



ACADEMIC  
COMPETITION  
FEDERATION

# ACF NATIONALS 2019

## PACKET 5

Packet by

# Chicago A + Penn State A

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## Tossups

1. A function notated “1 - F10” appears in Womersley’s equation for the flow in this substance, which assumes that its pressure gradient varies periodically. This substance is analogized to the current flowing through a two, three, or four element circuit, or to the water in an inverted air-filled chamber, in the Windkessel model. Fahraeus and Lindqvist noted that the apparent viscosity of this substance as predicted by Poiseuille’s equation decreases with decreasing diameter. Assuming negligible external pressure, the circumferential stress exerted by this non-Newtonian fluid is equal to luminal pressure times the radius, divided by wall thickness, according to Laplace’s law. Frank-Starling curves show the increase in the stroke volume of this fluid in response to increased end diastolic pressure. Hemodynamics is the study of, for 10 points, what fluid in capillaries, veins, and arteries?

ANSWER: **blood**

<Biology>

2. When a woman in this city suggests cutting off her son’s index finger to stop him from going to war, her husband replies that if every mother did that, armies would fight without index fingers. A mathematician from this city claims that another character has improved geometry by providing a common denominator for space and volume. While visiting this city, a character mocks meetings held at lakeside terraces on the eve of battle, likely referencing the author’s history as a diplomat ahead of World War I. In a play set in this city, characters repeatedly oil the hinges of the Gates of War; that play ends with Demokos provoking a conflict in this city by lying about who killed him. Christopher Fry gave the English title *Tiger at the Gates* to his translation of a Jean Giraudoux play whose original title says that a conflict here “will not take place.” For 10 points, a conflict named for what city is the background for Racine’s play *Andromaque*?

ANSWER: **Troy** [or **Ilium**]

<European Literature>

3. The eighth chapter of a 1985 book subtitled for “people and institutions” that “confront” this entity presents a “case study in intimidation” from Tucson, Arizona, in which a woman named Sheila Scoville is investigated by the law professor Boris Kozolchyk. A critical review in the *New York Review of Books* by Michael Massing of a publication titled for this entity points to the thin evidence for the claim that an organization led by Thomas Dine caused the electoral defeat of Senator Charles Percy. This entity, which was criticized in *They Dare to Speak Out* by former Illinois congressman Paul Findley, was characterized as “policing” academia and helping to shape policy in Syria and Iraq in a 2006 essay in the *London Review of Books* that generated outraged responses from Jeffrey Goldberg and Alan Dershowitz. Stephen Walt and John Mearsheimer linked “U.S. foreign policy” to, for 10 points, what coalition of special interest groups that includes AIPAC?

ANSWER: **Israel lobby** [accept answers indicating groups that **lobby** or **advocate** on behalf of the State of **Israel**; accept **pro-Israel groups** or similar answers; accept *The Israel Lobby and U.S. Foreign Policy*; prompt to be less specific on “AIPAC” before “AIPAC”]

<Social Science>

4. A ruler of these people who minted distinctive coins, King Ballaios, may have been the same person as their envoy Bessus. After winning a war against these people, Rome forced them to accept rule by their client Demetrius of Pharos, who in turn rebelled against Rome along with their leader Scerdilaidas. In the first century A.D., they launched a four-year war against the Roman Empire called the “War of the Two Batos.” This people originally developed the swift Liburnian galleys that won the Battle of Actium for Augustus. After the death of King Agron, this people was ruled by Agron’s widow, who had a Roman ambassador assassinated for insulting her policy of allowing piracy. The Roman Republic fought three wars against these people, the first of which began in 230 B.C. in response to their expansion under Queen Teuta. For 10 points, name this collection of tribes that lived on the shore of the Adriatic Sea.

ANSWER: **Illyrians** [or **Illyrii**; or **Ardiaei**; or **Iapyges**; or **Messapi**]

<European History>

5. This thinker observed that in the High Middle Ages, people were universally interlocked by common religious experience as participants in a “theonomous culture.” This thinker argued that God must be understood as the ground of being-itself but not *as* being, otherwise faith in God would not quell anxiety about the finitude of life. This thinker advocated the rejection of any claim about divine truth made in the name of historic reality as part of his Protestant Principle. This man conceived of theology as matching the answers provided by revelation to the questions raised by human existence, which he termed the “method of correlation.” In his most widely-read work, this theologian urges people to draw upon the “God above God” to affirm themselves as individuals in the face of a meaningless universe. For 10 points, name this author of *Systematic Theology*, a German-born existential theologian who wrote *The Courage to Be*.

