ACADEMIC COMPETITION FEDERATION

ACF NATIONALS 2022

PACKET 2

Packet by

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TOSSUPS

1. A woman with this first name hallucinates puppet-like corpses during boring dinner parties, which she avoids by rushing to the shop whenever she hears a bell signaling customers. A woman with this first name is forced by her husband to live in isolation in the woods after he exonerates her for poisoning him with arsenic. During a game of dominoes, a paralyzed old woman traces out half of an incriminating sentence about a woman with this first name but is stymied by a guest filling in a wholesome conclusion. A novel by François Mauriac ("mor-YAHK") is titled for a woman with this first name and the surname Desqueyroux ("dess-keh-ROO"). In a novel titled for a woman with this first name, Camille leaves a bite mark on the neck of his wife's lover Laurent ("loh-RAHN") as the two drown him on a boat trip. For 10 points, give this first name of an Émile Zola title character whose surname is Raquin ("rah-KEN").
ANSWER: **Thérèse** [accept **Thérèse** *Desqueyroux*; accept **Thérèse** *Raquin*]
<European Literature>

2. *Note to players: Names of the traditional instruments and their Western equivalents are all acceptable.* Duets between variants of this instrument are traditionally played at the funerals of the Dagara people. This is the main melodic instrument of the *xibelani* ("shee-bay-LAH-nee") dance of the Tsonga ("TSONG-guh") people. "Orchestras" ranging from five to hundreds of these instruments are the best-known music of the Chopi ("CHOH-pee") people. According to legend, a magical one of these instruments was so precious that if a fly landed on it, a king had it killed. That one of these instruments, named for Sosso, belonged to Soumaoro Kanté ("soo-mah-WOH-roh con-TAY") but was stolen by the griot Balla Fasséké ("BAH-lah fah-say-KAY"), in the *Epic of Sundiata* ("sun-JA-tah"). Variants of this non-metallic instrument can be played using the cross grip or Burton grip. Traditional versions of this percussion instrument, such as the *balafon* ("BA-luh-fahn"), use gourds as resonators under the keys. For 10 points, name this kind of percussion instrument whose wooden bars are struck with mallets.
ANSWER: **xylophone** [or **marimba**; or **gyil**; or **mbila**; accept **balafon** before mentioned; prompt on idiophone or percussion instrument]
<Other Fine Arts>

3. By one account, a ruler from this dynasty was convinced by a Tiberian Jewish magician named Besed ("beh-SED") to decree a mass iconoclasm of Christian images. A minister of this dynasty's eastern regions massacred peasant supporters of the rebel Peacock Army, but spared most of its leaders, and used the *shurta* police to enforce his law against peasant migration to cities. The Kaysanite ("KAY-suh-nyte") sect nurtured opposition to this dynasty with a propaganda campaign in Khorasan ("KOR-uh-sahn"). Mukhtar's ("mook-TAR's") rebellion against this dynasty was backed by *mawali*, who were recent converts to Islam that still had to pay the same *jizya* ("JIZ-yuh") tax as *dhimmis* ("DIM-meez"). This dynasty, which employed the vizier al-Hajjaj ("al-huh-JAHJ"), denied non-Arabs the same rights as Arabs. Consequently, non-Arabs flocked to a rebellion against its last ruler, Marwan II ("the-second"), under the black banners of Abu Muslim. For 10 points, name this caliphate overthrown by the Abbasids.
ANSWER: **Umayyad** ("oo-MAY-add") caliphate [or **Umayyad** dynasty, or **Umayyad** empire, or Banu '**Umayya**]
<World History>

4. This town's Clean Energy Tours showcases Norman Foster's Chesa Futura ("KAY-zuh foo-TOO-ruh") model home, which resembles an elongated pumpkin. This town features a museum dedicated to painter Giovanni Segantini, who painted landscapes of a nearby feature that includes paths like Hahnensee ("HAH-en-zee") and Diavolezza ("dee-AH-voh-LET-zah"). Elites flock to this town's annual White Turf horse race, contested on the ice of its namesake frozen lake. Facilities in this town have 21 times been the host of the FIBT ("F-I-B-T") World Championships, which include events taking place on the world's only natural bob run. This town in the canton of Graubünden ("GRAO-beun-den") is overlooked by Piz Nair ("pits NYE-er") and the Badrutt's Palace Hotel, called the "birthplace of winter sports." For 10 points, what Swiss alpine town contains the oldest ski resort in the world and hosted the 1928 and 1948 Winter Olympics?
ANSWER: **St. Moritz** [or **Sankt Moritz**, or **San Maurizio**, or **San Murezzan**]
<Geography>

5. This quantity is ignored by raising it to the zero·th power in the Cambridge/Aachen distance metric, unlike similar algorithms that take the smaller of two values for it. This quantity is infinite in the Breit ("bright") reference frame used to define the parton ("PART-on") model. This quantity is raised to the power of either 2 or –2 in k_T ("K-sub-T") and anti-k_T jet-detection algorithms, where k_T is this quantity's transverse form. Projecting spin onto this quantity's direction defines a particle's helicity. Scattering form factors are often written in terms of the "transfer" of this quantity, which is denoted q and measured in reciprocal space. This vector quantity is grouped with energy in a relativistic four-vector. According to the de Broglie ("duh-BROH-lee") relation, Planck's ("plonk's") constant over wavelength equals, for 10 points, what quantity that is paired with position in Heisenberg's uncertainty principle?
ANSWER: linear **momentum** [accept transverse **momentum** or **momentum** transfer; prompt on p; prompt on k_T or k-sub-T before "k_T"]
<Physics>

