

ACF Regionals 2019

Packet by the editors (Matt Bollinger, Rob Carson, Will Holub-Moorman, Bruce Lou, Dylan Minarik, Eric Mukherjee, Will Nediger, Graham Reid, and Jennie Yang)

Tossups

1. DTPA and Iothalamate (“eye-oh-THALL-uh-mate”) are used in nuclear scans to determine the function of this organ. The fact that an abscess around this organ causes it to not move during respiration is called the Mathe (“MAH-thee”) sign. It’s not the brain, but an artery feeding into this organ is most commonly narrowed in fibromuscular dysplasia; stenosis of that artery is diagnosed using a captopril challenge test. The MDRD and Cockcroft–Gault equations are used to calculate the function of this organ from creatinine level. Damage to podocyte foot processes in this organ allows protein leakage into its tubules from the glomerulus. One section of this organ uses a countercurrent multiplier to create a concentration gradient; that is the loop of Henle. Chronic failure of this organ is treated using dialysis. For 10 points, name this organ whose functional unit is the nephron, which filters waste from blood.

ANSWER: **kidney** [anti-prompt (ask “can you be less specific?”) on renal tubule, glomerulus, Bowman’s capsule, proximal tubule or PT, proximal convoluted tubule or PCT, proximal straight tubule or PST, ascending/descending loop of Henle, distal tubule or DT, distal convoluted tubule or DCT, distal straight tubule or DST, collecting duct] <Biology>

2. At the opening of this musical, a character purchases a music box decorated with a monkey and remarks that it’s “exactly as she said.” In this musical, the chorus sings about “paper faces on parade” as a character is dressed up as the Red Death. That character from this musical, who is rumored to possess the Punjab lasso, stars in a production of *Don Juan Triumphant* after the murder of the original lead Piangi. At the end of Act 1 of this musical, a character known as the “Angel of Music” reprises a duet sung earlier by Raoul and his lover. The title character of this musical sings “All I Ask of You” as he angrily drops a chandelier on the audience. In this musical, the title character seduces Christine Daaé with the song “The Music of the Night.” For 10 points, name this musical by Andrew Lloyd Webber about a half-masked musical genius who lives below the Paris Opera house.

ANSWER: *The **Phantom of the Opera*** <Other Arts>

3. A young Civil War veteran named Henry Reeve rose to the rank of brigadier general while serving in this country’s army and died at the age of 26. Former slaves fighting as guerillas in this country were called *mambises* (“mahm-BEE-sace”) after a black officer who earlier deserted. An independence leader in this country nicknamed “the Bronze Titan” continued to lead resistance despite the truce declared by the Pact of Zanjón (“sahn-HONE”), which ended the Ten Years’ War. Hundreds of thousands of civilians in this country were herded into concentration camps by “Butcher” Weyler to crush its independence movement. This country’s national song “Guantanamera” (“gwan-tah-nah-MAY-rah”) was written by poet José Martí (“mar-TEE”). For 10 points, name this country whose independence was won after the United States drove the Spanish out after an 1898 war.

ANSWER: **Cuba** [or Republic of **Cuba**; or República de **Cuba**] <World History>

4. This poet wrote the word “disease” snaking down the page, one letter per row, at the end of a poem about the “broken cubes of Picasso,” entitled “Cubes.” The speaker assures himself “I reckon it’ll be me myself! Yes, it’ll be me” while imagining that someday people will put on plays about him at the end of this poet’s “Note on Commercial Theatre.” This poet described how “the stars went out and so did the moon” after a performance that took place “by the pale dull pallor of an old gas light.” A poem by this author ends with the image of a man sleeping

“like a rock or a man that’s dead” after doing a “lazy sway” while “droning a drowsy syncopated tune ... down on Lenox Avenue.” For 10 points, name this Harlem Renaissance poet of “The Weary Blues.”

ANSWER: Langston Hughes [or James Mercer Langston Hughes]

<American Literature>

5. A 1983 essay analyzed the implications of depicting this figure performing the “chin-chuck” gesture at another figure. This figure stands on a stool while writing into a book held by another figure in a number of paintings produced by Pinturicchio (“peen-too-REEK-yo”). In an essay titled for the “sexuality” of this figure “in Renaissance Art and in Modern Oblivion,” Leo Steinberg argued that certain painters produced an *ostentatio genitalium* (“os-ten-TAH-tee-oh gen-ee-TAH-lee-um”) by calling the viewer’s attention to this figure’s penis. Hugo van der Goes painted this figure lying on the ground in the central panel of the *Portinari Altarpiece*. This figure reaches out to touch a goldfinch held by John the Baptist in a painting by Raphael. For 10 points, name this figure who Renaissance painters often depicted being adored by the Magi.

