ACADEMIC COMPETITION FEDERATION

ACF NATIONALS 2022

PLAY-IN GAME

Packet by

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TOSSUPS

1. In a play, a boy and girl sing about one of these beings at a junction who can't decide whether to go to Elmina or Cape Coast. These beings partly title that play, in which the Black American newlywed, Eulalie, comes into conflict with the traditional values of her Fanti in-laws. In a novel, some of these beings put the narrator in a room filled with a thousand snakes, which suddenly turns into a pitcher, causing the narrator's neck to grow three feet long. Ama Ata Aidoo ("EYE-doo") wrote a play titled for *The Dilemma of* one of these beings. In a novel, a "Smelling" one of these beings transforms the narrator into a cow, before he meets one with television screens in her hands. That novel partly titled for these beings was a follow-up to its author's *The Palm-Wine Drinkard*. For 10 points, Amos Tutuola wrote a novel titled *My Life in the Bush of* what sort of beings?
ANSWER: **ghost**s [accept *The Dilemma of a **Ghost***; accept *My Life in the Bush of **Ghosts***; accept **spirit**s or **phantom**s or **specter**s or **wraith**s]
<World Literature>

2. The complexity of an instance of this set can be measured with Pollard's pseudo-dimension or the fat-shattering dimension. Two to the power of this set's cardinality is an upper bound on the growth function of a hypothesis set. As a rule of thumb, this set's size should be at least ten times the Vapnik–Chervonenkis dimension. In a GAN ("G-A-N"), a generator tries to add new elements to this set that will not be flagged as synthetic by a discriminator. This set is the only information used in empirical risk minimization. As this set's size increases, the minimized loss function tends to go down. One element is removed from this set in each step of the leave-one-out method for testing a model. The size of this set is the "70" in a 70–30 partition, with the rest retained for validation and testing. For 10 points, name this set of labeled data provided to a learning algorithm.
ANSWER: **training** set [or **sample** set; accept **training** sample or **training** data; prompt on <u>data</u> set; reject "validation set" or "test(ing) set"]
<Misc. Science>

3. A sculptural self-portrait by this artist shows her in a free-flowing gown and standing on top of a lotus flower while making Buddhist *mudra* gestures with her hands. Another sculpture by this artist shows a man wearing only a loose robe, with his eyes closed and arms outstretched. This artist of *Chinoise* ("sheen-WAHZ") and Washington's *Titanic* Memorial wears a blue jacket and bright turquoise pants while reclining on a sofa in a portrait by Robert Henri ("HEN-rye"). An institution named for this woman was the original occupant of a Marcel Breuer ("BROY-er")-designed building whose trapezoidal windows jut out from its exterior. In 2017, an institution named for this woman controversially featured Dana Schutz's *Open Casket*, which depicts Emmett Till, in a biennial exhibition of contemporary American art. For 10 points, name this member of the Vanderbilt family who founded a namesake New York museum.
ANSWER: Gertrude Vanderbilt **Whitney** [accept Gertrude **Vanderbilt** before "Vanderbilt" is read; accept **Whitney** Museum of American Art; accept **Whitney** Biennial]
<Painting/Sculpture>

4. The oldest of these objects in the Americas was found by Sydney and Georgia Wheeler in Spirit Cave, Nevada. The longest-known Etruscan document is a ritual calendar found on one of these objects. The accidental discovery of another of these objects in the Chehrabad ("chair-uh-BAD") Salt Mine led to excavations in Iran's Zanjan Province. In 2015, CT scans revealed that one of them was inside a gold-painted papier-mâché statue of the Buddha at the University of Drent, suggesting it was a product of *sokushinbutsu* ("soak-sheen-boots"). Tocharian ("toh-KAR-ian") language speakers may have left examples of these in the Tarim ("TAH-rim") Basin that are noted for their ruddy appearance. A 5000-year-old, naturally-created example of these objects with an arrow inside it was found in the Alps and named Ötzi ("OAT-see"). For 10 points, the Valley of the Kings contains many examples of what well-preserved human remains?
ANSWER: **mummies** [or **mummy**; accept **mummified** bodies or **mummified** skulls or fire **mummies** or salt **mummies** or ice **mummies** or natural **mummies**; accept **mummy** wrappings; prompt on corpses, or bodies, or dead bodies, or burials, or preserved/embalmed corpses, or icemen, or skulls]
<Ancient History>

5. According to Apollodorus, Mount Haemus was named for an incident in which this figure's blood was spilled on it. The Syrians stopped eating fish after this figure made Venus and Cupid jump in the Euphrates, per Hyginus' account of the constellation Pisces. This figure gave away a set of precious objects when a shepherd asked new harp strings to replace ones burned by Zeus. Nonnus's *Dionysiaca* relates how Cadmus' music beguiled this figure so Zeus could retrieve his thunderbolts, mirroring another myth in which this figure had the *drakaina* Delphyne guard the Corycian cave. Aegipan and Hermes stole the sinews of Zeus from this figure, who caused the Olympians to turn into animals and flee to Egypt. This figure had a hundred snakes on each of his hands and fathered Cerberus and the Hydra with Echidna. For 10 points, name this monstrous child of Gaia who was defeated by Zeus and buried under Mount Etna.
ANSWER: **Typhon** [or **Typhoeus**; or **Typhaon**; or **Typhos**]
<Mythology/Legends>

