

## CMST II

### Packet 4

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1. **A film set during this leader's rule includes a scene in which the protagonist watches a group of girls playfully run around and jump over a fire. To pass this leader's censors, a film whose original ending showed a woman entering her cousin's bedroom was reworked to show them playing cards with a servant, implying a threesome. A young girl finds a wounded soldier in a barn and imagines Frankenstein's monster appearing to her by a lake in a film set during this leader's rule, *The (\*) Spirit of the Beehive*.** In another film, a captain under this leader murders a rabbit hunter and bludgeons his son with a bottle. In that film, the protagonist eats two grapes, awakening a child-eating monster with eyeballs on its hands. This leader's government is satirized in the films *The Exterminating Angel* and *Viridiana* by a director who worked in exile after opposing this leader, Luis Buñuel. For 10 points, Guillermo del Toro's film *Pan's Labyrinth* is set during the rule of what fascist dictator? ANSWER: Francisco **Franco** (Bahamonde)

<TM - Arts: Film>

This is the title occupation of the protagonists of a 2022 Keith Huff play in which Buddy Maple heads to the January 6th Capitol Riot with fellow OxyContin addict Dan Bandana. For 10 points each:

[10m] Give this occupation of the former athlete Troy Maxon, who tries to get his son Cory to get a "real job" rather than pursue his dreams.

ANSWER: **garbageman** [or **garbage** truck driver, **garbage** collector, **trash** collector, **sanitation** worker, **waste** management worker, and other clear equivalents]

[10e] In August Wilson's *Fences*, Troy was never able to make a sustainable living as an athlete because of the segregation of this sport, which he references by insisting he will "go down swinging" before his eventual death.

ANSWER: **baseball**

[10h] Bono claims to fear having children because his absentee father had this condition, which Troy insists his "Daddy ain't had." Troy then monologues about the time his father "whupped" him with a mule's leather strap over a girl, after which Troy "lost all fear" and "[became] a man."

ANSWER: **walking blues** [or "them **walking blues**"; prompt on **blues**]

<JM - Literature: American>

2. **A motif depicting three of these animals in triskelion-like fashion probably originated in China before becoming common in European gravestones and synagogues. In a Salish myth, this animal gains a distinctive physical feature when a woman smacks it with a stick because it cracked a joke upon seeing her genitals. As Mishaabooz, the Anishinaabe ("uh-NISH-in-AH-bay") deity Nanabozho has this animal's form. In *Myth and Meaning*, Claude Levi-Strauss ponders the widespread mythological association between twins and a (\*) physical deformity named for this animal. In East Asian cultures, the pattern of dark spots on the moon is identified with this animal. Among enslaved people in the US, West African myths depicting this trickster animal consolidated into a character designated with an abbreviation of "brother." For 10 points, give this animal whose association with the Germanic goddess Eostre inspired an egg-bringing holiday figure.**

ANSWER: **hare**s or **rabb**its [accept "Br'er **Rabbit**;" accept **bunny** or **bunnies**] (The facial deformity mentioned is "hare-lip.")

<JM - Thought: Soft Social Science (Mythology)>

In a monograph about this specific chord, Brian Magee argues that its harmonic concept was an attempt to capture Arthur Schopenhauer's philosophical ideas about longing and desire. For 10 points each:

[10m] Give this chord named for its role as a *Leitmotif* for a title character from a harmonically groundbreaking opera. This dissonant, ambiguous chord was daringly left unresolved until the work's climactic "love-death" scene.

ANSWER: **Tristan** chord [accept the notes "**F, B, D sharp, G sharp**" in precisely that order] (from Richard Wagner's *Tristan and Isolde*)

[10e] This Impressionist composer of "Clair de Lune" humorously deployed Wagner's Tristan chord, instructing to play it "with great emotion," in a playful ragtime-inspired piece from *Children's Corner*.

ANSWER: (Achille-)Claude **Debussy**

[10h] Beethoven had used the same voicing as the Tristan chord in this mid-period piece, sometimes nicknamed for a horn-call-like theme, that begins with a harmonically innovative third-inversion B-flat dominant 11 chord.

ANSWER: Beethoven's **Piano Sonata** No. **18** in E-flat major, Op. 31, No. 3 [or "The **Hunt**"]

<JM - Arts: Classical Music>

3. **This author compared self-destructive love to the way a person with dropsy thirsts for the same water that is killing them in a poem titled "That Quick." Scholars identify seven "voices" used in this poet's magnum opus, including the "Hiatus" voice where he says his true intentions are inexpressible. Part of that work by this author includes the line "The Worker is hidden in the workshop: go you and in the workshop see Him plain," before he discusses Moses and the Pharaoh. The first work in a collection by this poet includes the lines "Anyone apart from someone he loves / understands what I say. / Anyone pulled from a source / longs to go back." This poet used the continuity of the (\*) sea and its foam to end the story of the blind men and the elephant. A 2017 *New Yorker* article lamenting the "Erasure of Islam from the Poetry of" this author discusses Coleman Barks's translations, which rendered the opening of a work as "Listen to the story told by the reed / of being separated." For 10 points, name this student of Shams of Tabriz who wrote the *Masnawi*, or "Spiritual Couplets."**

ANSWER: Jalāl al-Dīn Muḥammad **Rūmī** [or Jalāl al-Dīn Muḥammad **Balkhī**; prompt on *Mevlânâ*, *Mawlânâ*, *Mevlevî*, or *Mawlawî*]

<JM - Literature: World>

In 2021, the first results from an experiment at Fermilab named for this quantity established a deviation of 4.2 sigma from theory. For 10 points each:

[10m] Name this quantity that measures deviations from the Dirac equation, which predicts a value of 2 for all leptons. This quantity for the electron is the most accurately corroborated prediction in all of physics.