ANSWER: Jesus Christ [accept either underlined portion; also accept Jesus of Nazareth, the Christ Child or the Infant Christ (all of the clues refer to the Christ Child) and any other answers that are clearly referring to Jesus; prompt on God]

<Painting>

6. Sergey Bulgakov defined this concept as the counterpart of the shared essence of all three persons of the Trinity. In the spiritual poem “Three Encounters,” Vladimir Solovyov described three visionary meetings with a woman who embodied this concept. In Gnosticism, the lowest Aeon (“EE-on”), which is named for this concept, creates the Demiurge while cut off from the One. The Book of Sirach (“SIGH-rack”) and Book of Ecclesiastes (“uh-KLEE-zee-ASS-teez”) belong to a genre of Ancient Near Eastern literature named for this concept, which names a deuterocanonical Old Testament book written in Greek and partly narrated by Solomon. A religious movement whose name contains the Greek words for God and this concept was founded by Helena Blavatsky. For 10 points, name this concept, whose “Holy” form is the namesake of a church-turned-mosque originally built by Justinian I.

ANSWER: Wisdom [or Sophia; or Divine Wisdom; or Holy Wisdom; or Hagia Sophia; do not accept “knowledge”]

<Religion>

7. It’s not “culture,” but an essay by Akhil Gupta and James Ferguson argues that a “hierarchy of purity” has been applied to this concept as part of its distinction from the “home.” Paul Rabinow’s first book is titled for “reflections” on an activity performed in these locations. A different use of this term describes settings structured by *nomos* to which agents adapt their dispositions, or *habitus*, in the sociological theory of Pierre Bourdieu (“boor-DYUH”). One thinker cited prioritizing the “imponderabilia of actual life” as one of the “commandments” of a certain activity in these locations laid out by the introduction of his book *Argonauts of the Western Pacific*. That thinker, Bronislaw Malinowski, argued for using these locations as the site of “participant observation.” For 10 points, give this general name for spaces studied by ethnographers, in which they record notes as part of its namesake “work.”

ANSWER: the field [or fields or fieldwork]

<Social Science>

8. Graphs that correspond to these objects are defined as the intersection points of line segments between parallel lines. Knuth (“k’NOOTH”) observed that only a certain class of these objects can be sorted by a simple stack-based algorithm. Any group is isomorphic to a group of these objects according to Cayley’s theorem. Elements of the alternating group of order n are these mathematical objects with even parity, and these objects are elements of the symmetric group. These objects can be decomposed into disjoint cycles or a product of transpositions, which are examples of these objects that exchange two elements. The number of these objects for n distinct elements is n

factorial. For 10 points, name these mathematical structures that correspond to ways of arranging objects where order matters, contrasted with combinations.

ANSWER: permutations [accept permutation graphs or groups of permutations]

<Other Science (Math)>

9. A prominent political activist established a nursing home at Campden Hill for babies whose fathers were fighting this war. Beginning in this war, women who served on naval vessels were nicknamed “Wrens”; Josephine Carr became the first Wren to die in this war when her ship was sunk. “Canary girls” were women whose skin turned yellow as a result of working with TNT to make munitions during this war. The International Congress of Women at the Hague, chaired by Jane Addams, was convened to protest this war. To shame men into enlisting into the army during this war, women handed out white feathers to young men not in uniform. A disagreement over support for this war caused a rift between mother and daughter Emmeline and Sylvia Pankhurst. For 10 points, name this war that led to women gaining the right to vote in Britain.

ANSWER: World War I [or WWI; or First World War; accept the Great War]

<British History>

10. In one of these locations, the protagonist faints when she discovers that a wax figure designed to serve as a *memento mori* is what lies behind a mysterious black veil. One of these places is the subject of a prophecy concerning what will happen “whenever the real owner should be grown too large to inhabit it.” In a novel named after one of these places, a miniature portrait of the Marchioness de Villeroi is discovered by Emily St. Aubert. In another novel named after one of these places, Friar Jerome turns out to be the father of Theodore, who is imprisoned in a giant helmet which had earlier crushed Manfred’s son Conrad to death. The title of Ann Radcliffe’s novel *The Mysteries of Udolpho* refers to one of these places. For 10 points, name these frequent settings in Gothic fiction, one of which named Otranto titles a Horace Walpole novel.