6. These animals appear next to couples having sex in frescos painted over doorways in the Necropolis of Monterozzi. That Etruscan tomb named for these animals includes a fresco of a scene from the *Cypria* in which Achilles hides next to a fountain to ambush Troilus. One side of the Hagia Triada Sarcophagus shows a man playing an *aulos* flute behind one of these animals that is bound to an altar. A white shell inlay encircles the snout of a *rhyton* shaped like the head of one of these animals. A *kouros* found among the "Persian rubble" at the Acropolis shows a man with an archaic smile carrying a young one of these animals on his shoulders. In addition to *Moschophoros*, works depicting these animals include a fresco from Knossos in which two women flank one of them as a man hangs in mid-air over its back. For 10 points, name these animals shown in Minoan leaping scenes.
ANSWER: **bull**s [accept **cow**s or **cattle**; accept **calf** or **calves** after "*kouros*," but reject otherwise]
<Painting/Sculpture>

7. The "thermodynamic enhancement factor" for this process, symbolized capital W, can be determined through potentio·static or galvano·static intermittent titration ("tye-TRAY-shun") experiments. The resistance due to this process is minimized by Benjamin Levich's rotating disk electrode. This process sets the timescale for the decay of current in the Cottrell equation for chrono·amperometry. If this process happens slowly inside a Nernst boundary layer, peak current scales with the square root of the scan rate. The rate of this process sets a cap on the Faradaic ("fair-uh-DAY-ick") current at an electrode when the reaction rate is high. In the absence of an electric field, the Goldman equation reduces to an equation relating the flux of this process to a coefficient, measured in centimeters squared per second, times the gradient of concentration. For 10 points, name this process governed by Fick's laws.
ANSWER: **diffusion** [prompt on mass **transport** or **motion**; prompt on ionic **transport**; reject "osmosis"; reject "adsorption"]
<Chemistry>

8. The end of a preface to a 1901 novel states that, in this place, "every second sun-burnt [man] is a sympathetic humorist" and "every third [man]" has "a big heart that keeps his pockets empty." A poem in a genre named for this place contrasts the speaker's "dingy little office" in the "dirty, dusty city" with the home of the "droving" title character. The line "for [this place] will never suit you, and you'll never suit [this place]" ends a poem "In Defence of" this place, which names a genre that includes "Clancy of the Overflow" and was the subject of the "Bulletin Debate." Lindsay Gordon and Henry Lawson wrote in a genre named for this place, which includes a poem that describes a man "under the shade of a coolibah tree" ("COO-lih-bah") who "sang as he watched and waited 'til his billy boiled." For 10 points, Banjo Paterson's "Waltzing Matilda" belongs to a genre alliteratively known as what kind of "ballad"?
ANSWER: the Australian **bush** [accept **bush** ballad; prompt on Australia; prompt on the "Outback" by asking "What is the most common name for this genre?"] (The first sentence is from Henry Lawson's preface to Miles Franklin's novel *My Brilliant Career*.)
<British Literature>

9. *Description acceptable.* Four year years after this agreement, its two chief negotiators blocked some "Fundamental Articles" which brought down the Hohenwarth ("HOH-en-vart") Cabinet. Arthur Griffith suggested this agreement as a precedent for Britain to follow in a book subtitled "A Parallel for Ireland." Count von Beust ("boyst") wrote some "memoirs" about negotiating this agreement, which ended an eighteen-year period of military dictatorship that began after a set of reformers issued "Twelve Points" and were subsequently crushed by the armies of Josip Jelačić ("YOH-seep YELL-ah-cheech") and Nicholas I ("the -first"). This agreement distinguished territorial armies called the Honvéd ("HON-vayd") and Landwehr ("LAHNT-vair") and was reached a year after the Battle of Königgrätz ("KOH-nig-GRETS"). One party pursued an aggressive Magyarization ("MAG-yar-ization") policy after, for 10 points, what compromise reached in 1867, which created a "dual monarchy" in Central Europe?
ANSWER: (the) **Ausgleich** ("OWS-glike") [or **Kiegyezés** ("KEE-egg-yeh-zaysh"); accept answers which refer to the creation of **Austria-Hungary** or the **Austro-Hungarian** empire, or **Austria** and **Hungary** becoming a dual monarchy, or **Austria** and **Hungary** having dual/equal status; accept **Austro-Hungarian** Compromise of 1867; accept **Compromise of 1867** before "compromise" and prompt thereafter; prompt on Compromise]
<European History>

