determine who would eat whom. Young men pierced their chests with pins and hooks during that ritual named for this object, which begins with the presentation of a buffalo skull as an altar for offerings. James Paytiano recorded a story about this thing and one of its children named Flaming Arrow Kachina, which was adapted into a Newberry-winning book about an “Arrow to” it. Aztec cosmology centered around the reigns of five different incarnations of this object, which was nourished in the New Fire ceremony with human hearts. Most Plains tribes disallow photographs of a “dance” named after, for 10 points, what celestial object?

ANSWER: the **Sun** [accept **Sun Dance** or ***Arrow to the Sun***]

<Religion>

19. Regina Gagnier’s (“GAHN-yay’s”) book *The Idylls of the Marketplace* argues that this author’s work functioned as a protest against the commodification of art through notions of utility. In one work, this author wrote that “Watteau would have loved to paint” two women who sit in front of a tapestry inspired by François Boucher’s (“boo-SHAY’s”) *The Triumph of Love*. He analyzed the case of the art critic and serial killer Thomas Griffiths Wainewright in his essay “Pen, Pencil, and Poison.” This author compared the response to realism and romanticism to different “rage[s] of Caliban” in the preface to a work in which the chemist Alan Campbell helps dispose of the body of a murdered painter. In that novel by this author, Lord Henry Wotton watches Basil Hallward paint the title artwork, which ages instead of its subject. For 10 points, name this author of *An Ideal Husband* and *The Picture of Dorian Gray*.

ANSWER: Oscar **Wilde**

<Miscellaneous Lit>

20. A character with this name is chastised for proposing the division of herding into that of beasts and that of men. Another character with this name is told that his concept of a “day” must be like a sail covering many people, and thus have many parts. A silent character with this name learns that statesmen are distinguished from sophists through their ability to weave theoretical and practical knowledge from an argument presented by the Eleatic (“ell-ee-attic”) Stranger. A character of this name is uniquely [emphasize] *not* present or mentioned in the *Laws*, and is unable to get Callicles to concede that doing evil is worse than having it done to you in a dialogue named for Gorgias. For 10 points, give the name of this character who fails to convince a jury not to execute him for impiety in the *Apology*, a dialogue written by his student Plato.

ANSWER: **Socrates** [accept **Socrates** the Younger]

<Philosophy>

Bonuses

1. In his article “Action Research and Minority Problems,” this thinker argued in favor of defining groups not by the similarity of their individuals but by “interdependence of fate.” For 10 points each:

[10] Name this social psychologist who helped to develop the methods of sensitivity training during his time as director of MIT’s Center for Group Dynamics.

ANSWER: Kurt **Lewin**

[10] In an equation first articulated in his *Principles of Topological Psychology*, Lewin argued that this trait is a function of a person in their environment. A psychological school of thought named for this trait was promoted by John Watson.

ANSWER: **behavior** [or **behaviorism**]

[10] Lewin introduced this term to American psychology in his book *A Dynamic Theory of Personality*. It describes the levels of positivity or negativity associated with particular emotions.

ANSWER: **valence**

<Social Science>

2. This character asked whether or not an opponent is an immortal in disguise before cunningly trading a bronze object for a gold one. For 10 points each:

[10] Name this king of Argos who traded his armor with Glaucus at the end of his *aristeia* in Book Six of the *Iliad*.

ANSWER: **Diomedes**

[10] Diomedes refused to fight Glaucus because his grandfather had given hospitality to this man, who was Glaucus’s grandfather. This man killed the Chimera and tried to fly to Mount Olympus on Pegasus.

ANSWER: **Bellerophon**tes

[10] After he is killed by Ajax, Glaucus’s body is rescued by this man, who is later carried out of battle by Poseidon after Apollo convinced him to fight Achilles. This man leads Troy’s Dardanian allies.

ANSWER: **Aeneas**

<Mythology>

3. Samples undergoing a form of this technique are mixed with crystallized molecules of cinnamic acid derivatives in water or acetonitrile. For 10 points each:

[10] Name this technique that sorts compounds by the ratio of their namesake property to charge. MALDI and electrospray ionization are ways of generating ions in this analytic technique.