ANSWER: castles

<British Literature>

11. A special function named for Léon Brillouin (“bree-WANN”) is proportional to this quantity for a given value of J . In the classical limit, this quantity is proportional to a hyperbolic cotangent, given by the Langevin (“lon-zhuh-VAN”) function. This quantity is slowly and isentropically (“ice-en-tropically”) reduced in a refrigeration scheme that uses a working material called a “salt pill.” This quantity is the order parameter for the Ising (“EE-zing”) model. This quantity depends inversely on temperature, but depends linearly on applied field according to Curie’s law. When a material is cooled below the Curie temperature, domains with the same value for this quantity form spontaneously. For linear paramagnetic materials, this vector quantity equals the susceptibility times applied B-field. For 10 points, name this quantity analogous to electric polarization that has units of magnetic dipole moment per unit volume and is symbolized M .

ANSWER: magnetization [accept (average) magnetization per site; accept magnetic dipole moment per unit volume or magnetic dipole moment density until read; accept magnetic polarization until “electric polarization” is read; prompt on M (field) until read]

<Physics>

12. This god called on a turtle, a whale, and a mermaid to ferry his servant to the House of the Sun, where his servant found music to bring to Earth. When the married couple Tata (“TAH-tah”) and Nene (“NAY-nay”) started a fire, the smoke made this god so angry that he stitched their heads to their butts, creating the first dogs. After this god tricked a rival into drinking too much, his rival committed incest, and was so ashamed that he set himself on fire. Four children of Ometeotl (“oh-may-TAY-oh-tull”) are sometimes known as the “White,” “Black,” “Blue,” and “Red” versions of this god. In a creation myth, this god allowed his foot to be eaten to capture the crocodile monster

Cipactli (“see-POCKT-lee”), then replaced it with an obsidian mirror. For 10 points, name this Aztec god of darkness, the opposite number of Quetzalcoatl (“ket-sahl-koh-AH-tull”).

ANSWER: **Tezcatlipoca** [or **Smoking Mirror**; or **Obsidian Mirror**]

<Mythology>

13. A novel whose title begins with this word describes one of these things which is “entirely imaginary” and which “goes from life to death,” comparing it to “a novel, simply a fictitious narrative.” That novel whose title begins with this word is about a man who sets fire to a hut that serves as a rubber trading post in Africa, and later falls in love with the prostitute Molly while working at a Ford factory. A novel whose title begins with this word is about Ferdinand Bardamu and was written by Louis-Ferdinand Céline (“loo-EE-fair-dee-NAWN say-LEEN”). In another novel whose title begins with this word, a note written by the alchemist Arne Saknussemm inspires Otto Lidenbrock to venture into an Icelandic volcano with his nephew Axel. For 10 points, name this word which precedes “to the end of the night” and “to the center of the Earth” in the titles of French novels.

ANSWER: **journey** [or **voyage**; accept **Journey to the End of the Night** or **Voyage au bout de la nuit** or **Journey to the Center of the Earth** or **Voyage au centre de la Terre**]

<European Literature>

14. A composer from this country wrote a violin concerto that opens with the soloist playing a series of unaccompanied fingered harmonics before the bells enter in a duet with the violin. The E major second movement of a lyrical violin concerto by a composer from this country opens with horn and muted strings leading into a long, lush oboe solo. A concerto from this country has movements titled “1726,” “Chaconni,” and “Fly Forward.” Iso Briselli refused to premiere another concerto from this country due to its difficult *moto perpetuo* finale. This home country of violinist Hilary Hahn and composer Jennifer Higdon is also home to a composer who adapted the second movement of his string quartet into both a setting of the *Agnus Dei* and an *Adagio for Strings*. For 10 points, name this home country of Samuel Barber.

ANSWER: United States of **America** [or **United States** of America; or **USA**]

<Music>

15. One essay claims that this thinker ignores the “quality of risk” that surrounds a certain concept, which leads him to treat its “structural parasitism” as abnormal “etiologies.” In one work, this thinker argued that John Jones signing his name to a letter that states “This bull is dangerous” constitutes a method of “making explicit.” This philosopher, whose theories were criticized in Jacques Derrida’s essay “Signature Event Context,” noted that it is possible to say “I argue that” but not “I alarm you that” in explaining his system of classifying statements, their meaning, and their results. This philosopher formulated that division of locution, illocution, and perlocution as part of his theory of performative “speech acts.” For 10 points, name this ordinary language philosopher who wrote *How to Do Things With Words*.