6. The main modern organization for promoting this movement was founded by the inventor of the "synthetic vibration harp" and a color organ called the "luxatone." That man, Harvey Spencer Lewis, established this movement's namesake Egyptian Museum in San José. This movement's purported founder visited a city of Arabian wise men named Damcar and had a sarcophagus carved with the motto VITRIOL and the phrase "Jesus mihi omnia." The goals of Francis Bacon's *Instauratio* ("IN-stao-RAH-tee-oh") *Magna* are sometimes compared to those of this movement's texts, such as the *Fama Fraternitatis*. This movement is named for a fictitious 17th-century nobleman from Germany who studied Hermetic traditions. The Freemasons are often said to have been inspired by, for 10 points, what esoteric tradition symbolized by a Cross of Cavalry emblazoned with a certain flower?
ANSWER: **Rosicrucian**s ("rosy-KROO-shunz") [or **Rosicrucian**ism; accept **Rose Cross**, or **Rosy Cross**, or **Rose Croix**, or **Rosenkreuz**; prompt on alchemy] (Their semi-mythical founder is Christian Rosenkreuz.)
<Religion>

7. A man named Joseph wrote an account of murders of this ethnic group titled *Shall This Nation Die?* A physician and international socialist of this ethnicity named Freydtun ("fray-DOON") published the "Urmia Manifesto." Military campaigns against this ethnic group by the emirs of Hokkari prompted the ethnographic mission of Joseph Perkins. Timur the Great launched targeted massacres of this ethnic group during and after his sack of Tikrit, one of its cultural centers. Starting in the reign of Faisal I ("FYE-sul the first"), this group were targeted by the Simele ("sih-MEL-leh") massacre. The term *Sayfo* refers to the genocide of this non-Armenian, Christian people by the Young Turk-led government of the Ottoman empire during World War I. For 10 points, name this ethnoreligious group of Northern Iraq, whose common English name is shared with an ancient empire.
ANSWER: **Assyrian**s [or **Sūrāyē** or **Sūrōyē** or **Atturaya**; prompt on Syrians] (The man in the first clue is Joseph Nessayem.)
<World History>

8. This process is the readout of Promega's HiBiT ("high-bit") assay and PerkinElmer's AlphaLISA ("alpha-LYE-zuh") assay. This process occurs when phosphate is cleaved off a di·oxetane bonded to an adamantyl ("ADD-uh-MAN-till") group in the molecule CSPD. This process accompanies 3-APA formation in an assay catalyzed by the iron atom in hemoglobin. Phenol and benzo·thiazole ("BEN-zoh-THIGH-uh-zol") prolong this process when it's measured on substrates like furimazine ("FURY-muh-zeen"). ATP concentration is determined by the rate of this process in an assay that uses an enzyme purified from a marine shrimp. Since this process can be measured on a plate reader with low background and no filter, it is the readout for pyro·sequencing, and is more sensitive than absorbance for horseradish per·oxidase assays like ELISAs ("elizas") or Western blots. For 10 points, name this process in which a reaction directly emits photons, as contrasted with fluorescence.
ANSWER: chemi**luminescence** [or bio**luminescence**; prompt on glowing; prompt on emission of light or emission of a photon or photoemission until "photons" is read; reject "fluorescence" or "phosphorescence"] (The third sentence refers to the detection of blood using luminol.)
<Chemistry>

9. In this film, the camera rotates on a horizontal axis to track a man's turning body as a crowd of people press him into the mud. In a shot from this film, a man with two halves of a broken arrow attached to his head stands chest-deep in water while cradling a dead companion's head. When this film's antagonist first appears on screen, his face remains obscured in shadow so that only his ear and bald head are visible. This film was shot by Vittorio Storaro and makes heavy use of dissolves, including in an opening sequence where a man's upside-down face is overlaid onto a burning treeline. The Doors' "The End" plays in this film over shots of a man being killed with a machete, which are intercut with shots of a water buffalo being slaughtered. In this film, helicopters blast "Ride of the Valkyries" as they attack a beach. For 10 points, name this Francis Ford Coppola film about the Vietnam War.
ANSWER: *Apocalypse Now*
<Other Fine Arts>

10. In one of this author's works, the hermit Effrem tells an orphan a dubious etymology tracing the name Mary to the Latin phrase "Stella Maris." In another work by this author, several sooty pans are humped in a dark kitchen by an official who mistakes them for three virgins; that work is set in Thessalonica during Diocletian's reign. This author, whose work was first published by Conrad Celtes, shares a first name with a Catholic servant who lives with Theodor Fontane's ("TAY-oh-dor fon-TAH-nuh's") Effi Briest, and a first name with a "Mediterranean"-looking "somnambulist" who is killed in Normandy after sparking romantic feelings in Oskar Matzerath in *The Tin Drum*. She wrote six Latin texts, including *Dulcitius*, that Christianized the comedic style of Terence. For 10 points, name this subject of Otto the Great, who was Europe's earliest known woman playwright and a canoness from Gandersheim ("ganders-hyme").
ANSWER: **Hrotsvitha** ("h'ROTS-vith-uh") of Gandersheim [or **Roswitha**; or **Rosvitha**; or **Hrotsvit**e; or **Hrotswit**ha; or **Roswit**; accept **Roswitha** Gellenhagen after "Catholic"; accept **Roswitha** Raguna after "Mediterranean"]
<European Literature>