ANSWER: muon **anomalous magnetic** (dipole) **moment** [or muon **g-2** ("gee minus two"); accept muon **anomalous** (magnetic) **dipole moment**; reject "magnetic moment" and "dipole moment"]

[10e] Theoretical computation of the electron anomalous magnetic moment is done by summing up a bunch of these diagrams to progressively higher loop orders. These diagrams graphically represent scattering amplitudes in QED.

ANSWER: **Feynman** diagrams

[10h] A 2021 paper by Borsanyi et al. better predicts the muon anomalous magnetic moment via *ab initio* calculation of this process for hadrons. This phenomenon shifts the fine structure constant by a factor of one over quantity "one minus Pi of p-squared minus Pi of zero."

ANSWER: **vacuum polarization**

<DE - Science: Physics>

4. **The daughter-in-law of a ruler of this empire wrote an epic poem describing how it overthrew the violent tyrant Maḥmūd Damghān Shāh by conquering the Ma'bar Sultanate. Fernão Nunes (“FUR-now NOO-ness”) spent three years in this empire while trying to circumvent the monopoly of Arab horse traders. The privateer Timoji offered a tribute to this empire before conquering Goa and becoming the latter’s first colonial “aguazil.” The “Elephants in Eight Directions” were the top poets patronized by this Empire. Portuguese musketeers aided this empire’s defeat of the (\*) Bijapur Sultanate at the Battle of Raichur. The brothers Harihara and Bukka founded the Sangama dynasty that first ruled this empire. This empire’s de-facto ruler Aliya Rama Raya was killed at the Battle of Talikota. Deccan sultanates often vied for power with, for 10 points, what Hindu South Indian empire centered in a namesake capital city near Hampi, Karnataka?**  
ANSWER: **Vijayanagara** Empire [accept **Bisnagar** Empire or **Karnata** Kingdom]  
<VA - History: World>

After killing Musa the Outlaw, whose chest contained three hearts and a snake, this rider of the piebald steed Šarac (“shah-RAHTS”) was captured and nearly killed by Musa’s even stronger brother, Djemo the Mountaineer. For 10 points each:

[10h] Name this Balkan hero with a “baby lamb”-sized mustache who sarcastically plowed Ottoman roads in one legend. In real life, this lord of Prilep succeeded his father Vukašin Mrnjavčević (“vu-KAH-shin mern-YAHV-chuh-vits”) in 1371 and built a namesake monastery near Skopje (“SCOP-yuh”).

ANSWER: Kraljević **Marko** [accept first name variants like “Prince **Marko**”]

[10e] Marko ruled this contemporary country, which reveres Miloš Obilić (“mi-LOHSH OH-bi-lits”) for assassinating Murad I at the Battle of Kosovo. It was later led by Slobodan Milošević (“slo-BOH-duhn mih-LOH-shuh-vitsch”).

ANSWER: (Kingdom/Republic of) **Serbia** [or *Republia* **Srbija**]

[10m] Despite living past 300 in folk tales, Marko died in 1395 while fighting this principality’s ruler Mircea the Elder, whose grandson legendarily placed a golden cup in a town square without it being stolen.

ANSWER: (Principality/Voivodeship of) **Wallachia** [prompt on **Romania**; prompt on its historical divisions of **Muntenia** or **Oltenia**] (Mircea’s grandson was Vlad the Impaler.)

<JG - History: European (Mythology)>

5. **Osuna et. al found that this process was sustained by AcrIIA1 (“A-C-R-2-A-1”) in *Listeria* by triggering Cas9 degradation. High arbitrium concentration prevents the termination of this process by acting similarly to a quorum sensing autoinducer within *Bacillus* colonies. “Domestication” following this process often leads to the formation of gene transfer agents. Formation of a Holliday junction between the *gal* and *bio* operons allows one organism to begin this process when (\*) *cI* (“C one”) concentration is high and *cro* concentration is low. *C. diphtheria* releases toxins due to the transcription of “morons” during this process. Tryptone, yeast extract, and salt make up a medium named for this process that is sometimes called Luria broth. Stressors like UV radiation can trigger a shift away from this process by inducing the release of a prophage from a host’s DNA. For 10 points, name this reproductive cycle in which a virus incorporates its genetic material into a host’s genome that is contrasted with the lytic cycle.**  
ANSWER: **lysogeny** [or **lysogenic** cycle; accept **prophage** formation/maintenance until read; prompt on viral **infection** or bacteriophage **infection**; prompt on viral **replication** or viral **reproduction** until “reproductive”]  
<SS - Science: Biology>

This thinker coined the term “heterophenomenology” to describe the investigation of mental states through third-person observation of first-person experiential reports as empirical data. For 10 points each:

[10e] Name this philosopher who described the self as a “narrative center of gravity.” He also wrote a number of works on evolution and religion, as well as the book *Consciousness Explained*.

ANSWER: Daniel (Clement) **Dennett** (III)

[10h] In contrast with Dennett, this Danish philosopher argued for a “minimal self” distinguished from the “narrative self,” popularizing the phrase “pre-reflective self-consciousness” while articulating that idea in books like *Subjectivity and Selfhood*.

ANSWER: Dan **Zahavi**

[10m] This earlier thinker argued in *The Visible and the Invisible* that raw perception occurs “anonymously,” on a level prior to the individuation of the self, rather than constituting what Zahavi later calls a “minimal self.”

