

## 2022 Medium RaNge Academic, a Vanderbilt and Company

### Collaboration vIa Network (MRNA VACCINE)

Edited by: Eric Mukherjee (head), Erik Christensen, Chandler West, Conor Thompson, Ganon Evans, Henry Atkins, Jaimie Carlson, Sam Bailey, Chris Sims, Jacob O'Rourke, and William Grossman

Written by: The Editors, Gerhardt Hinkle, Vikshar Athreya, Andrew Hanna, David Bass, Owen Riley, Lia Rathburn, Beni Keown, Vishal Puppala, Aidan Fein, Jacob Augelli, Liam Thompson, Will Alston, Michael Borecki, Sharath Narayan, Zachary Beickman, Rebecca Thomas, Bryanna Shao, and Willie Chen

### Packet 3: "Thoth consults the emerald tablet.png"

1. One of this author's characters gives cigarettes and a lighter engraved with his wife's initial to a silent prisoner detained in Delhi. In a novel by this author, the former head of the "scalphunters" lives in a van outside a prep school where he teaches French. A tribunal in one of this author's novels convicts Fiedler, who had brought charges against his ex-Gestapo superior. In a novel by this author, secret police ambush Jim (\*) Prideaux ["pree-doe"], who is in Czechoslovakia to learn the identity of "Gerald." Alec Leamas dies going over the Berlin Wall in a book by this author titled for a person coming "in from the cold." In the first book in this author's *Karla Trilogy*, a mole within the Circus draws George Smiley out of retirement. For 10 points, name this British author of *Tinker, Tailor, Soldier, Spy*.

ANSWER: John le Carré [or David John Moore Cornwell]

<Henry Atkins, British Literature>

2. This medium was used for three projects intended to show the *Triumphal Arch, Carriage, and Procession of Emperor Maximilian*. A chiaroscuro technique was used in this non-paint medium to create the artwork *Lovers Surprised by Death*. This medium was used to create the *Altar of the Holy Blood* by Tilman Riemenschneider ["REE-mun-shnai-dur"]. An artist used this medium to depict St. Michael fighting the dragon in a series depicting the (\*) *Apocalypse*. Michael Wolgemut taught a technique using this medium to an artist who used it for an artwork depicting a *Rhinoceros*. Donatello used this medium to sculpt his *Penitent Magdalene*. For 10 points, what medium was used in the sixteenth century by Albrecht Dürer and other German artists to make namesake block prints?

ANSWER: wood [or woodcuts; or woodblock printing; prompt on printmaking; prompt on illustrated manuscripts or similar answers] (*Lovers Surprised by Death* is by Hans Burgkmair.)

<Chandler West, Painting/Sculpture>

3. Annual celebrations of this industry occur in its historic Japanese center Taiji. This industry used large metal pots called trywork for the boiling needed for processing. Firsthand accounts of a disaster in this industry by Thomas Nickerson and Owen Chase provided sources for a 2000 Nathaniel Philbrick book. Competition in this industry led to a protracted conflict over the settling of (\*) Spitsbergen. Australia has historically been the most vocal opposition to the so-called “scientific” form of this industry used to circumvent a 1982 moratorium. This industry, which powered the economy of 19th-century New Bedford, provided material for Victorian women’s corsets and pre-kerosene lamps. For 10 points, name this industry that involves hunting oil-rich marine mammals.

ANSWER: whaling [or whale hunting; or dolphin hunting]

<Henry Atkins, Other History>

4. A system has this property if, for any subset of sites  $A$ , the ensemble average of a certain product at each site in  $A$  is non-negative according to the Griffiths inequality. In 1+1 dimensions, the Ishimori equation reduces to a model governing objects with this property, which in the continuum limit is written as [read slowly]  $m \text{ sub } t \text{ equals } m \text{ wedge } m \text{ sub } xx$ . The  $n$ -equals-one case of the  $n$ -vector model describes materials with this property with a Hamiltonian equal to the negative sum of all products of neighboring (\*) spins, all times a coupling constant. Materials with this property are represented by the Ising model. Plotting these materials magnetization against the H-field shows a hysteresis loop. Uniform-spin domains occur in materials with this property below their Curie temperatures. For 10 points, name this property possessed by nickel and iron, a permanent type of magnetism.