ANSWER: **mass spec**trometry [or **mass spec**troscopy; or **MS**]

[10] A common counter ion source added to boost the signal in MALDI is this compound, which is 34,000 times more likely to lose a proton than the “glacial” compound of which it is a derivative due to several halogens stabilizing an O–H bond via the inductive effect.

ANSWER: **trifluoroacetic** acid [or **trifluoroacetate**; or **TFA**]

[10] The presence of an *M* and *M*-plus-2 peak of the same height on a mass spectrogram indicates the presence of this halogen, which is a brown liquid at room temperature and is two rows below fluorine on the periodic table.

ANSWER: **bromine** [or **Br**]

<Chemistry>

4. This goddess presided over a pissing contest between the booksellers Curll and Chetham, which Chetham won by streaming a burning arc over his own head while his opponent splashed his own face. For 10 points each:

[10] Name this goddess who crowns either Lewis Theobald or Colley Cibber, respectively, as her new king in the three- or four-book edition of a mock-heroic poem.

ANSWER: **Dulness**

[10] As repayment for being saved by Cibber from being crushed by an overweight prostitute at a brothel, this poet of “The Rape of the Lock” cast him as the “King of Dulness” in *The Dunciad*.

ANSWER: Alexander **Pope**

[10] Because he is found to be “mature in dullness from his tender years,” Thomas Shadwell is appointed successor to a mediocre English poet in this mock-heroic poem by John Dryden.

ANSWER: “**MacFlecknoe**”

<Non-Epic Poetry>

5. The occupation probability for a microstate in this system is equal to the negative exponential of the state’s energy over *k*-sub-*B* times *T*, all divided by the partition function. For 10 points each:

[10] Name this construct that describes a system in thermal equilibrium with a heat bath at fixed temperature. It is characterized by the number of particles, the absolute temperature, and the volume.

ANSWER: **canonical ensemble** [prompt on ensemble; do not accept or prompt on “microcanonical ensemble” or “grand canonical ensemble”]

[10] The distribution of states in the canonical ensemble is named for either Josiah Willard Gibbs or this Austrian inventor of statistical mechanics, who also names the constant *k*-sub-*B* that appears in the distribution.

ANSWER: Ludwig Eduard **Boltzmann**

[10] The [emphasize] *microcanonical* ensemble describes identical physics to the canonical ensemble, but considers a collection of microstates in which this quantity, rather than temperature, is held constant.

ANSWER: total **energy**

<Physics>

6. Name some things about Italian politics between the Risorgimento and the rise of Fascism, for 10 points each.

[10] This prime minister for Victor Emmanuel II managed to gain critical French support for the Risorgimento and often feuded with Garibaldi. He died only three months into his term as first Prime Minister of a United Italy.

ANSWER: Camillo **Benso**, Count of **Cavour** [accept either underlined portion]

[10] Italy’s “Liberal Period” was marked by this practice of empowering moderates to reduce partisanship. Devised by Agostino Depretis and mastered by Giovanni Giolitti, it mainly entailed massive corruption in practice.

ANSWER: ***trasformism****o* [or **transformism**]

[10] Vittorio Orlando was lambasted for only gaining a “mutilated victory” in the negotiations at this conference, since Clemenceau’s advocacy for its “War Guilt” clause and Wilson’s support of self-determination took precedence.

ANSWER: **Paris** Peace Conference [accept **Versailles** Peace Conference]

<European History post-600>

7. The blood of Christ takes an unlikely trajectory and lands on the head of this artist in the *Weimar Altarpiece*, which was completed by his son after his death. For 10 points each:

[10] Name this artist who used an image of a winged snake with a ring in its mouth as his signature. He painted many scenes of Cupid and Venus, as well as a diptych of a nude Adam and Eve against a black background.

ANSWER: Lucas **Cranach** the **Elder** [prompt on Cranach; do not accept “Lucas Cranach the Younger”]

[10] Cranach painted Frederick the Wise engaging in this action outside Hartenfels Castle. Anthony van Dyck painted Charles I and his horse during a break from this action, which is done “in the Snow” in a Bruegel painting.

ANSWER: **hunt**ing [accept word forms; accept **stag hunt**]

[10] In a Cranach painting titled for this emotion, a woman whittles away at a stick, ignoring the fifteen babies dancing next to her. Another 16th-century artwork titled for this emotion includes a truncated polyhedron with a faint skull marking on it and a magic square.