ANSWER: Maurice (Jean Jacques) **Merleau-Ponty** (“murr-LOW pawn-TEE”)

<JM - Thought: Philosophy>

6. **Joan DeJean’s 2022 book *Mutinous Women* describes how dozens of falsely convicted women were sent to this colony by a corrupt warden and misogynist street gangs. The ship *Pélican* arrived at this colony with many marriage-seeking “Casket Girls,” who then launched the “Petticoat Revolution” over poor living conditions. The slave Samba supposedly led a revolt in this colony during a war in which a people co-led by the “Great Sun” and the “Tattooed Serpent” destroyed Fort Rosalie. After a “Great Fire” on Good Friday, 1788, the (\*) Prebytère (“prez-bih-TAYR”) was constructed in this colony’s capital. Karl Friedrich von Arensburg led settlers to the German Coast of this colony, once governed by Bernardo de Gálvez. This colony, which fought the native Natchez people, is most closely associated with the practice of *plaçage* (“plah-SAHJ”), in which free black women became semi-legal concubines and helped create its Creole elite. For 10 points, name this colony acquired by the U.S. in a namesake “purchase.”**

ANSWER: **Louisiana** [accept French **Louisiana** or Spanish **Louisiana**; accept *La Louisiane* or *la Luisiana*; prompt on New France or Acadia; anti-prompt on New Orleans]

<VA - History: American>

Answer the following about the synthesis of catenanes, compounds containing interlocking macrocycles, for 10 points each.

[10h] Catenanes are synthesized using either the random-ring-closing-based “statistical approach” or by exploiting this effect. In this effect, the presence of a metal ion alters reactions within its coordination sphere.

ANSWER: **template** effect/synthesis/mechanism

[10m] “Active” template synthesis, in which the metal ion both exhibits the template effect and catalyzes the bond-forming reaction, most commonly uses this reaction. A share of the 2022 Chemistry Nobel was given for the development of cyclo-octyne-catalyzed variants of this reaction.

ANSWER: **Huisgen** cycloaddition [or **azide-alkyne** (Huisgen) cycloaddition; accept Cu**AAC**]

[10e] Stoddart et al. developed an alternative to template synthesis of catenanes that utilizes the “stacking” between these bonds. Double bonds usually consist of a sigma bond and one of these bonds between two p-orbitals.

ANSWER: **pi** bonds [accept **pi** stacking or **pi**-pi stacking]

<AF - Science: Chemistry>

7. **A hunchbacked colonial author who wrote in this language implicitly criticized his literary rival's involvement in their homeland's politics with the play *The Privileged Beasts*. That author wrote a drama in this language that follows the nobleman Mendo, who loses the Duke of Urbino's patronage as his mendacious and slanderous tendencies spurn the affections of Ana and Lucrecia. The arch-enemy of that author of *The (\*) Walls Have Ears* and its predecessor *The Suspicious Truth* used this language to write a play in which a character uses a crossbow to stop the Commander from committing sexual assault and is pardoned after townsfolk assert that the title village "did it." That author used this language for a play in which Diana rejects aristocratic suitors to marry the servant Teodoro in a variant of an Aesop fable, *The Dog in the Manger*. For 10 points, give this language used by "Golden Age" playwrights like Juan Ruiz de Alarcón and his rival Félix Lope de Vega.**  
 ANSWER: **Spanish** [or **Español**] (The play named for a village is *Fuenteovejuna*.)  
 <JM - Literature: European>

The Swedish painter Anders Zorn, a friend of this person, depicted her dramatically announcing a fireworks display in an 1894 portrait of her "*in Venice*." For 10 points each:

[10m] Name this socialite and philanthropist whose collection is preserved in a namesake museum housed in her Venetian-style mansion. A close associate painted her in a black dress for a portrait reminiscent of another work in which he depicted Virginie Gautreau.

ANSWER: Isabella Stewart **Gardner**

[10e] Gardner was good friends with this American painter of *Madame X*, who frequently painted her. His masterwork *El Jaleo*, depicting flamenco guitarists and dancers, is housed in the Gardner Museum.

ANSWER: John Singer **Sargent**

[10h] Gardner was also a friend of this Japanese art critic, an advocate of traditional forms during the Meiji period. Some scholars contend that his *Book of Tea* influenced Frank Lloyd Wright's design for Unity Temple.

ANSWER: **Okakura** Kakuzō [or **Okakura** Tenshin; accept both names in either order]

<JM - Arts: Painting and Sculpture>

8. **In most dialects of this language, vowels before the letters "G-I" are phonetically shortened and the "g" is oddly pronounced as a palatal approximant. In 2019, non-binary gender identities were legitimated in this language with the introduction of the suffix "-bur." This language most prominently exhibits the phenomenon of certain verbs requiring specific non-nominative declensions known as "quirky subjects." This language is mutually intelligible with (\*) Faroese only in written form which, like this language, preserves the dental fricative characters "eth" and "thorn" in its alphabet. Basque whalers developed a pidgin to communicate with speakers of this language in the 17th century. This language uses only patro- or matronymics ending in "-son" or "-dóttir" rather than family names. For 10 points, name this linguistically conservative Germanic tongue spoken in a North Atlantic island country by the descendants of Norse settlers.**  
 ANSWER: **Icelandic** [or **íslenska**]  
 <JM - Hard Social Science: Linguistics>

This text is said to contain resolutions to every possible matter of religious interpretation, including the correct penal codes for offenses as granular as individual bruises. For 10 points each:

[10h] Name this lost text that Shia Muslims claim Muhammad dictated to Ali along with another text called *al-Jaima*. This text is thought to contain the Scrolls of Abraham and many esoteric teachings.

ANSWER: al-Jafr

[10e] Twelver Shias believe that *al-Jafr* is currently possessed by the Mahdi, the last of these religious leaders, who will reveal it upon his return. This word is commonly used for clerics who lead prayer in mosques.

ANSWER: imams [or ayima]

[10m] Twelver tradition also holds that the Mahdi will reveal the lost book of this person, revealed to her by Gabriel. Sunnis contend she died of grief, but Shia tradition maintains she was killed in a raid ordered by Abu Bakr.