ANSWER: ferromagnetism

<David Bass, Physics>

5. This man’s 23-foot-long sarcophagus is surrounded by 40 mihrabs in a mosque west of Damascus. A belonging of this man is eaten by fire while a nearby bale is untouched because he “feared Allah.” In the Book of Enoch, this man is named the chief of martyrs. In the Quran, a raven buries this man’s body after a marriage contest over Aclima. In Hebrews, this man appears first in the Hall of Faith and the “sprinkling” of his blood is compared to that of Christ’s. (\*) Seth’s name translates as “he who was appointed by” this man. Because this man’s blood destroys the crops on the ground, another man is forced to wander the land of Nod. This shepherd offers the fattest of his sheep to earn God’s affection, which turns his farmer brother jealous. For 10 points, name this son of Adam and Eve who was murdered by his brother Cain.

ANSWER: Abel [or Habil]

<Ganon Evans, Religion>

6. A passage written by this thinker, which was criticized by Homi K. Bhabha for emphasizing violence in another writer’s text, was later collected in this writer’s book *Colonialism and Neocolonialism*. An essay written by this thinker about how literature will help Africans stand “face to face with white men” is quoted in *Black Skin, White Masks*. An essay by this thinker opens with a discussion of one of their classmates failing an exam while a (\*) Jewish classmate passed it. Ideas from this thinker’s *Anti-Semite and Jew* were applied to African colonialism by Frantz Fanon, who also included their controversial foreword in *the Wretched of the Earth*. This thinker argued that anti-semites avoid responsibility for their life through his concept of bad faith. For 10 points, name this French existential thinker who wrote *Being and Nothingness*.

ANSWER: Jean-Paul Sartre

<Andrew Hanna, Philosophy>

7. The last holder of this title explained that his family had created a country and “will not divide it” after resigning; because of his brief tenure of just 34 days, that holder is nicknamed for the month of May. After the failure of the Pact of Pacification, a holder of this title refused a Prime Minister’s request to sign a state of siege after the gathering of “action squads” in his capital city. A graffitied slogan ostensibly praising an (\*) operatic composer was actually an acronym about a holder of this title. A man with this title appointed the leader of Blackshirts as Prime Minister after a march on the capital. A member of the house of Savoy took this title after the Expedition of a Thousand led by Garibaldi. For 10 points, name this royal title held by rulers like Victor Emmanuel III, who failed to stop the rise of Mussolini.

ANSWER: **King of Italy** [prompt on King of Sardinia or Duke of Savoy by asking “What larger title did they take on?”] (The slogan is “Viva Verdi!” which meant “long live Victor Emmanuel, King of Italy.”)

<Erik Christensen, European History>

8. One technique for performing this chemical process was developed when it was discovered that alanine undergoes this process more readily in the presence of tryptophan. Sinapinic [“SIN-uh-PIN-ick”] acid is often used in that technique that performs this process, where it serves as a matrix. This process’s “ambient” forms include one where this process is applied to a liquid, which in turn applies this process to a gas. Forms of this process are described as “hard” if they cause a molecule to fragment; “soft” types of this process include its (\*) electrospray type, which molecules often undergo before being analyzed in mass spectrometry. Atoms with one valence electron have a low value for the energy named for this process. For 10 points, name this process in which a molecule becomes electrically charged.

ANSWER: **ionization** [or matrix-assisted laser deposition **ionization**; or **MALDI**; or secondary electrospray **ionization**; or **SESI**; or electrospray **ionization**; or **ESI**; or first **ionization** energy; prompt on mass spec or mass spectrometry or mass spectroscopy before mentioned]

<Beni Keown, Chemistry>

9. A work in this genre begins with the whole note chords C-sharp major, A minor, B major where the highest and lowest parts move in parallel motion. Thomas Weelkes’s “O Care, Thou Wilt Despatch Me” was inspired by a collection of pieces in this genre published by Nicholas Yonge [“young”]. A group of composers called the “Oltremontani” were critical in developing this genre from the earlier *frottola*. Rapid repeated notes characterize this genre’s agitated (\*) *stile concitato* [“STEE-lay kon-chi-TA-to”]. One collection contrasts works in this genre “of war” and “of love.” “Moro, lasso, al mio duolo” is a highly chromatic piece in this genre by Carlo Gesualdo. Claudio Monteverdi was a master of, for 10 points, what secular polyphonic vocal works, which are contrasted with motets?

ANSWER: **madrigals** [prompt on songs; do not accept or prompt on “art songs” or “lieder”]

<Gerhardt Hinkle, Classical Music>

10. This is the ultimate profession of a character who, as a child, repeatedly rereads *Animals and Plants of the European Coastal Region*. In a novella, a Parisian mesmerist watches a person with this occupation slowly die of hiccups. A person with this occupation turns out to be a former German soldier named Hans Reiter in a posthumously published novel with sections like “the Part about Fate.” The novels *The Magician* and *The Master* by Colm (\*) Tóibín follow people with this profession. A search for one of these people named Archimboldi drives the plot of Roberto Bolaño’s *2666*. Many of Kurt Vonnegut’s novels contain a fictional person with this profession named Kilgore Trout. For 10 points, what was the primary occupation of Cesar Vallejo and Pablo Neruda?