11. Andrew Ang and Monika Piazzesi ("pee-aht-SAY-zee") found that 85% of variance in these graphs was explained by three variables representing macro-effects, including "level" and "curvature," using a vector autoregressive model. Markets are segmented by the X-axis of these graphs under preferred habitat theory. The present value of sums of positions taken along lower X-axis values of these graphs should equal the sum of a lower number of positions taken at higher X-axis values according to the expectations hypothesis, assuming minimal arbitrage ("AR-bih-trahj"). A leading indicator of recessions is when the usual positive correlation between the variables on these graphs is inverted, reflecting an expected decline in interest rates. Investors often use these graphs to compare the spread of T-bills. For 10 points, name these graphs of the relationship between rates of return and time to maturity of bonds.
ANSWER: **yield curve**s [accept inverted **yield curve**s; prompt on answers which refer to returns or interest rates]
<Social Science>

12. This text remarks that if "metamorphoses" of older times still happened, "these calamities would…have turned me to stone," and concludes "if I…describe sad events any longer I might become bitter." Edward Gibbon criticized this text's "affectation of rhetoric and science" and wrote that it scattered "flowers over the grave" of an enemy who died on Cephalonia ("SEFF-uh-LOH-nia"). It begins by quoting Sophocles's ("SOFF-uh-kleez's") *Ajax* on the ceaseless flow of time and describes an emperor meeting a pale, bearded man of the "Polyclitean ("poly-KLID-ian") ideal," who towers a cubit over all others. This text recounts a victory at Mount Levounion ("leh-VOO-nee-ON") over the Pechenegs. Its author wrote it while exiled in a monastery for allegedly backing a fratricidal coup against John II ("the-second"). Campaigns by the author's father against Bohemond of Taranto and Robert Guiscard ("geese-KAR") are detailed in, for 10 points, what work of Byzantine history by Anna Comnena?
ANSWER: *The **Alexiad*** [or ***Alexias***]
<European History>

13. When an old lady in this novel tells a clergyman that rheumatism is preventing her from coming to church, he says that it would do her good to hobble, and then kicks her cat across the room. Inside her Bible, the protagonist of this novel keeps a primrose given to her by her love interest, whom she first meets while they both visit an old cottager with vision problems. A little boy in this novel delights in torturing sparrows by ripping off their legs and wings. The protagonist of this novel is reunited with her love interest when he returns her dog Snap during a walk on the beach. After being fired by Mrs. Bloomfield, this novel's title character works at Horton Lodge, where she takes charge of Matilda and Rosalie, the spoiled daughters of the Murray family. For 10 points, the title governess marries the curate Edward Weston in what debut novel by Anne Brontë?
ANSWER: ***Agnes Grey***
<British Literature>

14. Systems named for this quantity correspond to the "pi spin-glass" phase of a classification proposed in 2016 by graduate student Vedika Khemani. Those systems named for this quantity cannot exist without long-range interactions, per the Watanabe ("WAH-tuh-NAH-bay")–Oshikawa no-go theorem. A 2017 issue of *Nature* featured two papers reporting behavior named for this quantity in diamond nitrogen-vacancy centers and a chain of ytterbium ("it-TER-bium")-171 ions. A system's dependence on this quantity is eliminated by a change of variable in Floquet ("floh-KAY") theory. Kramers doublets are degenerate due to an inversion symmetry with respect to this quantity. Energy is conserved due to this quantity's continuous translation symmetry, which is broken in namesake systems that were proposed by Frank Wilczek ("WILL-check"). For 10 points, Wilczek's "crystals" oscillate periodically not in space, but what other fourth dimension?
ANSWER: **time** [accept **time** crystals or **time** reversal symmetry or **time** translation symmetry]
<Physics>

15. One tale claims that this island got its name when scurvy-stricken sailors rested here and gave it a name meaning "Island of Healing." This island is home to the CARMABI wildlife research organization, which is headquartered near Piscadera Bay and manages the parks around Mount Christoffel. Its capital contains the sand-floored Mikvé ("meek-VAY") Israel-Emanuel Synagogue, the oldest surviving synagogue in the Americas, as well as the Queen Emma pontoon bridge, which connects its quarters of Punda and Otrobanda. This island is the most populous territory where Papiamento ("PAH-pee-uh-MEN-too") is an official language. Willemstad is the capital of this island, where the dried peels of *laraha* oranges are used to make its namesake orange flavored liqueur, which comes in "dry" and "blue" varieties. For 10 points, what island near Venezuela is the "C" in the Dutch-controlled "ABC" islands?
ANSWER: **Curaçao** ("k'YOO-ruh-soh" or "k'yoo-ruh-SAO") [or **Kòrsou**; accept Blue **Curaçao**]
<Geography>