ANSWER: Fāṭima bint Muḥammad [or Fāṭima al-Zahrā]

<JM - Religion>

9. **The Kugo-Ojima formula can be used to analytically define a consequence of this property in the infrared limit. This property generates a pressure denoted capital B in the bag model. Long-range interactions between particles with this property are explained with electric fluxons in the dual superconductor model. To avoid violation of the Pauli exclusion principle in  $\Delta^{++}$  (“delta plus plus”) particles, this property was introduced to make the overall wavefunction of baryons (\*) antisymmetric. This property is antiscreened due to its carrier also having a nonzero value of this property, thereby causing the interaction energy between particles with this property to *increase* with distance. All naturally occurring free particles lack this property, thereby making particles with this property confined. Uniquely among gauge bosons, gluons have non-zero values of this property in addition to mediating its effects between quarks. For 10 points, name this property exclusive to strongly interacting particles, which comes in red, blue, and green forms.**

ANSWER: color charge [accept color force]

<DE - Science: Physics>

Answer some questions about the history of Kuwait that do not involve the First Gulf War, for 10 points each:

[10m] Kuwait avoided conquest by ibn Sa‘ūd by repelling this hardline Wahhābist Bedouin militia at the Battle of Jahra. Ibn Sa‘ūd (“sah-OOD”) suppressed them himself at the 1929 Battle of Sabilla after they helped him unify Saudi Arabia.

ANSWER: al-Ikhwan min ‘Aṭā‘ Allāh [accept any translation that involves the terms brother(hood) or brethren]

[10e] In 1974, Palestinian militants held this country’s Kuwaiti embassy hostage in support of an allied “Red Army” from it. An unrelated group from this country killed 14 people by releasing sarin gas into its subway in 1995.

ANSWER: Japan [accept Nippon-koku or Nihon-koku]

[10h] Until its 1982 crash, this unofficial stock market in a garage gave Kuwait the third highest capitalization rate in the world. The revelation that \$94 billion of post-dated checks here were worthless wiped out much of the Middle East’s per capita wealth gains from the oil boom.

ANSWER: Sūq al-Manakh [accept the Camel Market]

<JG - History: World>

10. **In the main section of a song by this composer, the melody proceeds over alternating D-flat-major-7 and D-dominant-7-sharp-11 chords before briefly modulating with a two-five to E-major-7. After a years-long lull in his career, Joe Henderson returned to form with a 1991 album of this composer's work whose title track is a solo saxophone version of that song. That song's lyrics mention "twelve-o'-clock-tails" and lament "life is lonely," and may be a coded reflection on this composer's life as an openly gay man. Another song written by this composer of "U.M.M.G." and the just-described (\*) "Lush Life" distinctively goes from the one chord to the two-seven-flat-five as the melody drops from E to A-flat, and replaced "Sepia Panorama" to become his collaborator's signature song, featuring lyrics about taking public transit to Harlem. For 10 points, name this composer who wrote "Take the A Train" and many other tunes for Duke Ellington's band.**

ANSWER: (William Thomas) "Billy" **Strayhorn**

<JM - Arts: Jazz>

This man grows cynical when he sees his sister-in-law's children melt raspberries over a candle and squirt milk at each other, which he analogizes to spoiled philosophers who spend their time theorizing. For 10 points each:

[10h] Name this man who has a spiritual awakening when his wife and son survive a lightning storm in a forest. In the novel's final paragraph, this man resolves that, though his life remains as before, "it has the positive meaning of goodness, which I have the power to put into it."

ANSWER: Konstantin Dmitrievich **Levin** [or **Konstantin** Levin; or **Kostya**]

[10e] Because of his spirituality and politics, Levin is often viewed as a stand-in for the author of this novel. This novel's protagonist throws herself in front of a train after a feud with Vronsky.

ANSWER: **Anna Karenina** (by Leo Tolstoy)

[10m] Among the biggest authorial insertions is a scene in which Levin, like Tolstoy himself, performs this action by writing the first letters of a series of words on a chalk table.

ANSWER: **proposing** marriage [accept equivalents like **asking** someone to **marry** him; accept getting **engaged**; prompt on having a **conversation** or similar answers]

<TM - Literature: European>

11. **Despite an orange, curry-like appearance, a stew from this city is actually a savory mustard and pickle flavored dish thickened with hard-boiled egg yolks called "Diabo." This city likely got its name from an ancient complex dedicated to an indigenous sea goddess, the A-Ma temple. Among this city's other historical attractions is the orphaned façade of what once was a Jesuit church, the Ruins of St. Paul's. Another popular item from the cuisine of this Asian city is "African Chicken," based on a piri-piri pepper sauce, though its most famous dish is a molasses and soy sauce flavored (\*) ground meat dish called "Minchi." The unique legal status of this city, the world's most densely populated international-level polity, led it to become the largest gambling center globally with an industry seven times larger than Las Vegas's. For 10 points, name this special administrative region of China, a former Portuguese colonial port city across the Pearl River Delta from Hong Kong.**

ANSWER: **Macau** [or **Oumen**; accept elongated official names]

<JM - Geography>

This concept is introduced through the literary examples of Witold Gombrowicz's ("VEE-told gom-BRAW-vitsch's") *Ferdydurke* and Proust's Albertine in contrast to "Blooms," named in reference to Joyce, the archetype of the alienated mass-shooter. For 10 points each:

[10h] Give this archetype of life under patriarchal modern capitalism as a "living commodity" who reinforces it by participation, a concept sometimes critiqued for its misogynistic presentation by the Tiqqun collective.