ANSWER: Paul (Johannes) Tillich

<Religion>

6. One of this author’s characters writes a poem about a glow-worm who is resentful of the fairies who depend on him to provide light for their parties. This author wrote two of the three novels that are analyzed in Eve Kosofsky Sedgwick’s essay “The Character in the Veil.” In the frame story of one novel by this author, an Englishman asks a priest why a certain assassin is being sheltered in a Neapolitan church. The protagonist notices an uncanny resemblance between a nun at the convent of St. Clair and a miniature portrait found among her father’s belongings in another novel by this author, who was nicknamed “The Great Enchantress.” The villainous priest Father Schedoni attempts to prevent Ellena Rosalba and Vincentio di Vivaldi from marrying each other in this author’s novel *The Italian*. In her most famous novel, Signor Montoni keeps Emily St. Aubert captive in the title Italian castle. For 10 points, name this author of the Gothic novel *The Mysteries of Udolpho*.

ANSWER: Ann Radcliffe [or Ann Ward]

<British Literature>

7. A former holder of this position unilaterally released notes from a meeting with Harry Truman to force him to agree to the 1951 Accord. The Nixon Administration floated false stories that an occupant of this position was demanding a pay raise to pressure him to carry out Nixon’s request to “kick ‘em in the rump a little.” Car dealers mailed coffins filled with car keys, and farmers blockaded a building with tractors, to protest the actions of an occupant of this position who forced the United Auto Workers to accept wage cuts in negotiations with Chrysler. Arthur Burns and Marriner Eccles held this position, which was later occupied by a former member of Ayn Rand’s “Collective” who coined the term “irrational exuberance” in describing the dot-com bubble. For 10 points, name this position of economic stewardship that oversees the FOMC, held by Paul Volcker, Alan Greenspan, and Ben Bernanke.

ANSWER: Chair of the Federal Reserve [or the Chair of the Board of Governors of the Federal Reserve System]

<American History>

8. Jascha Heifetz included a canon in the middle of his arrangement of a song from this country, which he transposed upwards a half-step from F major to F-sharp major; that song was published in English as “My Little Star.” A clarinet solo in A-minor begins a piece from this country, which is not Venezuela, that Gustavo Dudamel and the Simón Bolívar Youth Orchestra helped to popularize by using it as an encore while on tour. A bass clarinet sixteenth-note trill, starting on the notes C-sharp and D, runs throughout much of a piece from this country, scored for an orchestra with a large percussion section including raspador and maracas. That piece from this country was inspired by Cuban poet Nicolás Guillén and depicts the ritual sacrifice of a snake to an African-derived god. Arturo Márquez and Manuel Ponce are composers from this country, as is the composer of *Sensemaya*. For 10 points, the composer Silvestre Revueltas is from what country, where revolutionaries popularized the folk song “La Cucaracha”?

ANSWER: Mexico [or United Mexican States; or Estados Unidos Mexicanos; do not accept or prompt on “Estados Unidos,” which refers to the U.S.]

<Music>

9. A 2015 paper providing an “incomplete map of the metaphysics” of this concept advances the “constructionist functionalism” view of it. This is the [emphasize] *last* title concept of an essay that compares it to the categorical imperative and analyzes it using Kant’s conception of volition and the will. That Harry Frankfurt essay is titled for “Autonomy, Necessity, and [this concept].” The curtailing of autonomy in the “enduring” form of this concept is said to lead to the creation of a new entity by shifting the boundaries of identity, according to a work by Robert Nozick that claims this concept results in the creation of the “we.” There are “robust concern” and “union” views of this concept, which according to another theory entails bestowing value upon its subject. For 10 points, name this concept referred to by the Greeks as *agape* or *philia*.

ANSWER: **love** (the paper in the leadin is by Carrie Ichikawa Jenkins)

<Philosophy>

10. This metal is found in a hexameric enzyme in which it is bound by an N-terminal 9-amino acid long “binding hook” motif and in an atypical +3 oxidation state. This metal is found in the center of a class of salts which baffled scientists due to existing as either blue and paramagnetic or yellow and diamagnetic. Lifschitz salts contain this element which is central to a prokaryotic form of superoxide dismutase. Complexes of the +2 ion of this element sometimes display anomalous magnetism due to existing in both square planar and tetrahedral configurations. This element forms a paramagnetic, bright green sandwich compound with 20 electrons. Purification of this element is reliant on the formation of a tetracarbonyl complex which is decarbonylated at mild conditions. It is disputed whether the d8 or d9 configurations of this element has a lower energy. For 10 points, name this ferromagnetic element found after cobalt in the periodic table.