ANSWER: **melancholy** [accept ***Melancholia*** or ***Melencolia I***]

<Painting/Sculpture>

8. “A way of seeing that was simultaneously not a way of seeing” led to this event according to Nick Pidgeon’s book *Man-Made Disasters*, a classic text in safety literature. For 10 points each:

[10] Identify this 1986 event that killed school teacher Christa McAuliffe and prompted the formation of the Rogers Commission.

ANSWER: **Challenger** disaster [accept equivalents mentioning the Space Shuttle **Challenger**]

[10] This physicist demonstrated the failure of O-rings in low temperatures by submerging one in a cup of ice water as a member of the Rogers Commission.

ANSWER: Richard **Feynman**

[10] This speechwriter quoted a John Magee poem mentioning the “surly bonds of Earth” for Ronald Reagan’s address following the Challenger disaster. She wrote the speech in which George H. W. Bush promised “Read my lips, no new taxes.”

ANSWER: Peggy **Noonan**

<US History>

9. In this film, an entire town waits all night to see a cruise liner, which promptly causes all of their boats to capsize. For 10 points each:

[10] Name this movie that begins with a festival at the start of spring in which an effigy of a witch is burned.

ANSWER: ***Amarcord***

[10] This other film by the director of *Amarcord* ends with clowns making a circus out of the spaceship movie set for a film that its protagonist Guido Anselmi cancelled due to writer’s block.

ANSWER: ***8½*** [or ***Otto e mezzo***]

[10] *Amarcord* and *8½* were directed by Federico Fellini, who hailed from this country. Other directors from this country, such as Sergio Leone, produced low-budget “spaghetti westerns.”

ANSWER: **Italy** [or **Italian Republic**; or Repubblica **Italia**na]

<Other Art (Film)>

10. The title character of a 2003 novel brings up one of these beings as an example of what she believes in, while being interrogated by a panel of judges at a prison camp deliberating her entry into the afterlife. For 10 points each:

[10] Identify these beings whose appearances in the writings of “the philosophers” and “the poets” are the subject of a metafictional novella styled as a pair of guest lectures delivered by the author’s alter ego Elizabeth Costello.

ANSWER: **animal**s [anti-prompt (ask “can you be less specific?”) on frogs]

[10] The protagonist of this novel by the same author develops compassion for the dogs that he euthanizes at Bev Shaw’s animal shelter, where he works after being forced to resign as an English professor after sleeping with a student.

ANSWER: ***Disgrace***

[10] This South African writer expressed his concern for animal welfare throughout novels such as *The Lives of Animals*, *Elizabeth Costello*, *The Life & Times of Michael K*, and *Disgrace*.

ANSWER: J. M. **Coetzee** [or John Maxwell **Coetzee**]

<Long Fiction>

11. Answer the following about the enzyme chymotrypsin, which is often studied as a model of protein structure and function, for 10 points each.

[10] Chymotrypsin preferentially cleaves proteins that can fit a tyrosine, tryptophan, or phenylalanine side chain ring into a “pocket” named for this property, defined as the tendency of some compounds to repel water.

ANSWER: **hydrophobic**ity

[10] Chymotrypsin is classified as a “protease” named for this amino acid, whose hydroxymethyl side chain is deprotonated by a histidine that has been bound to aspartate, forming a conserved “catalytic triad.”

ANSWER: **serine** [or **Ser**; or **S**]

[10] Elsewhere in the enzyme, another serine residue and a glycine form this structure, which stabilizes the deprotonated oxygen in the tetrahedral intermediate formed when the initial serine attacks the substrate.

ANSWER: **oxyanion hole**

<Biology>

12. Answer the following about the usage of animal noises as melodies, for 10 points each.

[10] The band Alestorm released a version of their album *No Grave but the Sea* that replaces the vocals with this noise. DMX imitates this noise in “X Gon Give it to Ya,” and it alternates with the title question of a Baha Men hit.

ANSWER: a dog **bark**ing [accept any answers indicating a noise produced by a **dog** such as **woof** or **hooh** or **arf**]

[10] Similarly, this group released a Kickstarter-backed remixed album that replaces its instrumentals with cat sounds. The covers of all three of this hip-hop duo’s self-titled albums include two hands shaped like a gun and fist.