16. Two of these instruments are the soloists in the only fully authenticated concerto by Domenico Cimarosa ("chee-mah-ROH-zah"). The finale of a B-minor orchestral work opens with this instrument playing a melody in [read slowly] "eighth, sixteenth, sixteenth" rhythm, starting "B, D, B"; then "F-sharp, B, F-sharp." This instrument follows the violin two bars later and a fourth higher in a canon that opens the "Largo" first movement of a trio sonata embedded within *The Musical Offering*. A Vivaldi concerto nicknamed for a goldfinch, or *gardellino*, is for this instrument, which is featured in the finale of J. S. Bach's Orchestral Suite No. 2 in a "Badinerie ("bah-dee-nuh-REE")." Over 300 concertos for this instrument were written by Johann Joachim Quantz ("k'VONTS"), who taught Frederick the Great to play it. For 10 points, name this woodwind instrument whose "transverse" form contrasts with the "beaked" recorder.
ANSWER: transverse **flute** [or **flauto** d'echo]
<Classical Music>

17. A thinker with this first name called cause and effect "synchronous" in anti-Humean ("h'YOOM-ian") *Essays on the Perception of an External Universe*. Another thinker with this first name included "Acquaint ourselves thoroughly with the state of the question" in six rules for logical inquiry. A third thinker with this first name likened some people to flowers "planted in too rich a soil," whose "flaunting leaves" wither on the stalk, to open a book that rebuts Dr. Fordyce's sermons. In 1694, an author of this first name proposed an isolated scholastic commune in *A Serious Proposal to the Ladies*; that author is surnamed Astell. An author of this name attacked the sexism of Rousseau's *Émile* in a 1792 treatise, five years before marrying William Godwin. For 10 points, what was the first name of the author of *Vindication of the Rights of Woman*, surnamed Wollstonecraft?
ANSWER: **Mary** [accept **Mary** Shepherd; accept **Mary** Astell; accept **Mary** Wollstonecraft]
<Philosophy>

18. This person called envy and arrogance "two opposite sides of the same black crystal." This person said "Yours is the work which is never ended" in an address to the National Congress of Mothers. In St. Louis, this person condemned talking like a creature that sucks meat from eggs, popularizing the term "weasel words." This politician, who laid out an economic vision in a speech in Osawatomie ("OSS-uh-WAH-tuh-mee"), stated that someone with a face "marred by dust and sweat and blood" counts more than the critic and publicly lauded the opposite of "ignoble ease." In an address to the Knights of Columbus, he claimed there is "no room" for "hyphenated Americanism." This foe of "malefactors of great wealth" gave the "Man in the Arena" and "Strenuous Life" speeches. For 10 points, what advocate of a "Square Deal" for labor often used the proverb "Speak softly and carry a big stick?"
ANSWER: Theodore "Teddy" **Roosevelt**, Jr. [reject "Theodore Roosevelt, Sr."]
<American History>

19. This structure's positioning is partly regulated by a gradient of acetylation ("uh-SEE-till-ation") and crotonylation ("kroh-TAH-nill-ation") of EB1 ("E-B-one"). A component of this structure cannot form without a complex of Dgt proteins called Augmin. During the creation of this structure, NuMA ("NEW-muh") migrates away from the nucleus and binds to LGN at the cortex, and syntelic ("SIN-tell-ic") and merotelic ("MEER-oh-tell-ic") attachments are eliminated via phosphorylation ("foss-FOR-ill-ation") by Aurora B kinase. MAD2 ("mad-two"), BUBR1 ("bub-R-one"), and BUB3 ("bub-three") inhibit CDC20 ("C-D-C-twenty") as part of this structure's namesake assembly checkpoint. A component of this structure is stabilized by vinca alkaloids and taxanes. Gamma-TuRC ("turk") complexes with 13-fold symmetry nucleate ("NEW-klee-ate") parts of this structure called polar, astral, and K-fibers. Each pole of this structure has a centrosome, which sends out microtubules to bind to kinetochores ("kih-NET-oh-cores"). For 10 points, name this structure that pulls apart chromosomes in mitosis.
ANSWER: mitotic **spindle** [or **spindle** apparatus; prompt on microtubules by asking "What larger structure is the microtubule part of?"; prompt on cytoskeleton by asking "What specific incarnation of the cytoskeleton?"]
<Biology>

20. This poet imagines a voice saying, "That red oxide / Stain is where your iron, Lady Hera, / entered him" during an autopsy, in a poem whose title word can refer to "vagabond gypsum" or "sacerdotal calcite." A collection by this poet ends with the lines "First the grave dissolving into the dawn / then the crucial recrystallizing / from inmost depths of clear dark blue." The last chapter in Helen Vendler's *Last Looks, Last Books* is about this poet's final collection, which ends with "An Upward Look." Two people in a poem by him are repeatedly called "mes chers" ("may SHARE") by a Greek Jew born in 8 CE. This poet's final collection, *A Scattering of Salts*, was published in 1995, upon his death from AIDS. "The Book of Ephraim ("eff-RAH-yeem") opens an epic poem by him, inspired by sessions with his partner David Jackson using a Ouija ("wee-juh") board. For 10 points, name this American poet who wrote *The Changing Light at Sandover*.
ANSWER: James (Ingram) **Merrill**
<American Literature>