10. Near the end of a work of philosophy, the author calls a practitioner of this discipline "my recreation, my preference, my cure for all Platonism." An essay about this discipline by the same author ends by claiming that "truthfulness" may "assist a totally decorative culture to collapse"; that essay on this discipline opens by imagining a "grazing herd" whose members cannot say they are happy because they immediately forget everything, including what they're about to say. This discipline is divided into critical, monumental, and antiquarian forms in an essay from the *Untimely Meditations* on the "Uses and Disadvantages" of it "for Life." A preface cites "schooling in" philology and this extant discipline as inspiring the method used in *On the Genealogy of Morals.* For 10 points, Nietzsche often praised Thucydides ("thoo-SID-uh-deez"), a father of what academic discipline?
ANSWER: **history** [or *Historie*; accept "On the Use(s) and Disadvantage(s) of **History** for Life"; or that with "Use(s) and Abuse(s)" or "Advantage(s) and Disadvantage(s)" instead; accept "*Vom Nutzen und Nachtel der **Historie** für das Leben*"; prompt on descriptive answers like "looking backward in time" or "investigating the origins of phenomena"]
<Philosophy>

11. A piece by this composer uses 123 longs, exactly thrice as many breves ("breeves"), and exactly thrice as many semibreves. After this composer's death, his student Eugene Deschamps ("day-SHAHM") wrote two poems about him that were set as a double ballade ("buh-LAHD") by F. Andrieu. In a three-voice piece by this composer, the Triplum and Cantus sing their own parts forwards and then each other's parts backwards. This composer has poetic dialogues with Nature and Love in the Prologue to his collected works. In a piece by this composer, the name of a Biblical king is sung in a staggered, hiccup-like rhythm. This composer of *Hoquetus* ("hoh-KWAY-toose") *David*, "Ma fin est ma commencement" ("mah FEN ay mah koh-mahnss-MAHN") and "Douce Dame Jolie" ("dooce dahm zhoh-LEE") was equally known as a poet, and is often credited with codifying 14ᵗʰ-century *formes fixes* ("form FEEKS"). For 10 points, the oldest known Ordinary Mass setting by a single composer is what French composer's *Messe de Nostre Dame* ("mess duh noh-truh DAHM")?
ANSWER: Guillaume de **Machaut** ("mah-SHOW")
<Classical Music>

12. A character in this play asks "Isn't it odd that you can build a pyramid from the top down?" while talking of present and future grandchildren. That character in this play calls doing nothing "the purgatory *before* purgatory," and recalls thinking about adultery while counting moles on her husband's back. This play was expanded from the first in a shelved pair of one-acts on life and death, whose latter part was expanded into the play *All Over*. In this play, a woman says "Such noise they make," and a man remarks that they'll crash one day, each time a plane flies overhead. In this play, the claim that a "slimy creature" became "porpoises and sharks, and manta rays, and whales, and you" is made to explain the idea of evolution to Leslie and Sarah, who have tails. For 10 points, name this play in which the human spouses Nancy and Charlie meet two lizard people, which Edward Albee set on a beach.
ANSWER: *Seascape*
<American Literature>

13. These people's magicians lured an enemy king into an ambush by hiding streams from him as he was suffering from thirst. Because these people burned their ships on arriving in their homeland, they were said to have come in clouds of mist. The chief healer of these people kept his daughter Airmed from studying the 365 healing herbs that grew on the grave of his son Miach ("MEE-ukh"), who he jealously murdered. These people's greatest hero called himself *Samildánach* ("SAM-ul-DAHN-ukh"), or "master of many arts," and owned a spear that was one of their Four Treasures. The death of Ruadán ("ROO-ah-dahn") led his mother, a member of this race, to perform the first keening. After a king of these people lost a hand in battle, the healer Dian Cécht ("DEE-in kekht") made him a silver one. These people were ruled by Nuada ("NOO-uh-duh") and defeated the Fomorians at Magh Tuireadh ("mye TOO-ruh"). For 10 points, name this mythical Irish race that included Brigid ("BRIDGE-id") and Lugh ("loo").
ANSWER: **Tuatha Dé** Danaan ("TOO-uh-huh day DAH-nun") [or **Tuath Dé**; prompt on people of Danu; prompt on people or gods of Ireland]
<Mythology/Legends>

14. This book quotes George Canning's line that "if we do not mismanage our affairs sadly," [the subject of this book] "is English," in a chapter about a "declaration of independence" hailed by British warships. In the years before his 2015 death, this book's author said "Reality has changed a lot. I have changed a lot" while repudiating many of its theses. Three journalists pithily summarized this book's conclusion as "it's their fault" in a chapter mocking it as the "Idiot's Bible." Its introduction, "120 Million Children in the Eye of the Hurricane," describes the failure of Nixon's Alliance for Progress. At a 2009 summit in Trinidad, Hugo Chávez gifted this book to Barack Obama. Upon publication, it was banned due to its author's sympathies for Tupamaro ("too-pah-MAH-roh") guerillas in his home country of Uruguay. For 10 points, name this history of the "pillage of a continent" written by Eduardo Galeano ("gah-lay-AH-noh").
ANSWER: The *Open Veins of Latin America* [or Las *venas abiertas de América Latina*]
<Other History>