ANSWER: **Run the Jewels** [or **RTJ**]

[10] Many YouTube song recreations, as well as the *Undertale* soundtrack, use the dog and cat noises from this 1992 SNES game’s “composer” feature, in which the user can create music to accompany looping animations.

ANSWER: ***Mario Paint***

<Trash>

13. Missionaries living in this ruler’s empire were negatively impacted by Clement XI’s bull *Ex Illa Die*, which forbade them from accommodating ancestor worship in their rites. For 10 points each:

[10] Name this ruler whose foreign policy accomplishments include mediating the Trinh-Nguyen (“trin-win”) civil war and signing the Treaty of Nerchinsk to conclude disputes with Russia.

ANSWER: **Kangxi** Emperor [or Emperor **Kangxi** or **Aixin-Jueluo Xuanye**; prompt on Aixin]

[10] Emperor Kangxi expelled members of this order as a result of the aforementioned “Chinese rites controversy.” Francis Xavier spread its teachings to India and China.

ANSWER: **Jesuit** Order

[10] This organization, which later operated under the auspices of the Canton system, set up a factory in Amoy in 1678 thanks to Kangxi’s policies. Lin Zexu (“dzuh-shoo”) helped spark a war by destroying much of this organization’s property.

ANSWER: **British East India** Company [or **BEIC**; prompt on East India Company]

<Other History>

14. Name these instruments from their appearances in *The Carnival of the Animals*, for 10 points each.

[10] In the movement “The Cuckoo in the Depths of the Woods,” the standard B-flat version of this instrument plays an ostinato over two pianos consisting of the notes C and A-flat. Carl Maria von Weber (“VAY-ber”) wrote two concerti for this instrument.

ANSWER: **clarinet**

[10] This string instrument represents the title bird of the movement “The Swan,” which has been recorded by Pau Casals and Yo-Yo Ma.

ANSWER: **cello** [or **violoncello**]

[10] The “Aquarium” movement was [emphasize] *originally* scored for piano, strings, and this instrument, though substitutes are frequently employed. Benjamin Franklin invented a new version of this instrument.

ANSWER: **glass harmonica** [or **glass harp** or **armonica** (without an “h”); BE CAREFUL and do not accept or prompt on “harmonica” or “harp” alone, and ask the player to spell the answer if you’re unsure]

<Music>

15. Bertrand Russell wrote an influential “Critical Exposition” of this man’s work, claiming that his private and public writing espoused two different philosophies. For 10 points each:

[10] Name this German philosopher and mathematician who wrote about his belief in “windowless” substances called monads. He discovered a concept, which he called “fluxions,” concurrently with Isaac Newton.

ANSWER: Gottfried **Leibniz**

[10] Leibniz coined this term for attempts to solve the problem of evil. Leibniz’s work titled for this concept relies on the principle of sufficient reason and states that we are living in the “best of all possible worlds.”

ANSWER: **theodicy**

[10] Leibniz’s *Theodicy* is often considered a type of theodicy named for this saint, who attacked Gnosticism in his *Against Heresies*. This philosopher’s theodicies are based on God being omnipotent and omnibenevolent.

ANSWER: Saint **Irenaeus**

<Philosophy>

16. A variant of this model predicts that a fifth gas giant planet was formed and ejected during the evolution of the Solar System. For 10 points each:

[10] Name this model proposed in 2005. According to this model, the Late Heavy Bombardment was caused by outward shifts in the orbits of Uranus and Neptune.

ANSWER: **Nice** (“NEESE”) model

[10] In the Nice model, the original cause of the Solar System’s instability was an orbital resonance of this ratio between Saturn and Jupiter. The orbital periods of Io and Europa also exhibit this ratio.

ANSWER: **one-to-two** [or **two-to-one**]

[10] The Nice model explains the low mass of this trans-Neptunian region of the Solar System, which is the source of short-period comets. Objects that reside here include cubewanos (“cue-bee-wah-nos”) and the dwarf planet Pluto.