ANSWER: **writers** [or **authors**; or **poets**]

<Henry Atkins, World Literature>

11. The Neway brothers claimed they “removed the dirt” from this leader’s eyes as part of the Green Salon Massacre and an attempted progressive coup. The Casablanca and Monrovia Blocs feuded at a meeting hosted by this leader at which the OAU was founded. This leader said “God and history will remember your judgment” in a speech to the League of Nations before entering exile in Bath. The *mesafint* opposed the reforms of this leader, who cracked down on the Kulub Movement of the (\*) Harari people. Grounation Day celebrates a visit by this last ruler of the Solomonic dynasty in which he was greeted by 100,000 people smoking ganja. The Derg overthrew, for 10 points, what African ruler venerated in Rastafarianism and who reigned as the last emperor of Ethiopia?

ANSWER: Haile Selassie I [or Ras Tafari Makkonnen]  
<Erik Christensen, World History>

12. In this place, a woman is asked “for whom are the benches [in this place] / bright with rings?” by a figure using the name Vegtam. A woman travels to this place on a wagon and trades insults with a giantess in a poem named for her “Ride” to this place. The river Elivagar [“eh-lee-VAH-gar”] flows by this place, which holds a dish called Hunger and a knife called Famine. Nanna and her husband send Fulla and other goddesses gifts from this place. Odin consults a volva in this place in (\*) *Baldr’s Dreams*, and Hermod is told that he must get everything in the world to weep after he rides to this place to try to retrieve Baldr. This part of Niflheim [“NIF-ul-haim”] is guarded by Garmr [“GARM”] and has the same name as the daughter of Loki who rules over it, who is half-living, half-corpse. For 10 points, people in Norse mythology who do not end up in Valhalla go to what realm of the dead?

ANSWER: Hel [or hell; or Helheim; prompt on Niflheim; or Niflhel; the poem is *Brunhilde’s Hel-Ride*]  
<Jaimie Carlson, Mythology>

13. In a poem titled for this place, the speaker describes a “honey-gold baby / sweet enough to eat.” That poem calls part of this place “luscious, / Delicious, *fine*” and is titled for this place’s “Sweeties.” Another poem titled for this location describes seeing “the shapes of girls who pass / to bend and barter at desire’s call.” That poem describes “weary feet” “wandering from street to street” in this place. A poem titled for this place asks if an entity “crust[s] and sugar[s] over / like a (\*) syrupy sweet?” or “stink[s] like rotten meat?” A poem titled for this place asks “what happens to a dream deferred?” For 10 points, name this neighborhood where poets like Claude McKay and Langston Hughes participated in a namesake Renaissance.

ANSWER: Harlem [or “Harlem Sweeties”; or “Harlem Shadows”; or Harlem Renaissance; prompt on Manhattan; prompt on New York City or NYC] (The poems are, in order, “Harlem Sweeties” by Hughes, “Harlem Shadows” by McKay, and “Harlem” by Hughes.)  
<Chandler West, American Literature>

14. Magnitudes of alternately-shifted light sources are sequentially decreased during these events via the Rossiter–McLaughlin effect. The width of one of these events is the mean of their total duration and full duration. These events are characterized by four contacts named for exterior and interior ingress and egress. The depth of one of these events is equal to the square of the ratio of two radii. The first body to be detected from one of these events is HD 209458 b. Light curves (\*) decrease sharply to nonzero values during these events. The “timing variation” in these events for an object can be used to indirectly detect neighboring objects, which is why a majority of exoplanets are discovered upon observing these events. For 10 points, name these events in which one object passes in front of another without obscuring it.

ANSWER: transits [or transit light curves or transit-timing variation or transit method; prompt on eclipses or occultation]  
<David Bass, Other Science>

15. *Description Acceptable.* During this effort, Webb Miller chronicled the 1<sup>st</sup> Aero Squadron providing recon. Because they couldn't use the North-Western Railway, troops during this effort were resupplied by trucks for the first time in U.S. history. A group of 527 Asian refugees who joined this effort were called its commander's "Chinese." During this effort, three notches were carved into the handles of a pair of Colt peacemakers by (\*) George Patton, who earned the nickname "Bandito." The commander of this effort would later lead the American Expeditionary Force in World War I. This effort was launched after its target raided Columbus, New Mexico. For 10 points, name this expedition led by John Pershing to capture a Mexican revolutionary.