ANSWER: **young-girl** [or **Jeune-Fille**; accept *Preliminary Materials for a Theory of the Young-Girl* and *Premiers matériaux pour une théorie de la Jeune-Fille*]

[10e] Tiqqun developed ideas like the young-girl using this Situationist term popularized by Guy Debord ("GEE duh-BOHR") in a book titled for "*The Society of*" this concept.

ANSWER: **spectacle** [accept *The Society of the Spectacle* or *La société du spectacle* ("spek-TAHK")]

[10m] Debord and Tiqqun used this critical theorist's notion of "reification," where arbitrary and created social phenomena become lawlike social facts, introduced in his *History and Class Consciousness*.

ANSWER: György **Lukács** ("GEORGE LU-kahtsch") [or György (Bernát) **Löwinger**; accept first and last names in either order]

<JM - Thought: Soft Social Science>

- HALFTIME -

12. **After performing this action, a character muses on "love that never attempted to clutch its object ... like the love which mathematicians bear their symbols, or poets their phrases." This action is said to be able to reduce "objects of universal veneration," such as mother and child, to shadows "without irreverence." A character nearly weeps at "the light of a butterfly's wing lying upon the arches of a cathedral" after recalling another character's declaration that women can neither (\*) write nor perform this action. A young woman with a "puckered-up face" and "little Chinese eyes" proclaims, "I have had my vision" after performing this action in the company of the poet Augustus Carmichael. As she reads a fairy tale to her son James, Mrs. Ramsay realizes that she needs to keep still in order to let a family friend perform this action. Virginia Woolf's *To the Lighthouse* ends with Lily Briscoe performing—for 10 points—what action before "laying down her brush?"**

ANSWER: **painting** [prompt on creating **art**]

<WJ - Literature: British>

On account of its ubiquity in the roofs of suburban and rural houses in each country, this material has become an unusual symbol of cultural pride for Australians and New Zealanders. For 10 points each:

[10m] Name this cheap, ridged building material which has seen widespread adoption after World War II due to its light weight and anti-corrosive properties. Despite its name, it is usually made with steel in the present day.

ANSWER: **corrugated** (galvanized) **iron** [or **CGI**; or **wriggly tin**; or **paling**; or **corrugated sheet metal**; or **corrugated** wrought **iron**]

[10e] Australian pride over corrugated iron can be traced in part to its use in these structures, massive examples of which were built by the state to exclude dingoes, emus, and/or rabbits from agricultural regions of the country.

ANSWER: pest-exclusion **fences** [accept rabbit-proof **fences**, emu **fence**, dingo or dog **fence**, or the State Vermin **Fence**; prompt on **barriers**; reject "walls"]

[10h] This museum in Hobart, featuring an oxidized iron façade and accessible only by boat, was founded by eccentric professional gambler David Walsh and hosts the yearly "Dark Mofo" music festival.

ANSWER: **MONA** [or **M**useum of **O**ld and **N**ew **A**rt]

<JM - Geography>



13. In “To be is to be a Value of a Variable,” George Boolos argues that neither plural logic nor *this* formal system require ontological commitment to collections as entities. Stewart Shapiro’s *Foundations without Foundationalism* is “A Case for” this system. Another thinker argued that this system’s implicit commitment to “attributes” is problematic in a similar way to an ontology of propositions. Since, furthermore, either CH and AC or their negations must be theorems of this system under full semantics even with an empty vocabulary, (\*) W.V.O. Quine called this system “set theory in sheep’s clothing” in his *Philosophy of Logic*. Crispin Wright re-discovered that, in this system, the Peano axioms are derivable from Hume’s Principle, which is Frege’s Theorem. For 10 points, give this system that extends first-order logic by allowing quantifiers to range over both relations and objects.  
ANSWER: **second-order** logic (CH is the Continuum Hypothesis, and AC is the Axiom of Choice.)  
<JM - Thought: Philosophy>

Wnt (“wint”) and Fgf signals are responsible for specification of these cells. For 10 points each:

[10m] Name these vertebrate embryonic cells that undergo an epithelial-to-mesenchymal transition at the roof plate followed by migration. These cells give rise to a diverse lineage including Schwann cells and melanocytes.

ANSWER: **neural crest** cells [prompt on **neural** cells; do not accept or prompt on “neurons”]

[10h] Members of this protein family are involved in the induction of the neural crest. These proteins induce SLUG expression and inhibit sonic hedgehog during processes like embryogenesis and limb development.

ANSWER: **BMPs** [or **bone morphogenic proteins**]

[10e] Uniquely among members of the BMP family, BMP1 induces bone development by cleaving the precursor to this main structural protein of the extracellular matrix.

ANSWER: **collagen** [accept **Type N collagen** for all N]

<VA - Science: Biology>

14. In this city in 1839, the botanist Johannes Hegetschweiler (“HAY-getsch-VYE-luh”) was shot in the head while trying to mediate with insurgent conservative peasants led by pastor and Orientalist scholar Bernhard Hirzel. That “putsch” in this city began after its liberal government appointed the controversial theologian David Strauss to a professorship. During the early 19th century, this city began detonating a giant snowman effigy called the Böögg (“BOOG”) while celebrating the Sechseläuten (“ZEKS-zell-OY-ten”) holiday, which also features a parade of the (\*) Zünfte (“TSUNFT-uh”), this city’s guilds. The *Consensus Tigurinus* was reached in this city. Catholic territories declared war on this city after it launched a food embargo over Catholics’ refusal to support the Three Leagues in the Musso War. The *Wickiana* (“VICK-ee-ah-nuh”) preserve the history of this city under Heinrich Bullinger, who succeeded a leader who died in the Second War of Kappel and disputed Luther at the Marburg Colloquy. For 10 points, name this Swiss city once led as a Protestant theocracy by Huldrych Zwingli.  
ANSWER: **Zürich** [or **Zurigo**; or **Turigt**]  
<JM - History: European>

For his first solo exhibition, this artist locked the gallery doors, covered his head in honey and gold leaf, and performed the title activity in the piece *How to Explain Pictures to a Dead Hare*. For 10 points each:

[10m] Name this Fluxus performance artist who covered himself in felt and locked himself in a room with a coyote for three days in *I Like America and America Likes Me*.