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

<Chemistry>

11. The first instances of the phrases “Wranslide” and “Wran’s our Man” comes from a 13-seat swing in an election in this decade won by Neville Wran’s party. A politician “sacked for disloyalty” in this decade defended his tenure in a series of newspaper articles entitled “I Did It My Way.” A politician cast the tie-breaking vote against himself in a no-confidence vote during this decade after describing the tie as “not a vote of confidence.” In this decade, John Gorton was succeeded by William McMahon, whose loss during the next election cycle led to the first Labor government in twenty-three years. Malcolm Fraser became prime minister in this decade after a crisis arose when the government failed to pass a bill of supply, ending with Governor-General John Kerr unexpectedly dismissing Gough Whitlam as Prime Minister. For 10 points, name this decade, in which Australia pulled out of southeast Asia towards the end of the Vietnam War.

ANSWER: **1970s** [prompt on “the seventies”]

<World History>

12. This process may be improved by the use of “high-foot” pulses or “adiabat shaping,” according to experiments by Omar Hurricane et al. In this process, capsules are often supported by tent-like membranes whose main drawback is that they seed hydrodynamic perturbations which reduce efficiency. The Rayleigh-Taylor instability impedes this process because it tends to break spherical symmetry, and can only be avoided by delivering energy as symmetrically as possible. In this process, ablation of material from the surface of the target forces the underlying material to travel inward due to momentum conservation. A hohlraum, or cylindrical shell, is heated so that it radiates X-rays onto the target in the “indirect drive” version of this process, which is used by the National Ignition Facility at Lawrence Livermore National Laboratory. For 10 points, name this technique for igniting nuclear fusion in which laser beams are fired at a piece of fuel to compress it into a hot plasma held together by its own mass.

ANSWER: **inertial confinement fusion** [or **ICE**, prompt on “fusion” or “nuclear fusion” or “laser fusion” before mentioned]

<Physics>

13. This poet wrote of bending a knee to the “alien gods” of the “great western world” in a poem that laments “Something in me is lost,” entitled “Outcast.” Despite the title place’s “tiger’s tooth,” the speaker of a poem by this author exclaims “I will confess / I love this cultured hell that tests my youth!” This poet wrote of becoming “hungry for the old, familiar ways” while gazing at piles of “tangerines and mangoes and grape fruit, / Fit for the highest prize at parish fairs.” Apocryphally, Winston Churchill gave a radio address quoting a poem by this author that asks “What though before us lies the open grave?” and calls for facing a “murderous, cowardly pack.” During the 1919 Red Summer, this poet of “America” and “The Tropics in New York” wrote that poem, which follows its title phrase with the words “let it not be like hogs / Hunted and penned in an inglorious spot.” For 10 points, name this author of “If We Must Die,” a Jamaica-born poet and novelist of the Harlem Renaissance.

ANSWER: Claude McKay

<American Literature>

14. A genre of writing named for this concept is defined by its inevitability, according to *The Watchdog That Didn't Bark*, Dean Starkman’s post-mortem of the 2008 financial collapse. Christopher Hitchens declared that this factor “is all,” whereas “analysis and criticism are nowhere,” in reviewing Bob Woodward’s 1996 book *The Choice*. Elaina Plott set off a firestorm by defending reliance upon this thing as “the best - sometimes even the only - way to dimensionalize subjects” in a piece published in *The Atlantic* after George H.W. Bush’s death. The type of journalism described by this word is said to be quick and easy to write and relies upon independently unverifiable evidence, as opposed to “accountability journalism.” For 10 points, name this pejorative label for a type of journalism that compromises objectivity and integrity in prioritizing media time spent with politicians and other influential figures.

ANSWER: media access [or journalistic access; or access journalism]

<Other Academic>

15. A player of this instrument wrote an album whose twelve tracks are each dedicated to a friend born under a different sign, titled *Zodiac Suite*. Another player of this instrument began suffering from frequent mental breakdowns after he was severely beaten by a police officer following a concert. An album by a player of this instrument opens with three consecutive takes of “Un Poco Loco.” Mary Lou Williams played this instrument, as did another musician who wrote the most-recorded standard composed by a jazz musician. Bebop-era players of this instrument were some of the first to deviate from the “stride” style popular at the time. A player of this instrument released a three-volume series of albums that labeled him “The Amazing,” and another player of this instrument wrote “Round Midnight.” For 10 points, name this instrument whose players include Bud Powell and Thelonious Monk.