ANSWER: Punitive Expedition [or Pancho Villa expedition; accept anything indicating the expedition to capture Pancho Villa]

<Eric Mukherjee, American History>

16. Several birds native to this island incorporate batrachotoxin ["buh-TRACK-oh-toxin"] into their feathers, including the first-identified poisonous bird, the hooded pitohui ["pih-toh-WEE"]. This non-Puerto Rico island is crossed by the difficult to traverse Central Cordillera ["cor-dee-EH-ruh"], or its namesake highlands. The three species of long-beaked echidnas are endemic to this island, the only non-Australia place to have extant monotremes. This island is the primary center of diversity of a family of birds whose males have two absurdly long (\*) tail feathers, the birds-of-paradise; the resemblance of its shape to a bird-of-paradise led two peninsulas to be named Bird's Head and Bird's Tail. This island is the westernmost extent of Melanesia and is the world's most linguistically diverse region. For 10 points, name this second-largest island, divided between Indonesia and a country whose capital is Port Moresby.

ANSWER: New Guinea [or Papua; accept Irian Jaya]

<Gerhardt Hinkle, Other>

17. One substrate used in this technique has to be activated in 100% methanol for a few seconds before moving it to another buffer. Because it doesn't interfere with downstream steps, Ponceau S is often used for pre-visualization in this technique. One step of this assay is often done by laying the sample into a partly-filled pipet tip box lid, then rocking. A buffer with 20% methanol is used for one step of this assay, in which fiber pads and filter paper are used to create a "sandwich," then a constant current (\*) transfers the samples from a poly-acryl:amide gel to a P-V:D:F membrane. A chemiluminescent substrate is cleaved by H-R:P conjugated to the secondary antibody used in this technique. For 10 points, name this procedure in which antibodies are used to detect specific proteins on a membrane, named for a direction.

ANSWER: western blot [or immunoblot]

<Eric Mukherjee, Biology>

18. Bosnian Catholics created these things using breast milk from the mother of a blue-eyed boy in a process called bocati. Combs made from human and bird bone were found in Polynesia having been used to create these things, with some using a turtle shell plate to improve accuracy. Ötzi the Iceman was found with 61 of these things, which caused some initial reports to claim he was a (\*) criminal, though further research suggests they served a medicinal purpose. The tools for creating these things are often miscatalogued as sewing implements, leading archaeologists to recreate the needles and compare microscopic friction patterns after repeated use. For 10 points, name these body modifications that are found on well preserved mummies all over the world.

ANSWER: tattoos

<Rebecca Thomas, Social Science>

19. A dream sequence in this play shows a “golden wedding” attended by characters like Proktophantasmist and Xenien [“Zene-yen”]. In this play, a character introduces himself as “part of the force who would do evil evermore, and yet creates the good.” A character in this play reclaims land using dikes and orders the murderous eviction of Baucis [“baw-sis”] and Philemon [“fi-LEE-min”]. In this play’s prelude, a director, a poet, and an actor argue over the purpose of the theater. A character in this play comes to embody the “eternal (\*) feminine” of a *chorus mysticus* after a voice from above declares “she is saved.” While dancing at a mountaintop Walpurgis Night celebration, the protagonist of this play remembers his abandonment of Gretchen. For 10 points, a scholar sells his soul to Mephistopheles in what Goethe play?

ANSWER Faust [or Faust: The First Part of the Tragedy; or Faust: The Second Part of the Tragedy; do NOT accept or prompt on “*Doctor Faustus*” or “*Doktor Faustus*”]

<Henry Atkins, European Literature>

20. The colotomic structure of this musical style marks off nested cycles by using interpunctuating instruments. This musical style uses notably stretched “pseudo-octaves” since its main melodic instruments are highly inharmonic. In this style, instruments are often played in pairs tuned apart to cause interference beating and a “shimmering” timbre. Bourgault-Ducoudray’s [“boor-GO du-ku-DRAY”] rhapsody imitating this style was performed at the (\*) 1889 Exposition Universelle, where it inspired Claude Debussy. Wayang shadow puppet plays are accompanied by music in this style, which uses instruments like the kenong and saron and is built on the slendro and pelog scales. For 10 points, name this musical style whose ensembles center on pitched metal percussion, the primary traditional music of Indonesia.