ANSWER: Joseph (Heinrich) **Beuys** (“BOICE”)

[10h] This Fluxus artist created performance pieces from simple “event scores” including *Make a Salad*, in which she does so and serves it to the audience, and *The Identical Lunch*, in which she ate a tuna sandwich every day.

ANSWER: Alison **Knowles**

[10e] Like Knowles, musically inclined Fluxus artists such as George Brecht and La Monte Young were students of this avant-garde American composer of pieces like *Imaginary Landscapes* and the silent performance 4’33”.

ANSWER: John (Milton) **Cage** (Jr.)

<JM - Arts: Misc>

15. A *jātaka* tale about “King *this-object-face*” attests a prognostication practice using their “karma” form referred to by a Pāli phrase meaning “questions put to *these objects*.” A Gampopa text named for these objects outlines meditative practices involving them depicted in Tibetan iconography. At the start of a Chan sutra named for another object, an illiterate monk says that this object “has no stand” and asks “where could dust arise?” in response to verses about the mind and this object that said “at all times we must strive to polish it.” That story about Patriarch Hongren’s (\*) poetry contest and his successor Huineng (“HWAY-nung”) comes at the start of the *Platform Sutra*. In Edo-period Japan, “magic” examples of these things called *makyoh* were used by “Hidden Christians” to identify each other. Jewels behave like these objects recursively in Indra’s Net. For 10 points, name these reflective objects which are a common metaphor in Buddhist scriptures.  
ANSWER: **mirror** [or *dārpaṇa*; accept *maykoh* before mention; accept **reflecting/reflective** surfaces, etc.; prompt on *mind* or *vijñāna* or *manas* or *citta* (“CHIT-tuh”) before the word “mind” is read by asking “which is allegorized as the bodhi tree and what other object?”] (The Gampopa text is *A Mirror Illuminating the Oral Teachings*, or *snyan brgyud gsal ba’i me long*, sometimes translated as *Clear Mirror of the Whispered Lineage*.)  
<JM - Religion>

One of these phenomena that “formed out of the human and material dregs of other towns” accompanies the arrival of a banana company according to a note that opens a certain novella. For 10 points each:

[10m] Name these weather phenomena that title the English translation of that novella about a Colonel’s efforts to bury a reclusive doctor who came to town with a letter of recommendation from Colonel Aureliano.

ANSWER: **leaf storms** [or *la hojarasca*; prompt on partial answers; prompt on **whirlwinds** or similar answers]

[10e] Per the autobiography *Living to Tell the Tale*, a banana plantation sign inspired the name of this town where Gabriel Garcia Marquez set *Leaf Storm* and *One Hundred Years of Solitude*.

ANSWER: **Macondo**

[10h] Like the contemporaneous “McOndo” movement, this mid-90s Mexican literary movement opposed “banana literature.” Ignacio Padilla and Jorge Volpi spearheaded this movement, named for breaking away from boilerplate magical realism.

ANSWER: **Crack** movement [or **Crack** generation; or *la generacion del “crack”*]

<CS - Literature: World>

16. Wood and Churchwell classified “ultracompact” regions with this property into types like “core-halo” and “multiple peaked.” The ratio of a partition function to a number density appears three times in one form of an equation used to calculate the extent of this property that essentially restates the definition of equilibrium chemical potential. Many star-formation sites in regions containing material with this property are shrouded by (\*) Bok globules, which mostly lack this property. Collisions between jets of material with this property and clouds of gas and dust create Herbig-Haro objects. If the Debye length is large, the likelihood of atoms of a gas in thermal equilibrium gaining this property is given by the Saha equation. H II regions are composed of material with this property. Early on in the formation of the universe, particles with this property recombined to produce neutral hydrogen. For 10 points, a plasma is a gas with what property of having a non-zero charge?  
ANSWER: **ionized** [or word forms; accept being **charged** or word forms; prompt on being a **plasma**]  
<DE - Science: Astronomy>

Leo Tolstoy's essay on the power of nonviolent resistance and its relevance to anarchism, "Non-Activity," is named for and inspired by this non-Western concept. For 10 points each:

[10m] Original language term required. Name this concept central to Daoist thought, which refers to exertion-less, non-purposive, spontaneous, but ironically efficacious activity.

ANSWER: wúwéi ("OOH-way")

[10e] This text illustrates wúwéi with the story of Ding the butcher, whose knife never goes dull because his swift cuts follow the animals' natural joints. In another story from this text, the speaker is unsure if he or a butterfly is dreaming of being the other.

ANSWER: Zhuangzi ("ZHONG-tsub") [accept articulations of old romanizations like Chuang-Tzu]

[10h] This Daoist philosopher, the first editor of the Zhuangzi, argued contra Wang Bi that, since non-being definitionally doesn't exist, all change must be variation in relationships among eternally existent parts of being.

ANSWER: Guō Xiàng [accept articulations of old romanizations like Kuo Hsiang]

<JM - Thought: Other Philosophy>

17. **The front of *desco da parto* or birth tray attributed to this artist depicts a man blowing a horn with a banner at the nativity. This artist painted St. Anthony with a red book furthest to the right in a triptych featuring the Shahada written backwards in Mary's halo. A fresco by this artist shows an angel with a black sword over two sobbing figures. This painter used a nail and strings at the foot of the cross for the vanishing point perspective of a (\*)** Santa Maria Novella fresco depicting the title figures in a barrel vault. This artist's teacher had a diminutive nickname to contrast with his own "clumsy" or "messy" nickname. A fresco by this student of Masolino depicts St. Peter taking a coin from a fish's mouth to give to a tax collector. For 10 points, name this Italian master whose Brancacci Chapel works include *Expulsion from the Garden of Eden* and *The Tribute Money*.