BONUSES

1. During Iran's Constitutional Revolution, a unit of these troops kept order in Tehran for a year and guarded Mohammad Ali Shah. For 10 points each:
[10h] Name these soldiers who comprised an elite brigade of the late Qajar ("kah-JAR") dynasty. One of their officers, Reza Khan ("ruh-ZAH CON"), mobilized them for the 1921 coup that overthrew the Qajars.
ANSWER: **Cossack**s [or **Qazzaq**ā or **Kazaki**; accept Persian **Cossack** Bridge, or Iranian **Cossack** Brigade, or Berīgād-e **Qazzāq**]
[10e] In 1889 a bunch of Cossacks claimed that Menelik II ("the-second") of Ethiopia let them settle this present-day country, which confused the French, as it was already their colony. This East African country is full of foreign military bases and abuts ("uh-BUTTS") the Bab-el-Mandeb ("BAHB el mon-DEB").
ANSWER: **Djibouti** ("jih-BOO-tee") [or Republic of **Djibouti**, or Jamhuuriyadda **Jabuuti**, or **Gabuutih** Ummuuno; prompt on French Somaliland but reject "Somaliland"]
[10m] This Cossack regiment officer assembled Bashkirs ("BASH-keerz"), Mongols, Cossacks, and others into the Asiatic Cavalry Division, which he led in 1921 to restore a revolutionary Buddhist monarchy in Mongolia.
ANSWER: Roman (Feodorovich) von **Ungern** ("OON-gairn")-Sternberg [or Baron **Ungern**, or Nikolai Robert Maximilian Freiherr von **Ungern**-Sternberg; accept **Mad Baron** or **Bloody Baron**; prompt on Roman Feodorovich]
<World History>

2. This book ends with a Latin phrase translated as "Here ends the book, but not the searching." For 10 points each:
[10h] Name this autobiography which describes its author's choice to convert to Catholicism, leave his professorship and literary career, and become a monk in Kentucky.
ANSWER: The *Seven Storey Mountain* (by Thomas Merton)
[10m] Upon converting, Thomas Merton became a member of this religious order known for making beer. Its members abstain from meat, since they follow the Order of Saint Benedict more closely than other Cistercians ("siss-TER-shunz").
ANSWER: **Trappist**s [or Order of Cistercians of the **Strict Observance**, or Order of Reformed Cistercians of Our Lady of La **Trappe**; accept **Trappism**]
[10e] The Trappist abbey in Kentucky that Merton joined is named for this place, where Jesus experienced agony as he prayed after the Last Supper.
ANSWER: Garden of **Gethsemane** ("geth-SEM-uh-nee") [accept Abbey of Our Lady of **Gethsemani**; prompt on garden; prompt on Mount of Olives]
<Religion>

3. In a short story titled "The Book," this senile character starts hoarding birds in his family's attic, which are eventually swept out the window by the housekeeper Adela. For 10 points each:
[10h] Identify this character who comes to contradictory ends in different stories, including one titled for his "Last Escape" where he becomes a crab and gets cooked.
ANSWER: **father** from *Sanatorium under the Sign of the Hourglass* [or **Józef's father**; accept **Bruno** Schulz's **father**; accept any answer indicating the narrator's **father**, **dad**, etc. in short stories by Bruno **Schulz**; accept **Jakub** ("YAH-koob") Schulz; prompt on Schulz; prompt on father or dad by asking "In which author's works?"]
[10e] In another Schulz story, the narrator's father turns into a cockroach, likely an allusion to this Franz Kafka novella that Schulz translated into Polish.
ANSWER: The *Metamorphosis* [or Die *Verwandlung*]
[10m] In a Schulz story, the father has a city map omitting this shady locale, where everything is gray and vendors allude to sex without selling it. Schulz's collection *Cinnamon Shops* was renamed for this place in English.
ANSWER: The Street of **Crocodile**s [or **Ulica Krokodyli**]
<European Literature>

4. This technique produces plausible ages for tektites, although it is vulnerable to thermal annealing that causes "fading." For 10 points each:
[10h] Name this technique used to date ancient glass and meteorites. This technique analyzes the density of microscopic scars in uranium-containing minerals like apatite ("appetite").
ANSWER: **fission track** dating [prompt on thermochronology; prompt on fission dating; prompt on uranium-238 dating or ^{238}U dating; reject "uranium–uranium dating"]
[10e] Though fission tracks are produced by the spontaneous decay of uranium-238, the sample's total uranium content is measured by triggering the decay of this lighter uranium isotope used in fission reactors.
ANSWER: uranium-**235** [or **235**-U]
[10m] Fission tracks can confirm igneous rock ages inferred from the decay of an alkali metal into this element's 40-isotope. Another dating technique measures this element's 39-isotope via a stepwise irradiation–degassing process.
ANSWER: **argon** [or **Ar**; accept **argon**–argon dating or **Ar**–Ar dating or ^{40}**Ar**/^{39}Ar dating; prompt on potassium–argon dating or K–**Ar** dating or ^{40}K/^{40}**Ar** dating]
<Misc. Science>