ANSWER: gamelan [or gambelan; before "Indonesia", prompt on Indonesian music]

<Gerhardt Hinkle, Other Fine Arts>

1. On the fourth night of Chinese New Year, the money god Cai Shen returns to earth to judge who has the loudest example of these objects and thus wins a prize of wealth. For 10 points each:

[10e] Name these objects developed by Daoist alchemists searching for a life elixir by mixing potassium nitrate and sulfur. Today, their loud sounds are used to scare off evil spirits from businesses in Chinese folk religions.

ANSWER: **fireworks** [or **firecrackers**; prompt on **explosives**]

[10m] During a “Little New Year,” firecrackers are set off next to an effigy of this deity so he can return to heaven and give reports on people’s character to the Jade Emperor.

ANSWER: **Kitchen God** [or the **Stove God**; or **Zao Jun**; or **Zao Shen**; or **Zao Kimjah**; or **Zhang Lang**]

[10h] Firecrackers developed out of burning bamboo to scare off this monster who eats people every New Year’s. The use of the color red and the Lion Dance are two traditions originally meant to scare off this monster.

ANSWER: **Nian**

<Ganon Evans, Religion>

2. You are a wealthy member of the European bourgeoisie in 19th century Europe. Answer some questions about expanding and profiting off of land ownership, for 10 points each:

[10m] You can grab some land in the Scottish Highlands through this process of appropriation of common land.

After a General Act regarding this process, commissioners could approve areas for it without consulting parliament.

ANSWER: **enclosure** [or **clearances**]

[10e] This set of tariffs and trade restrictions passed after the Napoleonic Wars raised food prices, which will increase the value of your land growing staple crops. Robert Peel repealed these laws with the support of the Whigs.

ANSWER: **Corn** Laws

[10h] After the Highland Clearances, this practice of growing food on small arable plots of land became much more prominent in Scotland.

ANSWER: **crofting** [accept **croft** or **crofter**]

<Erik Christensen, European History>

3. In Book I of the Iliad, this figure clasps Zeus’s knees and chin with her hands in a gesture of supplication. For 10 points each:

[10h] Name this figure who persuades Zeus to temporarily favor the Trojans and whom Homer describes as “silver-footed.”

ANSWER: **Thetis**

[10e] This son of Thetis asks her for revenge on the Greeks after Agamemnon dishonors him by taking away Briseis. Thetis dipped this Greek hero in the river Styx when he was an infant, making him nearly unkillable.

ANSWER: **Achilles** [or **Achilleus**]

[10m] Thetis can influence Zeus because she saved him from being deposed by summoning one of these creatures named Briareos. These sons of Ouranos and Gaia are installed as guards of Tartarus after the Titanomachy.

ANSWER: **Hecatoncheires** [or **Hundred-Handers**, or any answer indicating that they have **100 hands**]

<Lia Rathburn, Mythology>

4. Naomi Shihab Nye noted that this poet was the “Essential Breath” of his ethnic group. For 10 points each:

[10h] Name this poet who wrote that he “touch[es] you as a lonely violin touches the suburbs of the faraway place” in his “Sonnet V.” A poem by this author ends multiple stanzas by asking “are you angry?” and warns the reader to “Beware... beware ... of my hunger.”

ANSWER: Mahmoud **Darwish** (The unnamed poem is “Identity Card.”)

[10e] Darwish wrote most of his poetry in this language. The Quran was written in this language.

ANSWER: **Arabic** [or al-‘**arabiyvah**]

[10m] This author wrote that “the personal and the public are always in an uneasy relationship” in Darwish’s poetry. This author also condemned imperialism in the books *Culture and Imperialism* and *Orientalism*.

ANSWER: Edward Wadie **Said** [or Idwārd Wadī‘ **Sa‘īd**]

<Vikshar Athreya, World Literature>

5. Bézier [“bee-zee-ay”] handles designate the derivative of curves created by this task near their critical points. For 10 points each:

[10e] Name this task of creating a curve to connect a set of fixed points, which is often performed with high-degree polynomials or splines.

ANSWER: **interpolation** [or polynomial **interpolation**, or spline **interpolation**; prompt on **fitting** or **fitting data**]

[10h] Animation software uses these things as the fixed points for creating animation curves via interpolation.

Animators explicitly describe the properties of an object at a given point in time with these things.

ANSWER: **keyframes**

[10m] Poor interpolation of these transformations between keyframes can be caused by gimbal lock, an issue that can be avoided by encoding these transformations with quaternions instead of Euler angles.

ANSWER: **rotations**

<David Bass, Other Science>

6. According to a theory that has recently come under fire for a lack of replicability called *this concept* depletion, people have a limited amount of self-control that can be used up over time. For 10 points each:

[10e] Name this concept, which according to Freud mediates between its “super” counterpart that moralizes and the id that fuels desires.