ANSWER: Masaccio [or Tommaso di Ser Giovanni di Simone] (The second sentence is about his *San Giovenale Triptych*, and the barrel vault fresco is his *Holy Trinity*.)

<JM - Arts: Painting and Sculpture>

Unlike other progressives, this theorist believed that a steep inheritance tax would reduce wealth inequality more effectively than a personal income tax. For 10 points each:

[10h] Name this theorist, whose 1909 work *The Promise of American Life* synthesized Hamiltonian and Jeffersonian thought to advocate for a strong national government and heavily influenced Theodore Roosevelt's 1912 platform.

ANSWER: Herbert David Croly

[10m] Roosevelt took his advocacy of this two-word outlook in the 1912 election directly from Croly. This platform supplemented the Square Deal with an empowered federal government but lost out to Wilson's "New Freedom."

ANSWER: "The New Nationalism"

[10e] Croly wanted to replace this law with an incorporation act allowing for quick nationalization of large companies. This 1890 act governs unfair competition and was followed by a similar law named for Clayton.

ANSWER: Sherman Antitrust Act

<DE - History: American>

18. **This phrase ends a speech that describes memories as the “concomitant, if not the fundament, of our lives,” which causes “goose flesh” to appear on a character’s “veiny arms.” The protagonist first hears this phrase being repeated by “a deep kind of Edward R. Murrow gloomy voice,” after which he imagines women on a beach saying this phrase while throwing leis at him. In a dream, the protagonist hears this phrase as he stands on a ship with a Black boy obsessed with (\*) Paul Gauguin’s (“go-GAHN’s”) Tahitian paintings. This phrase first appears on a phonograph record played by the former basketball star Ron, whose sister breaks up with the protagonist after he pushes her to get a diaphragm. A collection titled for this phrase includes the stories “Eli, the Fanatic” and “Defender of the Faith,” as well as a novella in which the upper-class Brenda Patimkin dates the working-class Newark teen Neil. For 10 points, name this two-word phrase that titles a 1959 short story collection by Philip Roth.**

ANSWER: “**Goodbye, Columbus**”

<TM - Literature: American>

Answer the following about MUMPS, the database language aptly used to store most electronic health records, for 10 points each.

[10h] In the MUMPS language, arrays are stored as a variant of these structures, with subscripted values at deeper levels. These structures, whose internal nodes must be at least half full, maintain their data in sorted order and may have fanouts of 100 or more.

ANSWER: **B-trees** [accept **B\*-trees**, prompt on **trees**]

[10e] MUMPS was arguably the first member of the class of databases named for not using the system of this database language, the most common query language for relational databases.

ANSWER: **SQL** [or **Structured Query Language**]

[10m] In MUMPS, use of this symbol distinguishes whether variables are written to RAM or persistent memory. Many languages, such as Python and C++, use this symbol to denote the bitwise XOR operator.

ANSWER: **caret** (i.e., “^”)

<DE - Science: Computer Science>

19. **Labor unions in Vancouver launched a 1983 “Coalition” or “Operation” named for this word to oppose the social program-slashing provincial Social Credit government in the “[this word] Crisis.” Adlai Stevenson III founded a third party of this name to run for Illinois governor in 1986 after LaRouchites (“lah-ROOSH-ites”) won several primaries. The French statesman and Nobel Peace Prize winner Léon Bourgeois (“lee-AWE burzh-WAH”) called his ideology “[this word]-ism.” A newspaper named for this word was published by the IWW, for whom Ralph Chaplin to write a (\*) song with the refrain “for the Union makes us strong,” entitled “[this word] Forever.” A “Fighting” version of a group with this name emerged after a 1981 martial law targeted it. That group of this name was galvanized by a woman being fired from her crane operator job and was legitimized at the Round Table Talks. For 10 points, give this word that names a political movement founded by an electrician at the Lenin Shipyard in Gdańsk, Lech Wałęsa (“LEK vah-WEN-suh”).**

ANSWER: **solidarity** [or **Solidarność**; accept **Solidarity** Crisis, **Solidarity** Coalition, Illinois **Solidarity** Party, “**Solidarity** Forever,” and **solidarism**]

<JM - History: Ancient/Other>

This economist lends his name to equations relating the log of wage to years of education, years of experience, and experience squared. For 10 points each:

[10m] Name this “father of modern labor economics” who co-developed human capital theory with Gary Becker and Theodore Schultz.

ANSWER: Jacob **Mincer** [accept **Mincerian** equations; accept **Mincer** earnings function]

[10e] The coefficient on education in a Mincerian wage equation represents this kind of quantity “to education.” Analogously, firms can have an increasing, decreasing, or constant form of this kind of quantity “to scale” when increasing inputs to their production function.

ANSWER: rate of **returns** [accept **returns** to education; accept **returns** to scale]

[10h] This Harvard economist is the alphabetically earlier co-author of pioneering papers on the effect of the pill on women’s wages, and on technology-skill complementarity, both written with her husband Lawrence Katz.