ANSWER: John Langshaw **Austin** [or J. L. **Austin**]

<Philosophy>

16. Representative Henry May from this state was arrested and imprisoned in Fort Lafayette for suspected treason. Confederate general George H. Steuart was nicknamed after this state to avoid confusion with the more famous J. E. B. Stuart. A poet from this state, James Ryder Randall, wrote the lyrics to its current state song, which begins “the despot’s heel is on thy shore.” Soldiers passing through this state’s largest city were attacked by angry mobs in the Pratt Street Riot. The case *Ex Parte Merryman* challenged the suspension of *habeas corpus* in this state. The Emancipation Proclamation was issued five days after a battle in this state that was the bloodiest day in American history. For 10 points, name this border state in which the Battle of Antietam (“an-TEE-tum”) was fought.

ANSWER: **Maryland**

<American History>

17. An author who shares her name with this city fictionalized her sister Sally's death from cancer in Mexico in many of the stories from her book *A Manual for Cleaning Women*. The civil disobedience of a couple in this city is the subject of the novel *Every Man Dies Alone*, which has also been translated as *Alone in* [this city]. An author's experiences in this city inspired a novel in which William Bradshaw meets a spy who flees this city, sending William a postcard asking "What have I done to deserve this?" This city is home to the cabaret singer Sally Bowles in a novel which is the basis for the play *I Am a Camera*. For 10 points, *Mr Norris Changes Trains* is one of the two novels collected in a Christopher Isherwood volume named for what German city?

ANSWER: **Berlin** [accept Lucia **Berlin** or *Alone in Berlin* or *The Berlin Stories* or *Goodbye to Berlin*]

<Other Literature>

18. The music video for a song whose title expresses this sentiment consists of a single shot of the band members walking down a deserted Ventura Boulevard. That song whose title expresses this sentiment includes the lyrics "I said we were opposite lovers, you kept trying to prove me wrong." The music video for another song whose title expresses this sentiment ends with the singer asking "Does this sound like a helicopter?" This sentiment is expressed by the title of a 1969 Motown hit whose iconic bassline was probably performed by Wilton Felder, and whose lyrics state that "all I want, all I need" is "one more chance to show you that I love you." For 10 points, identify this sentiment expressed by the titles of songs by Haim ("hime"), Cher Lloyd, and the Jackson 5.

ANSWER: **wanting** the addressee **back** [or **wanting** you **back**; accept "I **Want You Back**"]

<Trash>

19. An inquisitive European ruler with this name tried to raise infants without any human interaction to try to see if there existed a natural human language, and wrote a treatise on falconry from his own experiments. A ruler with this name printed the cryptic monogram A.E.I.O.U. on all his belongings and lost Vienna to Matthias Corvinus' Hungarian army. A ruler with this name was nicknamed *stupor mundi* ("STOO-pore MOON-dee"), or "wonder of the world," for his energy and erudition. The Lombard League was established to counter a ruler with this name's attempts to take over Northern Italy. The German army that participated in the Third Crusade was thrown into chaos when a ruler with this name drowned in the Saleph River. For 10 points, name this name shared by three Holy Roman Emperors, the first of whom was nicknamed "Barbarossa."

ANSWER: **Frederick** [accept **Frederick** II; accept **Frederick** III; accept **Frederick** I; accept **Frederick** Barbarossa]

<European History>

20. A complex that contains iridium and a complex that contains this metal are used in a single-electron transfer photoredox system developed by the Molander group. An easy source of the zero form of this element is Jamison's series of precatalysts, which contain this element bonded to phosphine and toluene. A complex in which this element is coordinated to two cyclo-octadiene ligands is a common cross-coupling catalyst. It's not iron, but this element forms the transition metal metallocene with the highest electron count. The Mozingo reduction, or removal of a thioacetal group, is catalyzed by an alloy of aluminum and this element named for Raney. A pure form of this element is formed by heating its tetracarbonyl form in the Mond process. For 10 points, name this transition metal that, like iron and cobalt, is ferromagnetic, with atomic number 28 and symbol Ni.

ANSWER: **nickel** [accept **Ni** until read]

<Chemistry>

21. A paper with this adjective in its title imagines a scenario in which frogs try to minimize their "domain of danger" when a snake appears in the middle of a circular lily pond. That paper, which is titled for a herd described by this adjective, is by W. D. Hamilton. A book with this adjective in its title discusses the benefits of a "conspiracy of doves," building on an example developed by John Maynard Smith. That book with this adjective in its title

coined the name for the green-beard effect. A 1976 book refers to units of human cultural evolution as “memes” uses this adjective to describe elements which enhance their own transmission, often at the expense of the organism as a whole. For 10 points, a book by Richard Dawkins is named after what type of gene?

ANSWER: **selfish** [accept “Geometry for the **Selfish** Herd” or *The **Selfish** Gene*]

<Biology>

Bonuses

1. This man died during the week of Richard Nixon's visit to China in 1972, and half his ashes are buried on the Peking University campus. For 10 points each:

[10] Name this journalist who spent months interviewing Chinese Communists in the Long March to produce his book *Red Star Over China*.