ANSWER: **ego**

[10h] One of the defense mechanisms used by the ego is this process, in which impulses to do socially undesirable actions are transformed into desirable ones like the pursuit of art or education.

ANSWER: **sublimation**

[10m] In this other defense mechanism often found in bullies, the ego will “split off” its own qualities and attribute them to other people. This defense mechanism includes a neurotic form and the distinct complementary and complimentary forms.

ANSWER: **projection**

<Erik Christensen, Social Science>



7. A verse romance by Geoffrey Chaucer set in this city centers on a warrior who falls in love with a widow, dies, and then reaches the eighth sphere, but is unable to enter heaven as he is not Christian. For 10 points each:  
[10m] Name this ancient city. Wace's *Roman de Brut* tells the story of Brutus, a man from this city who legendarily became the first king of Britain.

ANSWER: **Troy** [or **Troia**, or **Ilium**, or **Ilion**; accept Brutus of **Troy**] (The Chaucer poem is *Troilus and Criseyde*.)

[10h] This medieval English author's *Troy-Book* adapts Guido delle Colonne's wildly popular *History of the Destruction of Troy*. His other works include an adaptation of Boccaccio's biographies called *The Fall of Princes*.

ANSWER: John **Lydgate** of Bury

[10e] Medieval literature about Troy drew heavily on both the *Iliad* and this epic poem written by Virgil, which describes its title hero's escape from Troy with his father Anchises.

ANSWER: **Aeneid** [or **Aeneis**]

<Will Alston, British Literature>

8. A small sculpture which functions as one of these objects was stolen from the artist's estate in 2012. For 10 points each:

[10h] Identify this general type of object. A massive bronze sculpture which functions as one of these objects was moved from the steps of a museum to the shore of Lake Michigan and is titled *Man Enters the Cosmos*.

ANSWER: **sundials**

[10m] Those sundials were created by this British sculptor best known for creating abstract sculptures of reclining figures, which he was inspired to create by pre-Columbian sculptures.

ANSWER: Henry Spencer **Moore**

[10e] Moore's mushroom-shaped sculpture *Nuclear Energy* was created to commemorate the creation of the first self-sustaining controlled nuclear reaction at a university in this city, which also contains the Art Institute.

ANSWER: **Chicago** [or the University of **Chicago**; or the Art Institute of **Chicago**]

<Chandler West, Painting/Sculpture>

9. The poet Tyrtaios ["teer-TIE-os"] wrote many elegies celebrating the Spartan hoplites who conquered this region. For 10 points each:

[10h] Name this region in the southwestern Peloponnese, whose inhabitants used Mount Ithome ["ith-OH-may"] as a base for resistance against Sparta in three wars named for it.

ANSWER: **Messenia** [or **Messinia**]

[10m] Following their conquest by Sparta, most Messenians became the exploited helots. According to Plutarch, the helots' labor enabled this quasi-historical lawgiver to free all Spartan citizens from the need to work or make money.

ANSWER: **Lycurgus** [or **Lykourgos**]

[10e] Several hundred helots were present in this Spartan king's army at the Battle of Thermopylae in the Second Persian Invasion of Greece. This king's name means "son of the lion."

ANSWER: **Leonidas** [or **Leonides**]

<Lia Rathburn, Other History>

10. Monosaccharides are the building blocks for longer sugar chains. For 10 points each, answer some questions about the chemistry of monosaccharides:

[10e] This monosaccharide is the only monomer in cellulose. In humans, it is stored as glycogen while in plants it is stored as starch.

ANSWER: **glucose** [or **dextrose**]

[10m] This is the name for the bond that connects two sugars to form a disaccharide. These specialized covalent bonds connect the hemiacetal ["hemi-ASS-uh-tall"] or hemiketal ["hemi-KEY-tall"] group of one monosaccharide to a hydroxyl group on the other.

ANSWER: **glycosidic** bond [or **glycosidic** linkage]

[10h] This process is the change in optical rotation of a solution of a sugar due to the conversion of one anomer to the other.

ANSWER: **mutarotation**

<Zachary Beickman, Chemistry>

11. This composer added the note "six concerti written in a hurry" at the beginning of the autograph score of his *Concerto à 8* ["otto"] *concertanti* in G major, and he also wrote a surprisingly epic *Miserere* in C minor. For 10 points each:

[10h] Name this Czech composer of the allegorical melodrama *Sub olea pacis et palma virtutis*, written for the coronation of the Emperor Charles VI.