15. An NIH core facility that produces these molecules is operated at Emory University and is called the TCF ("T-C-F"). The Epx ("E-P-X") pore-forming toxins of enterococcus ("enter-oh-KAH-kuss") use these molecules as receptors. Polymorphisms in these proteins are denoted by a series of four numbers separated by colons; those poly·morphisms are strongly associated with severe drug reactions to abacavir ("uh-BACK-uh-veer") and carbamazepine ("car-buh-MAZZ-uh-peen"). The CLIP ("clip") peptide is removed from one version of these proteins before they go to the cell surface. Fluorescently labeled tetra·mers of these proteins are used to detect antigen-specific cells. Erp57 ("E-R-P-57"), tapasin ("TAP-uh-sin"), and TAP ("tap") are all required for loading these proteins with peptides. The two primary classes of these proteins bind to CD4 ("C-D-4") and CD8 ("C-D-8") respectively. For 10 points, name these proteins that present antigens to T cells, and which have to be matched between organ donors and recipients.
ANSWER: **major histocompatibility complex** [or **MHC**; accept **human leukocyte antigen** or **HLA**; accept answers that include "Class I" or "Class II" or either of those numbers; accept **MHC** tetramers; prompt on just tetramers before "protein"]
<Biology>

16. In several tales from *The Clear Mirror*, this "self-arising" figure manifests as statues made of clay or wood. In another tale, white and green tears shed by this figure become forms of a three-eyed goddess who, like this figure, guards against "eight great perils" including thievery. In a tale named for the South Sea, this figure is accompanied by the Dragon Girl and the disabled "child of wealth" Sudhana ("SOO-duh-nuh"). Strings of 108 *mala* beads correspond to this figure's 108 canonical forms. A six-syllable chant dedicated to this figure, *oṃ maṇi padme hūṃ* ("aum MAH-nee PUDD-may hoom"), means "the jewel is in the lotus." This consort of Tara suffered immense head pain while contemplating the world's suffering, so the Buddha blessed this figure with eleven heads and a thousand arms to free humanity from *samsara* ("sum-SAH-rah"). For 10 points, name this bodhisattva ("boo-dee-SUT-vuh") of infinite compassion.
ANSWER: **Avalokiteśvara** ("UH-v'loh-kee-TESH-v'ruh") [or **Guanyin**, or **Guanshiyin**, or **Kwun Yum**, or **Kannon**, or **Kanzeon**, or **Gwanseum**, or **Quán Thế Âm**, or **Lokanat**, or **Chenrezig**; or **Padmapāṇi**; prompt on Amitabha]
<Religion>

17. A spacecraft scheduled to visit this body in 2030 will map it with the REASON ("reason") radar-sounding system, and will make at least 40 fly-bys instead of entering orbit. Sulfuric acid or magnesium sulfate may provide the color of the veiny red streaks that cover this body's surface. This body was the main intended target of the JIMO ("J-I-M-O") orbiter, which NASA scrapped and replaced with this body's namesake "Clipper" mission. In 2013, Hubble discovered that, like bodies previously visited by *Cassini* and *Voyager 2*, this smoothest natural solid object in the Solar System spews 100-mile vapor plumes from its surface geysers. This moon, the intermediate member of the best-known Laplace ("luh-PLASS") resonance, has a subsurface water ocean kept in liquid form by tidal heating from its orbital interactions with Io ("EYE-oh") and Ganymede. For 10 points, name this fourth-largest moon of Jupiter.
ANSWER: **Europa** [or **Jupiter II**; accept **Europa** Clipper; reject "Jupiter"] (JIMO was the Jupiter Icy Moons Orbiter.)
<Misc. Science>

18. *Note to players: Specific term required.* Henry Farrell and Abraham Newman wrote that asymmetries in this property can be exploited by using the "panopticon effect" in a paper titled for its "weaponized" type. A game-theoretic framework developed by Kelley and Thibaut is often used to assess the "sensitivity" type of this property, which contrasts with its "vulnerability" type characterized by lack of alternative policy frameworks. This is the second title concept of a 1977 book that claims it is characterized by "multiple channels," an "absence of hierarchy," and a small role for military force. Economic issues prompt state actors to use "linkage strategies" according to that book titled for *Power and* [this property]. For 10 points, Joseph Nye and Robert Keohane ("KOH-hane") theorized a "complex" form of what property, referring to deep connections between states?
ANSWER: **interdependence** [or **interdependent**; accept vulnerability **interdependence** or sensitivity **interdependence**, or complex **interdependence**, or economic **interdependence**, or *Power and **Interdependence***; reject "dependent" or "dependency"]
<Social Science>

19. Judge John Rowan's eulogy for a general of this surname described him as a fallen "mighty oak of the forest." A woman who married into the Croghan ("crawn") family let her amputee brother of this surname live in the estate of Locust Grove outside Louisville, Kentucky. That man's brother with this surname got Nicholas Biddle to publish his journals and advocated the "factory system" of government-sponsored trading posts. An alcoholic general of this surname defeated Black Hoof's Shawnee forces at Piqua ("PICK-wah") and seized Fort Kaskaskia and Fort Vincennes ("vin-SENZ") in present-day Indiana during a 1779 campaign. Another man with this surname owned the slave York, who traded with the Nez Percé ("nez purse"). For 10 points, give this surname of general George Rogers, whose youngest brother William led the Corps of Discovery with Meriwether Lewis.
ANSWER: **Clark** [accept George Rogers **Clark**, or Lucy **Clark** Croghan, or William **Clark**]
<American History>