5. Answer the following about the piece *Desiccated Embryos*, for 10 points each.
[10e] *Desiccated Embryos* is by this idiosyncratic French composer of three *Gymnopédies* ("zhim-naw-pay-DEE"), who coined the word "gnossienne" ("nawss-YEN") for some of his pieces.
ANSWER: Erik **Satie** [or Eric Alfred Leslie **Satie**]
[10h] The first movement of *Desiccated Embryos* contains one of Satie's most notorious performance indications, in which he asks the pianist to play like a certain animal with a certain malady. Name *both*.
ANSWER: "Like a **nightingale** with a **toothache**" [or *Comme un **rossignol** qui aurait **mal aux dents***; both underlined parts required]
[10m] The piece ends with an "obligatory cadenza," whose over-emphatic F-major chords parody the finale of this F-major orchestral work by Beethoven. This work's second movement may imitate a metronome.
ANSWER: Beethoven's **Symphony No. 8** in F major, **Op. 93** [accept either]
<Classical Music>

6. This man was ejected from the Globe Theatre for loudly interrupting a performance of Tennyson's play *The Promise of May*, contributing to his reputation as a drinker and brute. For 10 points each:
[10m] Name this Victorian-era nobleman. He sponsored John Graham Chambers to compile a standard set of rules that are named for him, which govern his favorite sport.
ANSWER: John Sholto Douglas, 9th Marquess of **Queensberry** [or **John** Sholto **Douglas**; prompt on Douglas; accept Marquess of **Queensberry** Rules]
[10e] The Marquess of Queensberry publicly feuded with this man and sent evidence of his sexual relationship with Queensberry's son, Lord Alfred Douglas, to Scotland Yard.
ANSWER: Oscar **Wilde**
[10h] Queensberry also served as president of a British "Union" named for this concept, which had split from Charles Bradlaugh's "National Society" for this concept in the 1870s.
ANSWER: **secularism** [or word forms; accept British **Secular** Union or National **Secular** Society; prompt on atheism or non-religious or agnosticism or anti-religious attitudes]
<European History>

7. This genus's *laboratorium* species is the first synthetic bacterium, and another of its species infects between ten to fifteen percent of all laboratory cultures. For 10 points each:
[10m] Name this genus of bacteria that lacks a cell wall. Its *genitalium* ("jenny-TAL-ium") and *pneumoniae* ("new-MOH-nee-eye") species infect humans and can cause erythema multiforme ("airy-THEE-muh multi-FOR-may") and mucositis ("MEW-koh-SYE-tiss").
ANSWER: _Mycoplasma_ ("MY-koh-plasma")
[10e] *Mycoplasma* has a lot of this molecule in its cell wall, which is the chief regulator of membrane fluidity in most eukaryotic cells.
ANSWER: **cholesterol**
[10h] *Mycoplasma* expresses the highly immunogenic protein P1 as part of the attachment organelle. P1 serves as one of these proteins, which are appendages that allow bacteria to attach to surfaces.
ANSWER: **adhesin**s ("ad-HEE-sins")
<Biology>

8. Answer the following about the history of overdubbing in jazz, for 10 points each.
[10m] On a 1941 recording of "The Sheik of Araby," this musician from New Orleans played piano, bass, drums, clarinet and two saxophones. This composer of "Petite Fleur" pioneered using the soprano saxophone in jazz.
ANSWER: Sidney (Joseph) **Bechet** ("beh-SHAY")
[10e] Through overdubbing, Natalie and Nat King, a father-daughter pair from this family, performed a duet version of "Unforgettable" in 1991, 26 years after Nat's death.
ANSWER: **Cole** family [accept Natalie **Cole**; accept Nat King **Cole**]
[10h] This pianist's self-titled 1956 album controversially used both overdubbing and tape speed manipulation. This composer of the atonal *Descent into the Maelstrom* was equally famous as an improvisation teacher, and played together in a quintet with his most prominent students, Warne Marsh and Lee Konitz.
ANSWER: Lennie **Tristano** [or Leonard Joseph **Tristano**]
<Other Fine Arts>

9. Answer the following about references to Herod in English drama, for 10 points each.
[10m] A play titled *Herod the Great* appears in a series of 32 Biblically-inspired plays in this genre, which were performed every year in Wakefield, England throughout the Middle Ages.
ANSWER: **mystery** plays [or **miracle** plays; reject "morality plays"]
[10h] Salome ("SAH-lo-may") initiates a scheme to blame the title character for attempting to poison Herod in this play by Elizabeth Cary, the earliest surviving original play written in English by a woman.
ANSWER: *The Tragedy of **Mariam**, the Fair Queen of Jewry*
[10e] This character warns players not to out-Herod Herod before a performance of *The Murder of Gonzago*. In that speech, this character says "Speak the speech, I pray you, as I pronounced it to you, trippingly on the tongue."
ANSWER: Prince **Hamlet**
<British Literature>

10. This man directed an adaptation of Euripides's *Bacchae* ("BAH-kay") called *Dionysus in '69* in a SoHo, Manhattan space known as the Performing Garage. For 10 points each:
[10h] Name this man who founded the interdisciplinary Performance Studies program at NYU's Tisch ("tish") school. This editor of the journal *TDR* described his view of performance as ritual in *Between Theater and Anthropology*.
ANSWER: Richard **Schechner** ("SHECK-ner")
[10m] Schechner worked closely with this British anthropologist, who used the term "liminality" in describing rituals among the Ndembu ("en-DEM-boo") people of Zambia in *The Forest of Symbols*.
ANSWER: Victor **Turner**
[10e] Schechner's exercises for actors include "rasaboxes," which use the notion of *rasa* ("RUH-suh") from this language's classical drama tradition. Kālidāsa wrote *The Recognition of Shakuntala* in this language.
ANSWER: **Sanskrit** [or *samskrtam*]
<Other Academic>