ANSWER: piano

<Other Fine Arts>

16. An early celebrity profile of this man describes him as cutting a “Robin Williams-in-*Dead Poets Society*” type figure in the calculus and physics classes he taught at the Dalton School in the 1970s. Alfredo Rodriguez, whom this man ordered to carry \$2000 at all times, was arrested for selling a “little black book” filled with hundreds of names to an undercover FBI officer. This man’s accomplice, British socialite Ghislaine Maxwell, hired Virginia Roberts when she was working as a locker-room attendant at Mar-a-Lago. This man spent only 13 months in a Palm Beach county jail due to a plea deal offered by former US Attorney Alexander Acosta. This former partner at Bear Stearns flew Bill Clinton dozens of times on his private Boeing 727 jet, which was nicknamed “the *Lolita* express.” For 10 points, name this billionaire who assembled and pimped out a network of underage girls from his Florida estate.

ANSWER: Jeffrey (Edward) Epstein

<Current Events>

17. A character in this novel reads about the theory of Giant Gravitation, which holds that a giant living inside the earth makes things fall by asking for them. The narrator of this novel goes on a digression about scholarly baldness while discussing the hail of dum-dum bullets that a group of youths aim at his house. In this novel, a man struggles to grind a perfect glass ball while working on his thesis, "The Effects of Ultraviolet Rays upon Galvanic Action in the Eyeball of the Frog." That pockmarked character is terrorized by children at the Hall of the Descending Cloud school in Part III of this novel. The standard translation of this novel by Graeme Wilson uses punning character names like Beauchamp Blowlamp, Singleman Kidd, and Opula Goldfield, the latter of whom is courted by Mr. Avalon Coldmoon. This novel ends with the narrator getting drunk and drowning in a clay jar. For 10 points, name this novel by Natsume Sōseki that satirizes Meiji society from the point of view of the title pet.

ANSWER: *I Am a Cat* [or *Wagahai wa Neko de Aru*]

<World Literature>

18. Two answers required. A structure that has these two properties is the output of an algorithm that begins by taking the input and creating its transpose, and then using the transpose to determine the "out-neighbors" and "in-neighbors" over which to loop. Structures with these two properties can have their partial ordering uniquely represented with a Hasse Diagram, because such structures with these properties admit only one transitive reduction. Kosaraju's algorithm, which is used to find the strongly-connected components, outputs a structure that has these two properties. In general, calculating the feedback arc set or the feedback edge set will leave behind a structure that has these properties.

Topological sorting can only be performed on graphs that have these properties; such graphs are similar to forests. For 10 points, give these two properties, which put the "D" and the "A" in graphs called DAGs ("dags").

ANSWER: directed and acyclic [accept answers in either order]

<Other Science>

19. This kingdom's ruler delivered messages through runners who were called "half heads" because of their half-shaven heads. A war began between this empire and a colonial empire after its soldiers beheaded a rival chieftain and wrapped his head in that empire's flag. A ruler of this kingdom sat on a throne with the skulls of four defeated generals for legs and expanded a military force that trained by scaling walls of thorny acacia branches. Under its ruler Agaja, this kingdom began observing its "Annual Customs," where human sacrifice occurred. This state conquered the kingdom centered at Ouidah, which today contains a monument representing the "Door of No Return." This kingdom ended its tribute to the Oyo Empire under King Gezo, who developed its famous all-female military unit that observers called its "Amazons." For 10 points, name this slave-trading West African kingdom in modern-day Benin.

ANSWER: Kingdom of Dahomey

<World History>

20. The names of a staggering eight illustrators are recorded in an illuminated manuscript named for one of these people, who is shown wielding a lance and being flanked by six tiny framed portraits of saints. One of these people likely commissioned a miniature in which personifications of Melody, Echo, and the mountains of Bethlehem watch as David plucks his harp to "compos[e] the Psalms." One of these people lends its name to a group of ivories that includes the *Harbaville Triptych*. None of them were named Otto, but the Paris Psalter dates to a 10th century "renaissance" of which these rulers were the chief patrons. In an earlier artwork, soldiers hold a teal-colored shield emblazoned with a chi-rho symbol to the left of one of these rulers. One of these rulers is shown with a halo standing in Tyrian purple and white robes and holding a golden Eucharist bowl at the center of a mosaic at the Church of San Vitale in Ravenna. For 10 points, name these monarchs who, in the 8th and 9th centuries, banned the painting of icons.