20. A short story uses one of these animals wanting to be itself and a stone wanting to be a stone to demonstrate Spinoza's knowledge that "all things long to persist in their being." These animals title a short story that ends with the protagonist giving a beggar some stones that self-multiply. A story titled for these animals ends with the narrator stating with frustration that every time he tries to imagine one, it looks too much like a dog or bird. In a novel titled for these animals, sections titled "I Heard Her Sing" are narrated by the photographer Codác ("co-DOCK"). These animals appear in the English-language title of a collection that is called *The Maker* in Spanish and includes the story "Borges and I." For 10 points, language-obsessed Bustrófedon ("boo-STROH-fay-dohn") and the actor Arsenio Cué ("ar-SAY-nee-oh coo-AY") live in Havana in a Guillermo Cabrera Infante ("cah-BRAY-rah een-FAHN-tay") novel titled for "Three Trapped" examples of what animals?
ANSWER: **tiger**s [or *tigres*; accept *Dreamtigers*; accept "Blue **Tigers**"; accept "**Tigres** azules"; accept *Three Trapped **Tigers***; accept *Tres tristes **tigres***]
<World Literature>

BONUSES

1. In a novel by this author, Nick and Olivia turn to eco-terrorism after they fail to protect the redwood Mimas from the predations of the logging industry. For 10 points each:
[10m] Name this American author of *The Echo Maker* who won a Pulitzer in 2019 for that novel, *The Overstory*.
ANSWER: Richard **Powers**
[10e] A strike by loggers in Oregon lies at the heart of *Sometimes a Great Notion*, a novel by this American author, whose prior novel is set at a psychiatric hospital administered by Nurse Ratched ("RATCH-id").
ANSWER: Ken (Elton) **Kesey**
[10h] In another American novel, this character gives up on trying to be adopted after his final pair of adoptive parents, Billy and Grant Winkle, are killed by a log drive started by the Ramses Paper Company. He then returns to the orphanage where he was raised and trains to be an obstetrician instead.
ANSWER: **Homer** **Wells** [accept either name] (He is from *The Cider House Rules*.)
<American Literature>

2. A form of this disorder occurring alongside neurological abnormalities, dwarfism, and hypo·gonadism is called De Sanctis–Cacchione ("cock-YO-nay") syndrome. For 10 points each:
[10m] Name this autosomal recessive genetic disorder caused by mutations in nucleotide excision repair proteins like ERCC6 ("E-R-C-C-6") and ERCC8 ("E-R-C-C-8"). It is marked by incredible sensitivity to UV light and a very high risk of skin cancer.
ANSWER: **xeroderma pigmentosum** ("zero-derma pig-men-TOH-sum") [or **XP**]
[10e] UV light commonly causes dimerization ("dye-mer-eye-ZAY-shun") of this nucleotide in DNA. This nucleotide base pairs to adenine.
ANSWER: **thymine** [or **T** or **thymidine**]
[10h] Patients with xeroderma pigmentosum have a ten-thousand-fold relative risk of this kind of keratinocyte skin cancer. This type of cancer forms keratin pearls on histology and stains positive with p63 ("P-63") and p40 ("P-40").
ANSWER: **squamous cell** carcinoma [or **SCC**]
<Biology>

3. Linguists speculate that one letter proposed by this man represented the *sonus medius* ("SOH-noose MAY-dee-oose"), a short vowel which appeared before labial ("LAY-bee-ull") consonants. For 10 points each:
[10m] Name this Roman leader who advocated including the letters anti·sigma and di·gamma in the Latin alphabet. He was the last known speaker of the Etruscan language.
ANSWER: **Claudius** [or Tiberius **Claudius** Caesar Augustus Germanicus]
[10e] Spurius Carvillius Ruga is credited with adding a stroke to this letter of the Latin alphabet to create the letter "G." The spelling of Julius Caesar's personal name began with this letter in Roman times.
ANSWER: **C** (The Romans spelled his name "Caius Iulius Caesar")
[10h] According to Martianus Capella, this person advocated removing "Z" from the Latin alphabet since, when spoken, it made the mouth resemble a corpse. A speech attributed to this person declares "every man is the architect of his own fortune."
ANSWER: **Appius** Claudius Caecus
<Ancient History>

4. Frederic Rzewski ("ZHEFF-skee") used these chords to depict the incessant noise of a factory in "Winnsboro Cotton Mill Blues." For 10 points each:
[10m] Name these chords consisting of three or more adjacent pitches. Henry Cowell ("COW-ull"), who popularized the name for these chords, used them extensively in piano pieces like "The Tides of Manaunaun."
ANSWER: tone **cluster**s [or note **cluster**s]
[10e] This student of Henry Cowell and pioneer of indeterminate music used harsh tone clusters in his piece "In the Name of the Holocaust." He composed *Sonatas and Interludes* for an instrument he invented, the prepared piano.
ANSWER: John **Cage**
[10h] This American avant-garde composer of "Suicide in an Airplane" used tone clusters throughout his 1913 piece "Wild Men's Dance." He was also a virtuoso pianist who performed the American premiere of Ravel's *Gaspard de la Nuit* ("gah-SPAR duh lah NWEE").
ANSWER: Leo **Ornstein** [or Lev **Ornshteyn**]
<Classical Music>