ANSWER: Edgar **Snow**

[10] This leader of the Long March narrated his autobiography to Edgar Snow. This Hunan native formed an alliance against Japan in 1936 with his great rival, Chiang ("chang") Kai-shek, in the Xi'an ("shee-on") Incident.

ANSWER: **Mao** Zedong

[10] One of the propaganda highlights of the Long March was the capture of one of these structures in Luding County, Sichuan ("SUH-wahn"). The Japanese invasion of China proper began with a skirmish at one of these structures in Beijing named after Marco Polo.

ANSWER: **bridges** [or **qiao**; accept Battle of Luding **Bridge**; accept Marco Polo **Bridge** Incident]

<World History>

2. In one essay, this sociologist argued that the linkage of antiracism to democratic politics after World War II constituted a so-called "break" with the tradition of white supremacy. For 10 points each:

[10] Name this American sociologist, best known for developing the perspective of "racial formation theory" along with Michael Omi.

ANSWER: Howard **Winant**

[10] Racial formation theory analyzes race as the product of this two-word process of turning perceptions and interactions into common assumptions, the name for which was coined in the title of a book by Peter Berger and Thomas Luckmann.

ANSWER: **social construction** [or **social constructionism**; accept *The **Social Construction** of Reality*]

[10] According to Winant and Omi, a key aspect of the social construction of race in America were state laws that established this informally-named "rule" of hypodescent, which defined people as black who had *any* black ancestry.

ANSWER: **one-drop** rules [or **one-drop** statutes]

<Social Science>

3. G. E. Hutchinson defined these constructs as n-dimensional hypervolumes of environmental conditions that would allow a species to live indefinitely. For 10 points each:

[10] Name these ecological constructs that Hutchinson divided into fundamental and realized versions. When these constructs for two species overlap, interspecific competition occurs.

ANSWER: **niches**

[10] When two species are competing for the same limited resource, this effect can occur, in which the weaker species is completely removed from the habitat.

ANSWER: **competitive exclusion** [prompt on partial answer]

[10] Joseph Connell conducted seminal work on interspecific competition on these animals' *Chthamalus* and *Balanus* genera in intertidal zones. They are sessile arthropods of the infraclass Cirripedia.

ANSWER: **barnacles**

<Biology>

4. This author's correspondence with Eudora Welty was published as *Meanwhile There Are Letters*. For 10 points each:

[10] Name this mystery novelist who wrote about the detective Lew Archer in novels like *The Galton Case* and *The Drowning Pool*.

ANSWER: Ross Macdonald [or Kenneth Millar]

[10] Some critics consider Macdonald to be the greatest American author of hard-boiled detective fiction, surpassing this man who wrote about Philip Marlowe in *The Big Sleep* and *The Long Goodbye*.

ANSWER: Raymond Chandler [or Raymond Thornton Chandler]

[10] Ross Macdonald got Lew Archer's name from Lew Wallace and Miles Archer, the latter of whom is the partner of this character who tries to track down an object made by the Knights of Malta in a 1930 novel.

ANSWER: Sam Spade [accept either underlined portion]

<American Literature>

5. A series of mass executions by drowning in this city's Loire ("lwahr") River led to the river being nicknamed the "national bathtub." For 10 points each:

[10] Name this city in Western France. Pope Clement VIII claimed that a law signed in this city "crucified [him]." The Edict of Fontainebleau ("fon-ten-BLOW") revoked that law.

ANSWER: Nantes [accept Edict of Nantes]

[10] The Edict of Nantes ("nahnt") was promulgated by this founder of the Bourbon dynasty, who converted to Catholicism after winning the French Wars of Religion.

ANSWER: Henry IV [accept Henry III of Navarre; prompt on Henry; do not accept or prompt on "Henry III"]

[10] The drownings at Nantes occurred during the War in the Vendée ("von-DAY"), which was partly triggered by the imposition of this system of mass conscription of all able-bodied men.

ANSWER: levée en masse [or mass levy]

<European History>

6. This artist depicted a ghost squeezing blood out of her hair in front of her husband, who had earlier poisoned her with facial cream. For 10 points each:

[10] Name this member of the Utagawa school, whose many other scenes of the supernatural include one in which the Princess Takiyashi summons an enormous "skeleton spectre" that dominates the right and center panels.

ANSWER: Utagawa Kuniyoshi [or Kuniyoshi Utagawa]

[10] Kuniyoshi was a practitioner of the *ukiyo-e* ("oo-kee-yo-EH") style of woodblock print that was popular in this country between the 17th and 19th centuries.