ANSWER: Byzantine emperors [or emperor of the Byzantines; or Autokrator; or Eastern Roman Emperor; prompt on partial answer, such as emperor or Byzantine ruler; prompt on Roman emperor; prompt on Augustus; prompt on Basileus]

<Painting and Sculpture>

**Bonuses**

1. In Romulo Gallegos's novel *Dona Barbara*, Santos Luzardo and the title character represent a dichotomy introduced in this book. For 10 points each:

[10] Name this book that presents Latin America's choice between "civilization" and "barbarism." The dictator Juan Manuel de Rosas is allegorized as the title *caudillo* in this Domingo Sarmiento book.

ANSWER: **Facundo**: *Civilization and Barbarism*

[10] This essay counters Sarmiento's dichotomy by arguing that "The struggle is not between civilization and barbarity, but between false erudition and Nature." This brief 1891 essay begins by comparing the title place to a sleepy village that must rouse itself.

ANSWER: **"Our America"** [or **"Nuestra América"**]

[10] Facundo and José Martí's "Our America" are placed in dialogue in a Roberto Rematar essay that claims this character as a symbol for Cuba and identifies his master Prospero with colonialist forces.

ANSWER: **Caliban**

<World Literature>

2. In the late 19th century, the German immigrant Adolph Luetgert was known as the "king" of this product. For 10 points each:

[10] Name this product. Luetgert murdered his wife, Louisa Bicknese, and disposed of her body with machinery used to create this product.

ANSWER: **sausage** [prompt on ground meat or similar answers]

[10] The Louisa Luetgert murder took place in this city, the center of the meatpacking industry and the setting of Upton Sinclair's *The Jungle*.

ANSWER: **Chicago**, Illinois

[10] A man of this last name wrote a report with Charles Neill on Chicago's meatpacking industry for Theodore Roosevelt. This was the last name of a woman whose affair with a politician was revealed in a set of 1797 articles by James Thomson Callender.

ANSWER: **Reynolds** [or James **Reynolds**; or Maria **Reynolds**]

<American History>

3. A giant marionette effigy of "Zozobra," or "Old Man Gloom," is burned at the start of this city's annual Fiesta, which celebrates the conquest of its indigenous population. For 10 points each:

[10] The largest showcase of Native American art in the world is an annual "Indian Market" in what city at the foot of the Sangre de Cristo mountains, the oldest state capitol in the United States?

ANSWER: **Santa Fe**, New Mexico

[10] Many buildings in Santa Fe are built in a "revival" style of architecture named for this large Native American ethnic group, who were named for the towns they constructed from stone and adobe.

ANSWER: **Pueblos** [or **Pueblo** Revival style]

[10] Though they were damaged in the Pueblo Revolt, the original adobe walls of this mission in Santa Fe are still intact. This building, which dates to 1626, is the oldest known church in the continental United States.

ANSWER: **San Miguel** Mission

<Geography>

4. In 2017, it was shown that tributyltin likely predisposes individuals to this condition by altering the histone marks on mesenchymal stem cells, changing their lineage. For 10 points each:

[10] Identify this condition which in a minority of cases is caused by exposure to environmental pollutants that act as endocrine disruptors, such as estrogen mimics that alter expression of neuropeptide Y and ghrelin.

ANSWER: **obesity** [or being **overweight**]

[10] Tributyltin and other obesogens typically bind to these receptors or the RXR receptors that they heterodimerize with. Adipose tissues heavily express the gamma isoform of these nuclear receptors, which regulate many aspects of lipid metabolism.

ANSWER: **PPARs** [or **PPAR-gamma**; or **peroxisome proliferator-activated receptors**]

[10] Because they are PPAR-gamma agonists, some drugs that reduce the resistance to this hormone may cause weight gain with prolonged use. This hormone stimulates glycogen synthesis in the liver.

ANSWER: **insulin**

<Biology>

5. Answer some questions about the terribly violent martyrdom of some Sikhs, for 10 points each.

[10] When Bhai Mati Das was martyred by being tied upside down between two pillars and sawed in half, his halves continued to say this prayer that begins with the Mul mantra.

ANSWER: **Japji sahib**

[10] Before being martyred by being dropped into a boiling cauldron full of sand, Guru Arjan Dev composed this main text of Sikhism, which begins with the Japji Sahib.