5. A 2006 book by Linda Martín Alcoff is titled for "Visible" examples of this concept. For 10 points each:
[10e] Name this sense of self-image, which often includes one's race and gender. An Alcoff essay asks "Who's afraid of" a type of "politics" named for this word.
ANSWER: **identity** [accept **identity** politics; accept *Visible **Identities**: Race, Gender, and the Self*; accept "Who's afraid of **identity** politics?"]
[10m] Alcoff's section on philosophical critiques of identity traces the history of the topic via the book *Sources of the Self* by this Canadian philosopher of *A Secular Age* who argued for multiculturalism based on a "politics of recognition."
ANSWER: Charles **Taylor** [or Charles Margrave **Taylor**]
[10h] In 2017, Alcoff was one of the editors who resigned from a philosophy journal for delivering an unauthorized apology for publishing Rebecca Tuvel's article that defended a particular identity. Name both the journal where Alcoff was editor and the identity Tuvel defended.
ANSWER: *Hypatia* and **transracial** [accept **transracial**ism for the latter]
<Philosophy>

6. One of this region's counties is named for state geologist Douglass Houghton, who was sent by Henry Schoolcraft to survey its lands. For 10 points each:
[10h] Name this region where labor unrest was encouraged by a Finnish-language socialist newspaper published in the town of Hancock. Charles Moyer led a 1913-14 strike against the Calumet-Hecla ("KAL-yoo-MET HECK-luh") company in this region.
ANSWER: **Copper Country** [or **Keweenaw** Peninsula; accept **Copper Country** miners strike; prompt on Upper Peninsula of Michigan or the UP ("U-P")]
[10e] After the strike, many skilled Cornish miners left Copper Country to get jobs at this Michigan-based company, which promised a minimum wage of 5 dollars per day beginning in 1914.
ANSWER: **Ford** Motor Company
[10m] This corporation financed lodges and other public works in Copper Country after the local mining industry went into terminal decline. Herbert Hoover created this corporation in 1932 to combat the Great Depression.
ANSWER: **Reconstruction Finance** Corporation [or **RFC**]
<American History>

7. Susanna Centilivre used this event as the backdrop for her play about the unfaithful Count Bassino, *The Perjur'd Husband*. For 10 points each:
[10h] Name this event that provides the setting for a play that originated the line "there is no sinner like a young saint." In that play set during this event, a wealthy man forces Belville to take his place in a duel over an expensive courtesan.
ANSWER: **Carnival** [accept the Venetian **Carnival** or the Naples **Carnival**]
[10e] The latter play, *The Rover*, is by this female Restoration author of *Oroonoko*, whose pseudonym Astrea was later borrowed by Centilivre.
ANSWER: Aphra **Behn**
[10m] Colonel Fainwell dons four disguises to dupe a woman's four guardians in a Centilivre play titled "A Bold Stroke" for one of these people. A play titled for this type of person includes a scene in which a man feigning impotence talks with two women about porcelain in sexual double entendres.
ANSWER: **wife** [accept *A Bold Stroke for a **Wife*** or *The Country **Wife***] (The scene is the "china scene" from *The Country Wife.*)
<British Literature>

8. Lectures on this problem typically propose flawed solutions based on taking turns or leaving one note, then give a correct solution using two notes to satisfy both safety and liveness. For 10 points each:
[10h] Name or describe this problem used to illustrate the importance of synchronization. In this problem, a person arrives home, notices something, and leaves, all before their roommate arrives home and does the same.
ANSWER: **too much milk** problem [accept descriptions of the problem of two people coordinating who will **buy milk**; prompt on milk problem]
[10e] The roommates in the "too much milk" problem represent these simple execution units of a process. A scheduler may assign these units to a system's cores in a parallel scheme.
ANSWER: **thread**s [accept **multithreading**]
[10m] "Too much milk" can be solved with a mutex ("mew-tex") or lock built from a binary one of these variables. These variables track and control access to a resource shared among threads.
ANSWER: **semaphore**s [accept binary **semaphore**s]
<Misc. Science>

9. The name of these groups reflects their strict adherence to doctrines endorsed by Byzantine emperors, including the Byzantine Rite. For 10 points each:
[10h] Name these groups of Eastern Christians whose last uniting patriarch was Athanasius III ("the third") Dabbas. Like the nearby Maronites ("MARE-uh-nites"), some groups of them are in communion with the Catholic Church.
ANSWER: **Melkite**s [or **Melchite**s] ("Melek" means king, reflecting Byzantine imperial stances.)
[10e] The Melkites reconciled with the Catholic Church at this church council of the 1960s, which formally allowed the mass to be given in languages other than Latin.
ANSWER: **Vatican II** ("vatican two") [or **Second Vatican** Council; prompt on Vatican Council]
[10m] Before Vatican II, the Melkite Catholic Church heavily contested this dogma. The Melkite leader Gregory II ("the second") Youssef rejected this doctrine, which was promulgated by Pius IX ("the ninth") after the First Vatican Council in the bull *Pastor aeternus* ("eye-TURN-us").
ANSWER: **papal infallibility** [or **infalibilitas papae** or **infallibilità papale**; prompt on infallibility or infallibilitas]
<Religion>