ANSWER: Japan [or Nippon]

[10] Kuniyoshi was placed at the end of the art historian Nobuo Tsuji's "lineage of eccentrics," a phrase that titles his best-known book and a collaborative exhibition at the Boston MFA by Tsuji and this contemporary Japanese pioneer of the "superflat" aesthetic.

ANSWER: Takashi Murakami

<Painting>

7. This quantity generally increases with atomic number across periods, and decreases down columns. For 10 points each:

[10] Name this amount of energy needed to liberate one electron from a neutral atom.

ANSWER: first ionization energy [accept molar ionization energy; or ionization potential]

[10] This technique uses high-energy photons to eject electrons from a sample, measuring the elemental composition of the surface. It doesn't work well for hydrogen or helium.

ANSWER: X-ray photoelectron spectroscopy [or XPS]

[10] This other photoelectron spectroscopy technique measures the spatial distribution of electrons emitted by a material illuminated by soft X-rays or UV light. This technique allows researchers to study a material's electronic band structure.

ANSWER: angle-resolved photoemission spectroscopy [or ARPES; or angle-resolved ultraviolet photoemission spectroscopy; or ARUPS]

<Chemistry>

8. This man oversaw a contest between two gods, deciding to name his city after a goddess who gifted it an olive tree. For 10 points each:

[10] Name this culture hero, an ancient king of Athens with the upper body of a man and the lower body of a snake.

ANSWER: **Cecrops I**

[10] Cecrops (“SEE-crops”) judged that Athena’s olive tree was better than the salt sea created by this Greek god of earthquakes, horses, and the ocean.

ANSWER: **Poseidon**

[10] This daughter of Cecrops goes insane along with her sister Herse after opening a box containing Erichthonius (“eric-THOH-nee-us”). In the *Metamorphoses*, she enviously blocks Mercury from sleeping with Herse, and Mercury turns her to stone.

ANSWER: **Aglauros**

<Mythology>

9. In the 19th century, Emilio De Fabris added a Gothic Revival façade to a building in this city whose plan was significantly enlarged by Francisco Talenti. For 10 points each:

[10] Name this Italian city whose cathedral is topped by a pioneering double-shelled dome designed by Filippo Brunelleschi.

ANSWER: **Florence** [or **Firenze**; accept the **Florence** Cathedral]

[10] The original plan for the Florence Cathedral was created by this architect, who also designed the Basilica di Santa Croce and the Palazzo Vecchio.

ANSWER: **Arnolfo** di Cambio [or **Arnolfo** di Lapo; prompt on di **Cambio** or di **Lapo**]

[10] The Piazza del Duomo is also home to a *campanile*, or bell tower, designed by this artist. He also painted two fresco series, on the lives of Mary and Christ, for the Scrovegni (“scro-VAIN-ye”) Chapel.

ANSWER: **Giotto** [or Giotto di **Bondone**]

<Other Arts>

10. A Donald Keene survey of Japanese literature up to the late 16th century is entitled *Seeds in* [this body part]. For 10 points each:

[10] Name this body part. A Natsume Soseki novel in which Sensei tells the narrator about his life in a lengthy “testament” is named after a Japanese word for this body part.

ANSWER: the **heart** [prompt on **kokoro**]

[10] Among the novels discussed in Keene’s *Seeds in the Heart* is the classic tale of this “shining prince” by Lady Murasaki.

ANSWER: Hikaru **Genji** [accept *The Tale of* **Genji**]

[10] This Japanese title of *The Tale of Genji*’s ninth chapter is translated by Edward Seidensticker as “Heartvine.” A lady of this all-vowel name is Genji’s first wife.

ANSWER: “**Aoi**”

<World Literature>

11. This man was so determined to preserve Hoover Dam’s name as Boulder Dam that he used the term “Boulder Dam” dozens of times in his dedication speech for the dam. For 10 points each:

[10] Name this Secretary of the Interior during Franklin D. Roosevelt’s administration, during which he helped organize Marian Anderson’s concert on the steps of the Lincoln Memorial.

ANSWER: Harold **Ickes**

[10] Marian Anderson was earlier prevented from performing at this organization’s Constitution Hall. Eleanor Roosevelt resigned from this organization after they refused to let Anderson perform.

ANSWER: **Daughters of the American Revolution** [or **DAR**]

[10] Ickes headed the Public Works Administration, which built public infrastructure as part of this larger program by Franklin D. Roosevelt to lift the United States out of the Great Depression.