ANSWER: Jan Dismas **Zelenka** [or Jan Lukáš **Zelenka**; or Johann Dismas **Zelenka**; or Johannes Lucas Ignatius Dismas **Zelenka**]

[10m] Zelenka was mainly active in this city, where he briefly served as acting Kapellmeister before the appointment of Johann Adolph Hasse. A rising six-note motif is this German city's namesake "Amen."

ANSWER: **Dresden**

[10e] Zelenka's most significant vocal works are in this liturgical genre, including ones called *Sanctissimae Trinitatis* and *Votiva*. Zelenka's friend J. S. Bach wrote a famous work in this sacred genre in B minor.

ANSWER: **Mass** [or **Missa**; or **Messe**]

<Gerhardt Hinkle, Classical Music>

12. Answer the following about the development of textiles in the Americas. For 10 points each:

[10e] Using llama fur, this civilization created collections of corded knots called *quipu* that were used for counting. Vicuña wool was reserved for emperors like Pachacuti who resided at this civilization's site of Machu Picchu.

ANSWER: **Incan** Empire [or **Tawantinsuyu**]

[10m] Under this leader, the Banco de Avio bankrolled carpet factories like those owned by CIDOSA ["see-doh-sa"]. *Cientificos* advised this leader, who relied on *guardias rurales* to enforce debt peonage on behalf of wealthy landowners.

ANSWER: Porfirio **Díaz**

[10h] After their traditional women's clothing of mola was banned, this country's native Guna people occupied the San Blas Islands. Escaped slaves from Nombre de Dios formed the Cimarron people in this modern-day country.

ANSWER: **Panama** [or the Republic of **Panama**]

<Vikshar Athreya, World History>

13. A collection of eleven linked stories by this author is narrated by “Fuckhead,” who describes surviving a head-on collision while hitchhiking high in the first story. For 10 points each:

[10h] Name this late American author who wrote about CIA Agent Skip Sands' work in 60s Vietnam in *Tree of Smoke*.

ANSWER: Denis (“Dennis”) **Johnson**

[10m] Stories like "Car Crash While Hitchhiking" and “Emergency” appear in a Johnson collection titled for this person’s son. This person is interrogated by the “Grand Inquisitor” in *The Brothers Karamazov*.

ANSWER: **Jesus Christ** [accept either underlined]

[10e] Johnson’s novella *Train Dreams* was one of three finalists to controversially not receive this award in 2012. This award, named for a newspaper magnate, has categories for journalism and music composition.

ANSWER: The **Pulitzer** Prizes [or the **Pulitzer** Prize for Fiction]

<Henry Atkins, American Literature>

14. In one method for driving these devices, a microcontroller uses position data from Hall Effect sensors to switch the current path through an H-bridge. For 10 points each:

[10e] Name these actuators that convert electrical energy into rotary motion, usually by using a magnetic field to rotate a shaft. Their brushless type features a permanent magnet on the rotor and windings on the stator.

ANSWER: (brushless) DC **motors**

[10h] Brushless DC motors use solid-state electronics to perform this process, which reverses the current direction through their windings to maintain a continuous torque.

ANSWER: **commutation** [or **commutator**]

[10m] Brushless DC motors can be driven with an H-bridge featuring four of these devices, which control current between a drain and a source. Unlike a similar “bipolar junction” device, they use a single type of charge carrier.

ANSWER: metal-oxide-semiconductor **field-effect transistors** [or **MOSFETs** or **FETs**; prompt on transistors; prompt on unipolar transistors; do NOT accept or prompt on “bipolar junction transistors” or “BJT”]

<Jacob Augelli, Physics>

15. Artists in this medium worked exclusively for single newspapers in this medium’s “golden age,” which was prior to the rise of syndication. For 10 points each:

[10e] Name this paneled visual medium of series like *Gasoline Alley*. More recent examples of this medium include *Doodlesbury* and *Peanuts*.

ANSWER: **comic** strips [or **cartoons**; or **funnies**; do NOT accept or prompt on “comic books”]

[10h] One of the first strips to be taken seriously as art was this surreal George Herriman comic. This strip often ends with a mouse named Ignatz throwing a brick at the seemingly gender-fluid title character.

ANSWER: ***Krazy Kat***

[10m] During the golden age of comic strips, these types of strips received full page prints. Bill Watterson fought for greater formatting freedom for *Calvin and Hobbes* in this type of strip, which unusually comes in color.