10. This artist designed a giant statue that awakens from atop a pedestal and attacks the titlecrew of a 1963 film. For 10 points each:
[10h] Name this pioneering visual effects artist who worked on films like *Clash of the Titans*. A fight scene between live actors and walking skeletons in *Jason and the Argonauts* reflects his "Dynamation" model of stop motion.
ANSWER: Ray **Harryhausen** [or Raymond Frederick **Harryhausen**]
[10m] Harryhausen considered this "Mad" English Romantic painter a father of cinema due the theatrical quality of his paintings, which include *The Great Day of His Wrath* and *Belshazzar's Feast*.
ANSWER: John **Martin**
[10e] In a scene in *Mysterious Island* in which people cross a ravine using a fallen log, Harryhausen paid homage to his mentor Willis O'Brien's work on this 1933 film, whose title character is native to Skull Island.
ANSWER: ***King Kong***
<Other Fine Arts>

11. Answer the following about integrating the democratic process with smartphones, for 10 points each:
[10e] In the lead-up to 2021 Duma elections, tech firms in Russia removed the "Smart Voting" app developed by allies of this imprisoned opposition leader, who was poisoned by a nerve agent in 2020.
ANSWER: Alexei (Anatolievich) **Navalny** ("nah-VAHL-nee")
[10m] In 2012, this country's Net Party created the DemocracyOS app to translate laws into everyday language. In October 2021, a court in this country closed an investigation into Alberto Nisman's death.
ANSWER: **Argentina** [or **Argentine** Republic or República **Argentina**]
[10h] This prolific open-source programmer, who has identified as "post-gender" and as a "conservative anarchist," has overseen digital democracy and COVID tracing apps as Taiwan's "digital minister."
ANSWER: Audrey **Tang** [or **Táng** Fèng]
<Current Events>

12. This equation represents either a hardening spring or a softening spring depending on the coefficient of its third-order term. For 10 points each:
[10h] Name this equation describing a nonlinear driven harmonic oscillator. It has a term proportional to the cube of displacement, unlike the "x-squared-x-dot" term in the van der Pol oscillator.
ANSWER: **Duffing** equation [accept **Duffing** oscillator]
[10m] Yoshisuke Ueda ("yoshi-soo-kay oo-AY-duh") showed that the Duffing oscillator can trace out a chaotic attractor on the "sections" produced by this operation. This map takes points in phase space to their evolved values one period later.
ANSWER: **Poincaré** ("pwan-kah-RAY") map [accept **Poincaré** section]
[10e] In addition to modeling nonlinearity, the Duffing equation includes a term for this phenomenon. Often caused by viscosity or friction, this phenomenon is the decay of a harmonic oscillator's amplitude over time.
ANSWER: **damp**ing [accept **damp**ed harmonic oscillator; prompt on friction]
<Physics>

13. This author began "I play Haydn after a black day / and feel a simple warmth in my hands" in his poem "Allegro." For 10 points each:
[10m] Name this poet, some of whose poems were translated by Robert Bly in *The Half-Finished Heaven*. This Nobel Laureate used notes from his grandfather's logbook to create the long poem *Baltics*.
ANSWER: Tomas **Tranströmer** ("TOO-moss TRON-struh-mer")
[10e] Tranströmer is from this country, meaning that his receipt of the Nobel Prize provoked some criticism that committee members had favored a native son.
ANSWER: (Kingdom of) **Sweden** [or Konungariket **Sverige**]
[10h] A Tranströmer poem titled for this type of vessel imagines "Liszt and Wagner" staying "together with the restless woman who is married to King Midas" and describes this vessel as "heavy-laden with their lives, two round trips and a one-way."
ANSWER: **gondola** [accept "Sorrow **Gondola** No. 2"; accept "Sad **Gondola** No. 2"; accept *Sorge**gondolen***; accept "trash **gondola**"; prompt on <u>boat</u> or <u>ship</u> or <u>sea-vessel</u>]
<European Literature>

14. XKCD ("X-K-C-D") occasionally depicts a man with this surname riding a hot air balloon into the blogosphere, where he edits the blog *Boing Boing*. For 10 points each:
[10m] Give this surname of Cory, a Canadian-British digital rights activist. An unrelated author with this surname wrote about the performer Oscar the Amorous Octopus in his novel *World's Fair*.
ANSWER: **Doctorow** [accept Cory **Doctorow** or E. L. **Doctorow**]
[10e] Cory Doctorow is a fierce advocate of this non-profit group, which distributes licenses that allow free use of photos, books, and other copyrighted material. Its logo consists of the letters "CC."
ANSWER: **Creative Commons**
[10h] In this Cory Doctorow novel released under a CC license, Julius seeks to prevent the virtualization of Disney World, which is run by rival "adhocracies" that compete to gain as much Whuffie as possible.
ANSWER: ***Down and Out in the Magic Kingdom***
<Other Academic>

15. This main tried to avert a succession crisis after his death by exiling his nephew Hidetsugu ("hee-day-tsoo-goo") to Mount Koya and having him commit suicide. For 10 points each:
[10e] Name this man, the second of Japan's "three unifiers" during the Sengoku era.
ANSWER: **Toyotomi Hideyoshi** [accept either underlined portion; accept **Hashiba**; prompt on <u>rat</u> or <u>nezumi</u>]
[10m] Hideyoshi appointed this number of commissioners to dictate the realm's policy after his death. He also appointed this many elders as regents on behalf of his son Hideyori.
ANSWER: **five** [or **go**; accept Council of **Five** Elders, or **Five** Commissioners, or **Go**-Tairō, or <u>Go</u>-Bugyō]
[10h] A member of the Council of Five Elders who was adopted into this clan inaugurated the Sekigahara campaign by building Aizu ("eye-zoo") castle. His adopted father from this clan was called the "Dragon of Echigo" and was one of the few generals to defeat Oda Nobunaga, winning at the Battle of Tedorigawa ("teh-doh-ree-gah-wah").
ANSWER: **Uesugi** ("oo-ay-soo-ghee") clan [accept **Uesugi** Kagekatsu or **Uesugi** Kenshin]
<World History>