ANSWER: Adi **Granth** [or Sri Guru **Granth** Sahib]

[10] This man was forced to watch his companions Bhai Mati Das being cut in half, Bhai Dayal Das being boiled alive, and Bhai Sati Das being boiled alive. Sikhs celebrate the martyrdom of this man, who was beheaded for saving the Kashmiri Pandits and himself from conversion to Islam.

ANSWER: Guru **Tegh Bahadur**

<Religion>

6. W. H. Auden collaborated with Paul B. Taylor on a translation of this text, which he dedicated to J. R. R. Tolkien. For 10 points each:

[10] Name this collection of anonymous poems, whose main source is the Codex Regius. Tolkien may have based the Misty Mountains on the *Skírnismál*, which is included in this text.

ANSWER: the **Elder Edda** [or the **Poetic Edda** or **Sæmundar**['s] **Edda**; prompt on **Edda**; do not accept or prompt on "Prose Edda"]

[10] The Elder Edda makes frequent use of these figures of speech, which also appear in skaldic poetry. Examples of these circumlocutions include "wave's horse" for "ship" or "whale-road" for "sea."

ANSWER: **kennings**

[10] Kennings often feature in this type of rhyming, alliterative Icelandic verse composed of four-line stanzas. *Lokrur* is composed of this type of verse, which often begins with a *mansöngur*, a lyric "maiden-song" dedicated to a woman.

ANSWER: **ríma** [or **rímur**]

<European Literature>



7. French authorities cracked down on this man for writing treatises such as the *Mars Gallicus* and the *Augustinus*. For 10 points each:

[10] Name this religious dissident, a 17th-century Flemish bishop who drew on Augustine's theology to argue that humans cannot freely accept or reject divine grace.

ANSWER: Cornelius **Jansen** [or Cornelius **Jansenius**; or Corneille **Janssens**]

[10] This pope from the Pamphili family issued the bull *Cum Occasione*, condemning five tenets of Jansenist theology. This pope also sent an army to destroy the city of Castro.

ANSWER: **Innocent X** [or Giovanni Battista **Pamphili**; prompt on **Innocent**]

[10] The Jansenist theologian Francois de Paris was buried in a cemetery at this church in Paris, which became a pilgrimage site for religious pilgrims called *convulsionnaires* who beat and stabbed each other while thrashing around in fits.

ANSWER: **Saint-Medard** [or the Convulsionnaires of **Saint-Medard**]

<European History>

8. In his reply to Giovanni Artusi's criticisms, this composer coined the terms *prima prattica* and *seconda prattica* to describe how dissonances were prepared. For 10 points each:

[10] Name this Italian Baroque composer. Works of his that incurred Artusi's wrath included "Cruda Amarilli" and "Anima mia, perdona."

ANSWER: Claudio **Monteverdi**

[10] The aforementioned Monteverdi works were all in this genre of generally secular polyphonic vocal music, which often employ word-painting. This musical form is sometimes contrasted with the sacred motet.

ANSWER: **madrigals** [or **madrigali**]

[10] This composer was, along with Carlo Gesualdo, one of the most chromatic madrigal-writers of the late 16th century. "Che fa hogg'il mio sole" was one of this composer's eight madrigals included in Nicholas Yonge's collection *Musica transalpina*.

ANSWER: Luca **Marenzio** [or Luca **Marentio**]

<Music>

9. Kit Fine has published several papers on the "metaphysical" type of this phenomenon, whose unitarity is the subject of debate in the literature. For 10 points each:

[10] Name this concept that refers to statements about one thing occurring or existing "in virtue of" or "because of" some other thing.

ANSWER: **grounding** [or other word forms, such as **grounded**]

[10] In "A Guide to Ground," Fine compares the role of grounding in philosophy to this thing in science. Hume argued our apparent evidence for this concept only shows that certain events happen in "constant conjunction."

ANSWER: **causation** [accept word forms]

[10] David Lewis's "Humean" version of this concept states facts about the world have this relation to beings in the world, so any difference between beings must mean there is a corresponding difference between facts. Unlike grounding, this concept does not make "in virtue of" claims.

ANSWER: **supervenience** [accept word forms]

<Philosophy>

10. One of these events known as the Marinoan is thought to have ended after methane released from the Earth's crust accelerated global temperatures. For 10 points each:

[10] Name these events that include the Sturtian, which was responsible for the deposition of tillites in the geological record. Periods of milder climate during these events are known as interstadials.

ANSWER: **glaciations** [or **glaciation** eras]

[10] This hypothesis holds that during the Marinoan glaciation, the entirety of the Earth's surface was covered in ice.