ANSWER: **Kuiper belt** [or Edgeworth–**Kuiper belt**]

<Other Science (Astronomy)>

17. When this character’s love interest accepts his marriage proposal, he becomes so absurdly, deliriously happy, that he wanders the winter streets without a coat, neglects to sleep or eat for days, and finally oafishly arrives late to his own wedding after forgetting to clean his shirt. For 10 points each:

[10] Name this character who had earlier devoted himself to farming his property after being initially rejected by Kitty.

ANSWER: **Konstantin** **Dmitrich** **Levin** [any of these three names is fine, but reveal the answer as **Levin** if it’s missed]

[10] Levin is an autobiographical portrait of this Russian author, who made him the co-protagonist of his novel *Anna Karenina*.

ANSWER: Leo **Tolstoy** [or Count Lev Nikolayevich **Tolstoy**]

[10] Later in the novel, Levin attends a disappointing orchestral adaptation of this play in a scene that expresses Tolstoy’s own distaste for this play’s “mirthless jokes” and “coldly pompous, artificial ravings.”

ANSWER: ***King Lear***

<Long Fiction>

18. Saint Jerome’s *Against Helvidius* maintains that a man with this name was perpetually a virgin, just like his wife. For 10 points each:

[10] Give this name of the man who buried Jesus’ body in a tomb that might have been his own. That man with this name was from Arimathea and appeared in later legends as the keeper of the Grail.

ANSWER: **Joseph** (of Bethlehem and of Arimathea) [accept **Josephus** or **Yosef** or **Yusuf**]

[10] The story of Joseph of Arimathea’s imprisonment is recounted in this apocryphal text usually dated to the 4th century. It is named for a Pharisee who brought myrrh and aloe to embalm Jesus in the Gospel of John.

ANSWER: Gospel of **Nicodemus** [or **Acts of Pilate**; do not accept or prompt on “Acts”]

[10] The Gospel of Nicodemus also recounts this event, which in the Orthodox Church is celebrated by the liturgical colors changing from purple to white. In this event, Jesus rescued the Hebrew forefathers.

ANSWER: **Harrowing of Hell** [accept any answer indicating Jesus going to **hell** or **inferno**; accept ***Descensus Christi ad Inferos*** or **anastasis**]

<Religion>

19. In the 1920s, an essayist from this country argued that notions of ethnic superiority could be transcended through the development of a “cosmic race.” For 10 points each:

[10] Name this home country of Jose Vasconcelos. In *The Book of Lamentations*, Rosario Castellanos (“kah-stay-YAH-nos”) fictionalized an indigenous revolt during the creation of *ejidos* in this country.

ANSWER: **Mexico** [or United **Mexican** States or Estados Unidos **Mexicano**s]

[10] In an essay, Castellanos argued that this woman represents either a “traitor” or a “foundress” in modern-day thought. Elena Garro’s short story “Blame the Tlaxcaltecs” (“t’loss-CALL-tex”) is a modern retelling of this woman’s narrative.

ANSWER: La **Malinche** [or **Malinalli**, **Malintzin**, or Doña **Marina**]

[10] This husband of Elena Garro wrote about Mexican identity in an essay about “The Sons of La Malinche,” which appears in his book *The Labyrinth of Solitude*. His poetry collection *Sunstone* was inspired by the Aztec calendar.

ANSWER: Octavio **Paz**

<Miscellaneous Lit>

20. This leader invoked the Nickle Resolution in an attempt to deny Conrad Black from receiving a peerage, prompting Black to renounce one of his two citizenships. For 10 points each:

[10] Name this politician, who was attacked in an infamous ad asking “Is this a Prime Minister?” that triggered backlash due to perceived criticism of this politician’s facial features caused by Bell’s palsy.

ANSWER: Jean **Chrétien** (“crate-YAN”)

[10] In a hilarious 1995 incident, a prank caller pretended to be Chrétien by phoning this person, who laughed when Chrétien said “merde” or “shit” during the signing of the 1982 Constitution Act. This person referred to the year 1992 as an “annus horribilis.”

ANSWER: Queen **Elizabeth II** [prompt on the Queen or Elizabeth]

[10] Chrétien told this other Prime Minister to “act now, explain later” when he invoked the War Measures Act to end the October Crisis. The son of this popular Liberal Quebecquer is Prime Minister today.

ANSWER: **P**ierre **Trudeau** [prompt on Trudeau]

<British/CW History>