ANSWER: **New Deal**

<American History>

12. The lyrics of the Talking Heads song “I Zimbra” (“ee ZIM-bruh”) are adapted from a poem by this author. For 10 points each:

[10] Name this poet who covered his body in cardboard tubes and wore lobster-like claws on his hands during a recitation of his sound poem “Karawane.”

ANSWER: Hugo **Ball**

[10] Hugo Ball wrote a manifesto of this anti-art movement that developed in reaction to World War I.

ANSWER: **Dadaism**

[10] Ball’s performance of “Karawane” took place at a cabaret named for this author, who criticized religious fanaticism in his epic poem *La Henriade* (“on-ree-ODD”).

ANSWER: **Voltaire** [or François-Marie **Arouet**]

<European Literature>

13. While biological samples can be analyzed with radiocarbon dating, older rocks are often analyzed with other techniques. For 10 points each:

[10] One dating scheme uses inverse beta decay of potassium-40 to this element with atomic number 18. Newer methods compare the ratio of two isotopes of this element using mass spec after exposing a sample to radiation.

ANSWER: **argon** [or **Ar**; or **argon-40**; accept potassium–**argon** dating or **argon**–argon dating]

[10] Argon dating methods have been used to study this material’s creation, which Harry Hess explained using mantle convection. This material is created at spreading centers along mid-ocean ridges.

ANSWER: **oceanic crust** [or **seafloor**; accept mid-ocean ridge **basalt** or **MORB**; accept **seafloor spreading**; prompt on partial answer]

[10] Another method of dating rocks measures the number of features left by decay events of this type, rather than measuring the number of decay products. One element that decays by this process exists in the minerals coffinite and pitchblende.

ANSWER: spontaneous **fission** [accept **fission** track dating]

<Other Science (Earth Science)>

14. This text outlines “three models” of “root,” “source,” and “use” that it uses to argue in favor of the existence of ghosts and against the doctrine of fatalism. For 10 points each:

[10] Name this Chinese philosophical text. It advocates an attitude that values all others equally to oneself, a doctrine variously translated as “impartial concern” or “universal love.”

ANSWER: the **Mozi** (“MO-tzuh”)

[10] The *Mozi* condemns this activity as useless, contradicting Confucius’s claim that a form of it called *yayue* (“YAH-y’weh”) can promote good governance. It’s not poetry, but in the *Republic*, Plato argued that innovation in this activity could endanger the state.

ANSWER: playing **music** [accept word forms that refer to producing or listening to music; accept **dance**, as *yayue* generally involved an accompanying dance]

[10] Mohists’ criticism of music is often used as an example of their support for the “state” form of this ethical theory, which, in contrast to deontology, argues the outcomes of actions are the sole basis for deciding their morality.

ANSWER: state **consequentialism** [or **consequentialist**; prompt on **utilitarianism**, because Mohism isn’t really interested in maximizing happiness]

<Philosophy>

15. During this event, the Buddha declared that he entrusted the “true Dharma eye” to Mahakasyapa (“muh-hah-kuh-SYAH-puh”) for comprehending *tathata* (“tah-tuh-tah”), or “inexpressible suchness.” For 10 points each:

[10] Name this event in which the Buddha silently held up an object in front of his disciples, only one of whom, Mahakasyapa, responded correctly by smiling.

ANSWER: the **Flower Sermon** [or **Nian Hua Wei Xiao**]

[10] The Flower Sermon is often cited as an origin story for this school of Buddhism, which was brought to China by Bodhidharma. Adherents of its Rinzai school meditate on *koans* to attain enlightenment.

ANSWER: **Zen** Buddhism [or **Chan** Buddhism]

[10] The largest Zen Buddhist sect in Japan, the Soto school, was founded by this author of *The True Dharma Eye*. He emphasized *shikantaza* (“shee-kahn-tah-zah”), or silent meditation without contemplation of *koans*.

ANSWER: **Dōgen** [or Kigen **Dōgen**; or **Dōgen** Zenji; or Eihei **Dōgen**; or Koso **Joyo Daishi**]

<Religion>

16. The term “blackmail” comes from the name for money that settlers in one of these areas between England and Scotland paid for protection from bandits. For 10 points each:

[10] Name these areas which served as a sort of border zone between two kingdoms. These areas between England and Wales were ruled by namesake lords.

ANSWER: **marches** [accept Scottish **Marches**; accept Welsh **Marches**; accept **Marcher** Lords]

[10] The Welsh Marches were formed when this first Norman king of England tried unsuccessfully to conquer Wales.

ANSWER: **William I** [or **William the Conqueror**; or **William the Bastard**; prompt on **William**]

[10] This mass survey of England and the Welsh Marches was ordered by William and completed in 1086. Its primary goal was to find out how much tax revenue William could earn.