ANSWER: **snowball** Earth hypothesis

[10] Evidence for the Snowball Earth hypothesis includes the existence of these rocks, which include dolostones and limestones with a unique chemical composition found at the top of the geological record. An iridium anomaly in these rocks allowed scientists to date the length of snowball Earth.

ANSWER: **cap carbonates** [prompt on **carbonates**]

<Other Science>

11. In part of this story, the speaker provides recipes for "bread pudding," "doukona," and "pepper pot." For 10 points each:

[10] Name this Jamaica Kincaid story that consists of instructions like "wash the white clothes on Monday" and "try to walk like a lady and not the slut you are so bent on becoming."

ANSWER: **"Girl"**

[10] Directions to a spy on how to use the Dissociation Technique while being groped by your Designated Mate appear in this story by Jennifer Egan, which she published as a series of tweets in 2012.

ANSWER: **"Black Box"**

[10] Another story in the second-person instructional format, Lorrie Moore's story "How to be an Other Woman," opens her collection titled for this genre, works in which include *How to Win Friends and Influence People* by Dale Carnegie.

ANSWER: **self-help**

<American Literature>

12. The oldest part of this site, Guyang Cave, was likely created during the Northern Wei dynasty. For 10 points each:

[10] Name this site south of Luoyang, home to 2,300 caves that contain almost 110,000 Buddhist statues and more than 60 stupas.

ANSWER: **Longmen** Grottoes [or **Dragon's Gate** Grottoes; take "Caves" or synonyms for "Grottoes"]

[10] This dynasty built the Fengxiansi Cave at Longmen Grottoes. Emperor Taizong of this dynasty sent the monk Xuanzang to India to bring Buddhist texts back to China.

ANSWER: **Tang** dynasty

[10] This Tang official criticized the presence of the Buddha's finger bone in China in the essay "Memorial on the Bone-relics of the Buddha." This founder of Neo-Confucianism was renowned for his simple, *guwen* prose style.

ANSWER: **Han Yu** [or **Tuizhi**; prompt on **Han**]

<World History>

13. As Extraordinary Minister for Sport in his native country, this athlete sponsored a namesake 1998 law forcing sports clubs to pay taxes, but allowing them to organize their own leagues. For 10 points each:

[10] Name this athlete, who once forced a forty-eight hour ceasefire in the Biafran War so that he could play a game in Lagos.

ANSWER: **Pele** [or Edson Arantes do **Nascimento**]

[10] The "consecration" of Pele in Sweden during the sixth World Cup is related in this sweeping, lyrical history of soccer in Latin and South America published in 2003 by Uruguayan writer Eduardo Galeano.

ANSWER: **Soccer in Sun and Shadow** [or **Football in Sun and Shadow**; or **El fútbol a sol y sombra**]

[10] Galeano juxtaposed a description of Pele making the "noisiest crowd in the world" fall silent during a 1969 penalty kick that ended up being his thousandth goal with a somber account of the "Football War" the same year between Honduras and this country to its southwest.

ANSWER: **El Salvador**

<Other Academic>

14. This quantity, which is symbolized eta, can be calculated with the Tafel equation. For 10 points each:

[10] Identify this quantity, the difference between the electrode potential according to the Nernst equation and the actual electrode potential.

ANSWER: **overpotential**

[10] The natural log term in the Nernst equation contains this quantity, which is similar to an equilibrium constant, but not at equilibrium conditions. It is used to determine which direction a reaction will shift to reach equilibrium.

ANSWER: **reaction quotient** [or **Q**]

[10] The natural log term in the Tafel equation contains current density divided by this quantity, the current present when the rates of deposition and dissolution of the metal are equal.

ANSWER: **exchange current** density

<Chemistry>

15. Edward Dayes dubbed this artist a “Blotmaster-General” because of his controversial method of creating landscapes from abstract blots. For 10 points each:

[10] Name this 18<sup>th</sup>-century British watercolor painter, who elaborated upon that method in his pamphlet *A New Method of Assisting the Invention in Drawing Original Compositions of Landscape*.

ANSWER: Alexander **Cozens**

[10] A highly abstract “schematic study” is one of the many sketches Cozens made of these objects. A later British artist who copied those sketches by Cozens made numerous of his own studies of these objects, which appear prominently in his landscapes *Dedham Vale* and *Wivenhoe Park*.

ANSWER: **clouds**

[10] The aforementioned admirer of Cozens is this landscapist, who painted a rainbow in one of his views of Salisbury Cathedral.