11. For 10 points each, answer the following about the most prolific electoral losers in U.S. history, as tallied by PoliticalGraveyard.com.
[10e] A candidate from this political party, Jasper McLevy, tops the list at thirty-seven losses, though McLevy did eventually get elected mayor of Bridgeport, Connecticut. In 1920, another of this party's candidates ran for President from jail.
ANSWER: **Socialist** Party (The incarcerated candidate was Eugene V. Debs.)
[10h] Tied for second place, with twenty-three losses each, are three men from this state. This state's "Boy Governor," the youngest in U.S. history, was elected at age 23 and led its militia during the Patriot War from 1837 to 1838.
ANSWER: **Michigan** (The "Boy Governor" was Stevens T. Mason.)
[10m] This Ohioan lost twenty elections, including twice as the People's Party candidate for governor. He led a group proclaiming "Peace on Earth, Goodwill to Men, but Death to Interest on Bonds!"
ANSWER: Jacob (Sechler) **Coxey** [accept **Coxey**'s Army]
<American History>

12. Kevin Starr called this river's valley "the most productive unnatural environment on earth," since its agricultural productivity relies on reservoirs such as Hetch Hetchy. For 10 points each:
[10m] Name this river whose basin has more than a dozen dams, including one that creates Edison Lake. This river lends its name to the southern part of the Central Valley.
ANSWER: **San Joaquin** ("h'wah-KEEN") river [accept **San Joaquin** Valley]
[10h] The San Joaquin no longer gets overflow from this lake, which was dammed and diverted to provide irrigation. The Yokuts ("YOH-kuts") sailed reed boats on this freshwater lake, once the largest in the U.S. west of the Great Lakes.
ANSWER: **Tulare** ("too-LAIR-ee") Lake
[10e] An inverted river delta forms where the San Joaquin confluences with this other main river of the Central Valley. This river shares its name with California's capital.
ANSWER: **Sacramento** River
<Geography>

13. Multilayer van der Waals hetero·structures that have nonzero bandgaps are promising alternatives to this material. For 10 points each:
[10e] Name this conductive sheet of hexagonally arrayed carbon atoms.
ANSWER: **graphene**
[10h] The next generation of 2D nano·materials includes transition metal di·chalcogen·ides, or TMDs. The canonical TMD is this semiconductor composed of three atomic layers, which can be used as a photodetector or transistor, with a direct bandgap of 1.8 eVs ("electron-volts").
ANSWER: **molybdenum disulfide** [or **MoS₂**; or **moly**]
[10m] The electronic properties of TMDs partly result from the fact that the mono·layers lack this property, contributing a degree of freedom. In molecules with this property, Raman ("ramen") and IR ("I-R") vibration modes do not overlap, and observed electronic transitions do not preserve parity.
ANSWER: **centro·symmetry** [or **centrosymmetric**; or **inversion symmetry**; prompt on symmetry or symmetric]
<Chemistry>

14. A traveling exhibition titled for "Gods" with this property was organized by archaeologists Venzenz Brinkmann and Ulrike ("ULL-rick-uh") Koch-Brinkmann, and displays replicas of sculptures from antiquity. For 10 points each:
[10e] Name this property that is believed to have originally characterized those Greek and Roman sculptures before age, weathering, and, in some cases, intentional scrubbing changed them.
ANSWER: **color** [or **polychromy**; accept being **painted**; accept *Gods in **Color**: Polychromy in Antiquity* or ***Bunte Götter: Die Farben der Antike***]
[10m] *Gods in Color* includes a sculpture of Artemis sometimes named for this German art historian, who promoted the beauty of white marble. His book *The History of Ancient Art* was a major influence on Neoclassicism.
ANSWER: Johann Joachim **Winckelmann**
[10h] A signature piece from *Gods in Color* shows a performer of this activity in leggings and sleeves adorned with a colorful diamond pattern. The original work was on the Temple of Aphaea's ("uh-FAY-uh's") western pediment.
ANSWER: **archery** [prompt on fighting; reject "hunting"]
<Painting/Sculpture>

15. Answer the following about Aaron Burr's appearances in American literature, for 10 points each.
[10e] Aaron Burr is the title character of the first novel in the *Narratives of Empire* series by this American author, known for his one-liner-filled feuds with Norman Mailer and William F. Buckley, among others.
ANSWER: (Eugene Luther) Gore **Vidal** [or Eugene Louis **Vidal**]
[10m] Lieutenant Philip Nolan is forced to spend the rest of his life at sea after participating in Aaron Burr's conspiracy in this 1863 short story.
ANSWER: "The **Man Without a Country**" (by Edward Everett Hale)
[10h] An essay on Aaron Burr titled "The Virtue of History" appears in this 1925 collection of historical essays by William Carlos Williams, which begins with Eric the Red and ends with Abraham Lincoln.
ANSWER: ***In the American Grain***
<American Literature>