ANSWER: **Domesday** (“DOOMS-day”) Book [do not accept or prompt on “Doom Book”]

<British History>

17. An early success of this theory was its explanation of the precession of the perihelion of Mercury. For 10 points each:

[10] Name this theory that describes gravitational attraction in terms of curved space-time, building on an earlier “special” theory that introduced Lorentz invariance in the setting of flat space-time.

ANSWER: **general relativity** [or **GR**; accept **geometrodynamics**; do not accept or prompt on “special relativity”]

[10] In addition to gravitational deflection of light by the sun measured by Eddington during a solar eclipse, this effect, due to the energy a photon gains or loses in a gravitational field, was one of the classical tests of general relativity. It was measured by Pound and Rebka using gamma rays produced by iron 57.

ANSWER: **gravitational redshift** [prompt on **redshift**]

[10] The Pound–Rebka experiment also verified the prediction of gravitational time dilation, which can be calculated using this mathematical object for a gravitational curved spacetime. This object quantifies spacetime curvature and can be written in terms of an infinitesimal spacetime interval, *ds*, squared, or as a rank-2 tensor.

ANSWER: **metric** [or **metric** tensor]

<Physics>

18. Answer the following about Shakespeare’s sexual puns, for 10 points each.

[10] This word was an Elizabethan euphemism for a woman’s genitalia, which makes the title *Much Ado About* [this word] a naughty pun.

ANSWER: **nothing** [accept *Much Ado About* **Nothing**]

[10] In discussing medlar fruits, this character tells his friend “Oh, that she were an open arse, and thou a poperin pear,” which is a pun on the phrase “pop ’er in.” He also counsels “If love be rough with you, be rough with love.”

ANSWER: **Mercutio**

[10] Sonnet 52, which like most of Shakespeare’s sonnets is addressed to this unnamed young man, includes a pun on “pride,” which was Elizabethan slang for a penis, in a line about “unfolding his imprison’d pride.”

ANSWER: **Fair Youth**

<British Literature>

19. Despite being extremely popular in his day, Antonio Vivaldi’s music went largely ignored after his death until the 20th century. Name some things about his revival, for 10 points each.

[10] Fritz Kreisler helped spur interest in Vivaldi’s music by writing a Concerto in C, in the Style of Vivaldi, for this instrument. This instrument is also featured in Vivaldi’s own *L’estro Armonico* and *Four Seasons*.

ANSWER: **violin**

[10] This conductor programmed a Concerto Grosso by Vivaldi for the first-ever concert of the NBC Symphony Orchestra, held on Christmas Day 1937. He led that orchestra for 17 years.

ANSWER: Arturo **Toscanini**

[10] Alfred Casella organized a *Vivaldi Week* in Siena in 1939, during which this sacred piece was revived. The motets *Longe Mala* and *Ostro Picta* were written as *introduzioni* to this piece, the second of only two of Vivaldi’s pieces of its kind to survive.

ANSWER: **Gloria** [or **Gloria in excelsis Deo**; or **RV 589**]

<Music>

20. The controversial modernist Vaillancourt Fountain can be found in the Justin Herman Plaza in this area, which was once home to such iconic skateboarding spots as the Hubba Hideout and the Gonz Gap. For 10 points each:

[10] Name this urban waterfront area that stretches from Pier 45 to Oracle Park. The Ferry Building Marketplace and the Exploratorium can be found here.

ANSWER: the **Embarcadero**

[10] The Embarcadero was constructed on reclaimed land in this California city, which is connected to Oakland by the Bay Bridge.

ANSWER: **San Francisco** [prompt on **SF**]

[10] The Embarcadero and the Presidio are the two endpoints of this San Francisco street, which forms part of US Route 101. A one-block section of this street on Russian Hill that has eight hairpin turns is known as the “crookedest street in the world.”

ANSWER: **Lombard** Street

<Geography>

21. This novel’s title character works for Doctor Sangrado, who prescribes drinking water as a treatment for all illnesses. For 10 points each:

[10] Name this early 18th-century novel about the adventures of a valet from the village of Santillana (“sahn-tee-YAH-nah”).

ANSWER: **Gil Blas**

[10] *Gil Blas* (“zheel blah”) is an example of this genre of fiction focusing on roguish heroes who live by their wits.

ANSWER: **picaresque**

[10] A French literary periodical named after *Gil Blas* serialized a number of Émile Zola novels, including this novel about a miners’ strike, titled for a month in the French Revolutionary calendar.

ANSWER: **Germinal**

<European Literature>