ANSWER: John **Constable**

<Painting and Sculpture>

16. The Pica Laws empowered the state to punish both these people and *manutengoli*, people who gave them aid. For 10 points each:

[10] Name these people, prominently including Carmine Crocco, whose presence in Southern Italy was a major issue in the 1860s.

ANSWER: **bandits** [or **brigands**; or social **bandits**; prompt on **thieves** or **murderers**]

[10] Much of southern Italy was unified with the north after the invasion of the Kingdom of the Two Sicilies in the Expedition of the Thousand, led by this hero of the Risorgimento.

ANSWER: Giuseppe **Garibaldi**

[10] The governments of unified Italy often ruled through this strategy, devised by Agostino Depretis, of absorbing parts of the opposition into the ruling coalition through bribes to ensure centrist governance.

ANSWER: **trasformismo** [or **transformism**]

<European History>

17. This device typically consists of a suspended, deformable target at which a projectile can be fired, causing the target to swing up. For 10 points each:

[10] Name this device often used in classroom demonstrations to measure the kinetic energy and velocity of such projectiles.

ANSWER: **ballistic pendulum** [prompt on **pendulum**]

[10] If the projectile embeds itself into the target, the collision in a ballistic pendulum is said to have the “perfect” form of this property, meaning that kinetic energy is *not* conserved.

ANSWER: **inelasticity** [accept word forms, such as **inelastic**]

[10] In this test for material hardness, a vertically-mounted sample is broken by a pendulum on the downward swing and the resulting loss of energy is measured on the upward swing after impact. Unlike in a related test, the sample is positioned with the notch facing the pendulum.

ANSWER: **Izod** impact test [the related test is the Charpy impact test] <Physics>

18. John Szarkowski curated an influential 1967 exhibition at the MoMA named for this genre, which featured thirty-two photographs by Diane Arbus. For 10 points each:

[10] Identify this genre of photography promoted by Walker Evans and Robert Frank, which aims to realistically portray both historical events and scenes from everyday life, as well as their impact on the human condition.

ANSWER: **documentary** photography [the exhibition is called *New Documents*]

[10] The quintessential documentary photograph is this 1936 image of farm worker Florence Owens Thompson and her suffering children, taken by Dorothea Lange.

ANSWER: ***Migrant Mother***

[10] The *New Documents* exhibit at the MoMA also profiled this incredibly prolific photographer from the Bronx, who prowled the streets of New York taking unusually-angled candid close-ups, some of which appear in his book *Women are Beautiful*.

ANSWER: Garry **Winogrand**

<Other Fine Arts>

19. The first publication of this type was released in the 1920s based on research that Georg Wenker had conducted nearly 50 years earlier by sending a survey to German schoolmasters. For 10 points each:

[10] Name this kind of publication. Harold Orton supervised a survey that produced the first comprehensive one for England, while Hans Kurath did the same in the U.S.

ANSWER: **linguistic maps** [or **linguistic atlases**; accept answers indicating a **map** or **atlas** showing the geographic distribution of **languages** or **accents** or **dialects**]

[10] Linguistic atlases of the U.S. document the standardization of the Southern accent between the Civil War and the early 20th century, as shown by the “merger” of two front vowels before nasal consonants, which is named for these two one-syllable words.

ANSWER: **pin** and **pen** [accept in either order; accept **pin-pen** merger; accept **pin** and **pin** if the speaker has a southern accent]

[10] The linguistic map of the distribution of the pin-pen merger shows a small isolate around this state’s inland city of Bakersfield, which was settled by migrants from Oklahoma.

ANSWER: **California**

<Social Science>

20. The novels featuring this character were written under the pen-name Joseph Kell. For 10 points each:

[10] Name this character who writes poetry while sitting on the toilet and renames himself Piggy Hogg after his divorce from the feminist Vesta Bainbridge. He appears in a quartet of novels that includes *The Clockwork Testament*.

ANSWER: Francis Xavier **Enderby**

[10] Francis Xavier Enderby is the creation of this English novelist, who is better known for a dystopian novel in which Alex can no longer enjoy classical music after undergoing the Ludovico Technique.

ANSWER: Anthony **Burgess** [or John Anthony Burgess **Wilson**]

[10] Burgess’ autobiography *Little Wilson and Big God* later won English PEN’s award for literary autobiography, named after this author, whose many autobiographies include *Hindoo Holiday*, *My Dog Tulip*, and *My Father and Myself*.

ANSWER: J(oe) R(andolph) **Ackerley**

<British Literature>