16. Northwestern Law professor Steven Lubet accused this scholar of conspiracy to commit murder, because she once gave a ride to a study subject who exited her car with a loaded gun. For 10 points each:
[10m] Name this sociologist who embedded among over-policed young Black men to write her 2014 book *On the Run*. Her father of the same surname was also a sociologist.
ANSWER: Alice **Goffman** (Her father was Erving Goffman.)
[10e] Alice Goffman's *On the Run* is set in this eastern U.S. city. An 1899 study titled for its "Negro" by W. E. B. DuBois was among the earliest works of sociology to present quantitative data.
ANSWER: **Philadelphia**, Pennsylvania [accept The **Philadelphia** Negro]
[10h] This Penn sociologist, who contrasted "Puritan Boston" with "Quaker Philadelphia" in a study of Two Protestant Ethics, popularized the acronym "WASP" in his 1964 study *The Protestant Establishment: Aristocracy and Caste in America*.
ANSWER: E(dward) Digby **Baltzell**
<Social Science>

17. Answer the following about Bogdan Maglich's Migma, a device that purportedly used colliding ion beams to perform nuclear fusion, for 10 points each.
[10e] The Migma was designed to minimize the involvement of these particles. In nuclear fission, the free propagation of these particles is necessary for a chain reaction to occur.
ANSWER: **neutron**s
[10h] If successful, the Migma would have been driven by the aneutronic ("A-neutronic") fusion of these *two* isotopes. They are the two lightest *stable* products of a process first proposed in the Alpher–Bethe–Gamow ("AL-fer-BAY-tuh-GAM-off") paper.
ANSWER: **deuterium** [or **hydrogen-2**; or **2-H**; accept **deuteron**s; prompt on hydrogen; prompt on D; reject "tritium" or "hydrogen-3"]
ANSWER: **helium-3** [or **3-He**; prompt on helium or He; reject "helium-4"]
[10m] Maglich argued that by continually injecting deuterons, he could bypass this man's criterion for when fusion energy gains exceed losses. Adding a factor of temperature to his criterion gives his "triple product."
ANSWER: John (David) **Lawson** [accept **Lawson** criterion or **Lawson** triple product]
<Physics>

18. This author drew on the rhythms of the musical genre *son* ("sone") in his collections *Motivos de son* and *El son entero* ("en-TEH-roh"). For 10 points each:
[10h] Name this poet and journalist of African descent. This author of *Tengo* and the onomatopoetic *Sóngoro cosongo* critiqued ongoing racial exploitation in *West Indies Ltd* ("limited").
ANSWER: Nicolás **Guillén** ("gee-YEN") [or Nicolás Cristóbal **Guillén** Batista]
[10e] Guillén is a poet from this Caribbean country, where "Guantanamera" ("gwahn-tah-nah-MAIR-ah") was written by national hero José Martí.
ANSWER: **Cuba**
[10m] In an eight-line poem, Martí wrote that he grows this plant "in July as well as in January," and would offer it as readily to a foe as to a friend. Your answer should include an adjective.
ANSWER: a **white rose** [or una **rosa blanca**; accept translated titles such as "I Grow A **White Rose**"; accept "Cultivo una **rosa blanca**"; prompt on rose or flower]
<World Literature>

19. Why is there something rather than nothing? For 10 points each:
[10e] This philosopher called that the fundamental question of metaphysics in his *Introduction to Metaphysics*. That essay shifted away from this author's focus on *dasein* ("DAH-zyne") in his *Being and Time*.
ANSWER: Martin **Heidegger** ("HIGH-degger")
[10m] A proposal that there are infinitely many possible worlds, only one of which is empty, was put forth in "Why is There Anything at All?" by Peter van Inwagen ("inn-WAH-gun"), who teaches at this university. Alvin Plantinga developed reformed epistemology while teaching at this university from 1982 to 2010.
ANSWER: University of **Notre Dame**
[10h] Thomas Baldwin introduced this argument for the possibility of an empty world. In this argument, you imagine a possible world with concrete objects, and then a series of possible worlds in which each one doesn't exist.
ANSWER: **subtraction** argument
<Philosophy>

20. Answer the following about the early history of computation in Canada. For 10 points each:
[10e] Canada's first mainframe computers, the UTEC ("YOO-teck") and the Ferut, were both housed at this city's namesake university in the 1950s. This provincial capital was once named York.
ANSWER: **Toronto** [accept University of **Toronto**]
[10m] The Ferut was used for "backwater calculations" to model the likely effects of this infrastructure project. Prime Minister John Diefenbaker ("DEE-fun-baker") and Queen Elizabeth II ("the-second") attended its opening ceremony in 1959.
ANSWER: **St. Lawrence Seaway** and Power Project [or Great Lakes-**St. Lawrence Seaway** System; or la **Voie Maritime du Saint-Laurent**; prompt on St. Lawrence River; prompt on Welland Canal by asking "What larger project was that a part of?"]
[10h] A computer that Canada's Defence Research Board nicknamed "Dirty Gertie" controlled this satellite, which studied the ionosphere. In September 1962, it became the first satellite to launch outside the U.S. or the U.S.S.R.
ANSWER: *Alouette*-1 ("al-WET one")
<Other History>