ANSWER: **Sunday** strips [or **Sunday** funnies; prompt on funny pages]

<Henry Atkins, Other Fine Arts>

16. Avicenna claimed that he only understood this text, even after reading it forty times, when he read al-Farabi's commentary about its *Purposes*. For 10 points each:

[10m] Name this text, which asks "what is substance," or *ousia*, in its Book Zeta. This text describes its title discipline as "first philosophy" and describes the "unmoved mover."

ANSWER: **Metaphysics**

[10e] *Metaphysics*, and its counterpart *Physics*, is a collection of writings by this Ancient Greek philosopher. This thinker also wrote the *Nicomachean Ethics* and taught Alexander the Great.

ANSWER: **Aristotle** [or **Aristotélēs**]

[10h] *Original Greek term required*. In book III of the *Physics*, Aristotle argued for two kinds of this "boundless" concept, which is unknowable because there is always something outside it. Anaximander believed the reality, or *arche*, was eternal and had this concept.

ANSWER: **apeiron**

<Erik Christensen, Philosophy>

17. The triangle of U ["oo"] describes the relationships between several species in this genus. For 10 points each:

[10h] Name this plant genus. The corners of the triangle of U consist of black mustard; turnips and bok choy; and the species *oleracea*, whose many cultivars include cabbage, kale, broccoli, and Brussels sprouts.

ANSWER: **Brassica**

[10e] The species on the edges of the triangle of U arose by this process. Since they better tolerate genetic defects, plants produced by this process tend to be healthy, while animals resulting from it are usually sterile, like mules.

ANSWER: **hybridization** [or **crossing**; or **crossbreeding**; or **interbreeding**; accept word forms of any of the preceding answers]

[10m] The hybrid species on the triangle of U display this property since they have a full copy of the genome from each parent species. The development of this property is a common mechanism of sympatric speciation.

ANSWER: **polyploidy** [or **tetraploidy**; or allo**polyploidy** or auto**polyploidy**]

<Gerhardt Hinkle, Biology>

18. This city's neoclassical design used an innovative grid system, with wards of eight blocks surrounding green space squares. For 10 points each:

[10h] Name this city, whose founders secured land from the Yamacraw through the mediation of Mary Musgrove at the beginning of the Trustee period.

ANSWER: **Savannah**

[10m] This man designed the streets of Savannah in his namesake Plan. He also defeated a Spanish invasion at the Battle of Bloody Marsh.

ANSWER: James **Oglethorpe**

[10e] Oglethorpe defied Trustee orders by allowing 42 practitioners of this religion to settle in Georgia. Immigration of practitioners of this religion to America skyrocketed in the late 1800s due to Eastern European pogroms.

ANSWER: **Judaism** [or **Jews**; or **Jewish Faith**; accept specific forms such as Orthodox **Judaism** or Reform **Judaism**]

<Henry Atkins, American History>

19. Beyoncé Knowles is descended from a folk hero of these people, Joseph Broussard. For 10 points each:

[10h] Name this group of people who developed the tintamarre custom of marching with noisemakers. They were led by Broussard and Father Le Loutre in a conflict where they fought Protestant settlers alongside the Mi'kmaq and the Wabanaki Confederacy.

ANSWER: **Acadians** [or **Acadiens**; prompt on **French Canadians**]

[10e] The Acadians were expelled from Canada's maritime provinces during this conflict, in which the British failed to capture the French fortress at Louisbourg but annexed Quebec after winning at the Plains of Abraham.

ANSWER: **French and Indian War** [or **Seven Years' War**]

[10m] The expulsion of the Acadians is commemorated in this epic poem by Henry Wadsworth Longfellow. This poem, which opens by describing the "forest primeval," ends with the title woman finding her lover Gabriel dying in an epidemic in Philadelphia.

ANSWER: "**Evangeline**, a Tale of Acadie"

<Michael Borecki, Other>

20. Many of Vladimir Nabokov's forewords casually dismiss this thinker as the "Viennese Witch Doctor." For 10 points each:

[10e] Name this author of *The Interpretation of Dreams*, whose psychoanalysis critics like Jacques Lacan used to analyze fiction.

ANSWER: Sigmund **Freud**

[10m] Princess Marie Bonaparte wrote a psychoanalytic study of this author's life, one of whose stories titles a 1972 Lacan seminar. Charles Baudelaire's translations of this American's output popularized them in France.

ANSWER: Edgar Allen **Poe**

[10h] French critic René Girard used Freudian ideas to develop a theory of motivation via this kind of desire. An Eric Auerbach book titled for this concept opens by comparing everyday life as seen in *The Odyssey* and the Bible.

ANSWER: **mimetic** desire [or **mimesis**]

<Henry Atkins, European Literature>