16. The ratio of two measures of this quantity, M2 ("M-2") and M0 ("M-0"), gives one measure of the multiplier for policies such as quantitative easing. For 10 points each:
[10e] Name this economic quantity. Another measure of it, M1 ("M-1"), consists of currency, demand deposits, and other highly liquid deposits.
ANSWER: **money supply** [or **monetary supply**, or **monetary base**; prompt on money or supply]
[10m] A commonly-used macroeconomic equation sets the money supply times [emphasize] *this quantity* equal to price times quantity, or alternatively, equal to price times the number of transactions at a given time.
ANSWER: **velocity** of money [or monetary **velocity**; prompt on V]
[10h] In 2021, the Federal Reserve discontinued its measurement of the money supply named for this property. The money supply named for this property includes all monetary assets as redeemed at par value.
ANSWER: **zero maturity** [or money at **zero maturity**; prompt on maturity or MZM]
<Social Science>

17. William Simpson was nicknamed for this war because of the detailed sketches he made for the *Illustrated London News*. For 10 points each:
[10e] Name this war, during which Roger Fenton took the photograph *The Valley of the Shadow of Death* during the Siege of Sevastopol ("suh-VAST-uh-pole") by British and Turkish forces.
ANSWER: **Crimean** War [or guerre de **Crimée**, or **Krymskaya** Voina]
[10h] This journalist, regarded as one of the first modern war correspondents, coined the term "thin red line" in his description of the Siege of Sevastopol while working for *The Times* of London.
ANSWER: William Howard **Russell**
[10m] Russell wrote the preface to this woman's autobiography about her *Wonderful Adventures in Many Lands*. This British-Jamaican nurse set up the "British Hotel" during the Crimean War.
ANSWER: Mary **Seacole**
<European History>

18. In this section, the protagonist exchanges opening line suggestions with her boarder Saul Green, revealing that the sentence that opened the first *Free Women* section was actually fictional.
For 10 points each:
[10m] Name or describe this section, which ends a novel whose other sections detail the protagonist's year in the British Communist Party and the plot of her novel *Frontiers of War*.
ANSWER: the **golden notebook** [accept equivalents like the title notebook of *The **Golden Notebook***; prompt on the last notebook or similar answers]
[10e] This British-Zimbabwean author wrote the autobiographically-inspired *The Golden Notebook*.
ANSWER: Doris **Lessing** [or Doris May **Lessing**; or Doris May **Tayler**]
[10h] Another major novel of the 1960s by a British Communist Party member was *The Adventurers* by an author with the first name Margot and this last name. A British company of this name published the first UK edition of Achebe's *Things Fall Apart*.
ANSWER: **Heinemann** [accept Margot **Heinemann**; accept William **Heinemann** Ltd.]
<World Literature>

19. An artist with this married surname painted *The Love Potion*, in which a sorceress in a yellow robe brews the titular concoction while a black cat sits at her feet. For 10 points each:
[10h] Give this surname of the Pre-Raphaelite artist Evelyn, who also painted Night and Sleep flying over the earth, scattering poppies. Her husband William was a potter and tile designer.
ANSWER: **De Morgan** [accept Evelyn **De Morgan** or William **De Morgan**; prompt on Mary Evelyn Pickering]
[10m] Evelyn De Morgan's *Music Sweet Music* depicts this saint, whom John William Waterhouse showed sleeping in a chair as kneeling angels play a violin and bowed lute for her. She plays the organ in the Ghent Altarpiece.
ANSWER: Saint **Cecilia**
[10e] Another work by De Morgan shows three "spirits" of these events creating chaos over a rough sea. A painting by Rembrandt of one of these events on the Sea of Galilee was stolen in 1990.
ANSWER: **storm**s [accept The **Storm** Spirits; accept The **Storm** on the Sea of Galilee]
<Painting/Sculpture>

20. Di·azo·naphtho·quinone esters are used in these materials because they undergo light-catalyzed Wolff rearrangements to form ketenes ("KEY-teens"). For 10 points each:
[10m] Name these polymeric ("poly-MAIR-ick") resins used in photo·lithography. Their "positive" type becomes more soluble in a developer solution after they're exposed to light through a mask.
ANSWER: photo**resist**s [reject "photomasks" or "masks"; reject "photonegatives" or "negatives"]
[10e] To prevent photoresists from reacting with ambient blue light, microfabrication is traditionally done in clean rooms illuminated only by this color of light, a mixture of red and green light.
ANSWER: **yellow** light [or **amber**; reject "brown"; reject "orange"]
[10h] Microfabrication relies on wet etchants that selectively degrade unmasked silicon on this crystal plane, which lies parallel to the surface of the photoresist. Please give your answer using Miller indices.
ANSWER: {**100**} ("**one zero zero**") plane [reject {010} and {001}]
<Chemistry>