ANSWER: Claudia **Goldin**

<CS - Hard Social Science: Economics>

20. **This opera's first aria is based around the four-bar cello ostinato (read slowly) rising G, A flat, down to rising E flat, F, G, down to low G up to C, turning around with C, B, C. Another aria of this opera features the ostinato of low octave notes (read slowly) chromatically descending G to D, ascending B flat, C, D, low G. Early scores of this opera indicated two dances for guitar which were either never composed or were improvised by the *continuo* guitarist. The composer’s teacher John (\*) Blow is widely agreed to have inspired this work’s form and style with his opera *Venus and Adonis*. This three-act opera includes choral pieces like “When monarchs unite” and “To the hills and the vales.” This opera’s protagonist sings “remember me, but ah, forget my fate” to Belinda before her suicide in the aria “When I am Laid in Earth,” also called her “Lament.”** For 10 points, name this opera by Henry Purcell.

ANSWER: ***Dido and Aeneas*** (Z. 626)

<JM - Arts: Classical Music>

This poem begins with an epigraph from William Shakespeare’s play *Measure for Measure* that declares, “Thou hast nor youth nor age.” For 10 points each:

[10m] Name this poem in the form of a dramatic monologue by an “old man.” It describes the Second Coming of “Christ the Tiger” and was originally meant to serve as a preface to its author’s later poem “The Waste Land.”

ANSWER: “**Gerontion**”

[10e] Both “Gerontion” and “The Waste Land” are by this American-born British poet.

ANSWER: T. S. **Eliot** [or Thomas Stearns **Eliot**]

[10h] “Gerontion” opens and closes by prominently featuring this adjective, first to describe the “month” that the “old man” is in, and last to describe a “brain” and a “season” that “tenants of the house” have “thoughts” of.

ANSWER: **dry** [accept “**dry** month,” “**dry** brain,” or “**dry** season”]

<WJ - Literature: British>

21. **The dominant source of middle-UV nightglow in the atmospheres of both Earth and Venus is the formation of this molecule from elemental constituents. Models for atmospheric generation of this compound typically assume that CG events produce ten times the amount of this compound as IC events. In fuel-rich conditions, an “extended” reaction in which this molecule is formed from a hydroxyl radical is added to the Zel’dovich mechanism. The formation of this compound by photodissociation occurs in the first step of the mechanism behind the (\*) Leighton relationship, which links pollution from this molecule and a heavier one to the concentration of tropospheric ozone. This compound is produced via lightning-induced combustion during thunderstorms. This molecule reacts with the hydroperoxyl radical to form a noxious brown gas which reacts with water to form one component of acid rain. This is the lighter of the two NO<sub>x</sub> (“nox”) gases. For 10 points, name this diatomic radical with formula NO (“N-O”).**

ANSWER: **nitric oxide** [or **NO** until mentioned; accept **nitrogen oxide** or **nitrogen monoxide**; reject “nitrous oxide” or “nitrogen dioxide”]

<DE - Science: Chemistry>

Two professors at Harvard Law School rescheduled this activist's last exams to prevent the 1921 class from having a mixed-race, Puerto Rican valedictorian. For 10 points each:

[10h] Name this early 20th-century leader in the Puerto Rican Independence Movement who exposed the racist letters of Dr. Cornelius Rhoads. With colleagues like Blanca Canales, he coordinated the 1950 nationalist revolts.

ANSWER: Pedro Albizu **Campos** [or Pedro **Albizu** Campos]

[10m] The earlier Puerto Rican independence leader Ramón Betances spent his French exile backing this other revolutionary. This editor of *Patria* died at Dos Rios while fighting with other *mambises* under the overall command of Maximo Gomez and Antonio Maceo.

ANSWER: José **Martí** Pérez

[10e] Even earlier, Agueybana II led these indigenous inhabitants of Puerto Rico, or “Borikén” as they called it, against Spanish colonists and conquistadors.

ANSWER: **Taino** [prompt on Arawaks]

<JG - History: Ancient/Other>

22. **A philosopher from this country used a *reductio* argument that would imply the nonexistence of intercultural communication to argue that there must be concepts relevant across all cultures. A thinker from this contemporary country argued that, because the mind is not divisible, it cannot contain the faculty of sensing in his Wittenberg thesis *On the Passivity of the Human Mind*. A student of Gilbert Ryle from this country wrote *Cultural Universals and Particulars* and, in a debate with a countryman, distinguished the clear-cut biological notion of being human from the gradated notion of (\*) “personhood.” A philosopher raised in this non-European country writes “The Ethicist” for the *New York Times*, described his upbringing there in the book *In My Father’s House*, and used the phrase “universality plus difference” to define the title concept of a book subtitled “Ethics in a World of Strangers.” For 10 points, name this home country of Anton Wilhelm Amo, Kwasi Wiredu, and the author of *Cosmopolitanism*, Kwame Anthony Appiah.**

ANSWER: Republic of **Ghana** [prompt on the Gold Coast]

<TM - Thought: Other Philosophy>

This musical style's characteristic syncopated rhythms and low-frequency-oscillating sub-bass synth lines were popularized in the 2000s by artists such as Benga, Skream, and Digital Mystikz. For 10 points each:

[10e] Name this genre of electronic dance music that largely originated among Caribbean immigrants in the UK before sudden popularity in the USA mutated it into a “drop”-centric “bro” variant epitomized by Skrillex.

ANSWER: **dubstep** [accept **brostep**; prompt on EDM or electronic dance music]

[10h] This breakbeat-based genre, also originating with Caribbean immigrants, dominated UK rave subcultures in the 1990s. Its “ragga” variant features “toasting” or rhythmic talking over the music, often with Rastafarian themes.

ANSWER: **jungle** music [accept ragga **jungle**; prompt on drum-and-bass or DnB]

[10m] Jungle music and related styles like drum-and-bass are rhythmically centered on manipulation of this specific sample, the most widely used of all time. This sample, performed by drummer Gregory Coleman on the B-side of a single by The Winstons, also appears in N.W.A.'s “Straight Outta Compton.”

ANSWER: **Amen** break [accept the drum sample from “**Amen**, Brother”]

<JM - Arts: Other Music>