

2022 Winter Closed

Co-Head Editors: Tim Morrison and Tejas Raje

Editors: Justine French, William Golden, Hasna Karim, Itamar Naveh-Benjamin, Hari Parameswaran, Jonathen Settle, Ethan Strombeck, Jon Suh, and Annabelle Yang

Writers: Jacob Egol, Ganon Evans, Natan Holtzman, Aseem Keyal, Rahul Keyal, Amogh Kulkarni, Steven Liu, Chauncey Lo, Douglas Meeker, and Kai Smith

Logistics: Aidan Leahy

Packet D

Tossups

1. **These species are the lighter of the two species transported by the stator proteins MotA and MotB that surround rotor proteins in flagellar motors. In Peter Mitchell's Q-cycle mechanism, two of these species are released across a membrane when ubiquinol is transformed to ubiquinone. N,N'-Dicyclohexylcarbodiimide ("N-N-prime di-cyclo-hexyl-carbo-di-IM-ide"), or DCCD, prevents the transport of these species by binding to a protein complex's c subunit. An electroneutral P-type ATPase ("A-T-P-ace") that is inhibited by (*) lansoprazole ("lan-SO-pruh-zole") and omeprazole ("oh-MEH-pruh-zole") moves these species into the gastric lumen. An electrochemical gradient established by the efflux of these species drives ATP synthesis during oxidative phosphorylation. The standard hydrogen electrode is a half-reaction that produces two electrons and two of these species by oxidizing H₂ ("H-two"). For 10 points, name these nucleons with a plus-one charge.**

ANSWER: **protons** [or **H⁺** ("H-plus") ions; accept **hydronium** ions or **H₃O⁺** ("H-3-O-plus") ions until "two electrons" is read; prompt on ions or cations] (The third sentence refers to ATP synthase.)

<Settle, Chemistry>

2. **A song recorded by this artist was sampled by Kanye West, who used a piano line and the words "Holler, Lord" from it, for the beat of Talib Kweli's "Get By." This artist partly titles a song featuring Mavis Staples by Hozier ("HO-zee-er"), called "[This artist] Cried Power." This artist reimagined Kurt Weill's "Pirate Jenny" as a maid who orders the ghostly crew of a "black freighter" to kill her oppressors "Right now!" This virtuoso pianist often improvised (*) Bach-inspired solos mid-performance, including one in "Love Me or Leave Me." A song by this artist that highlights colorism and controlling images of Black women is narrated by Aunt Sarah, Saffronia, Sweet Thing, and Peaches. The murder of Medgar Evers inspired a song by this artist that opens, "Alabama's gotten me so upset / Tennessee made me lose my rest." For 10 points, name this "High Priestess of Soul" who sang "Four Women" and "Mississippi Goddam."**

ANSWER: Nina **Simone** [or Eunice Kathleen **Waymon**] (The Simone track referenced in the first two clues is "Sinnerman," which Simone did not write but arranged a 10-minute version of.)

<Karim, Other Academic>

3. A 51-page birch-bark manuscript believed to be authored by this empire's physicians was discovered by and named for Hamilton Bower. A ruler of this empire is described as subduing the forest kings, or *atavika rajya* ("AH-tuh-vee-kuh RAJ-yuh"), in a pillar inscription ascribed to the court poet Harisena ("huh-ree-shay-nuh"). A legendary ruler of this empire created his own calendar system after driving out the Sakas ("SAH-kuhs") and establishing a new capital at Ujjain ("ood-JAIN"). This empire was repeatedly invaded by the (*) Hephthalites, or White Huns. A ruler of this empire constructed a rust-resistant iron pillar at Mehrauli. Faxian ("fah-shyen") glorified that mythical ruler of this empire named Vikramaditya ("vik-rum-AH-dit-yuh"). The mathematician Aryabhata wrote during the rule of this empire, whose kings are generally believed to have sponsored Kālidāsa. For 10 points, name this empire that ruled during India's golden age in the 4th through 6th centuries.

ANSWER: **Gupta** Empire [or **Gupta** dynasty]

<Parameswaran, Other History>

4. As part of a game with her husband, a woman created by this author speculates that an elderly twin is hermaphroditic and follows her into a bathroom to discover that she is a blind clairvoyant. In that story by this author, a man who thinks he has seen his dead daughter Christine on vacation in Venice is killed by a knife thrown by a red pixie-hooded dwarf. A story by this author ends with "the tearing sound of splintering wood" as a disabled veteran smokes his last cigarette and turns on his silent wireless (*) radio. This author of "Don't Look Now" wrote of Nat Hocken's futile attempts to defend his family's Cornish seaside home from the title animals in a story that was adapted into a film by Alfred Hitchcock. For 10 points, what author of horror stories like "The Birds" wrote "Last night I dreamt I went to Manderley again" to open her novel *Rebecca*?

ANSWER: Daphne **du Maurier**

<R. Keyal, Short Fiction>

5. One thinker claimed that balancing "time-biased" and "space-biased" means of this process was crucial to the rise of empires. Another thinker's Marxist four-stage model of this process is characterized by dominant, negotiated, and oppositional responses. Harold Innis's book on the "bias" of this process pioneered the study of this process by the Toronto School. Contra the hypodermic needle model, (*) "opinion leaders" govern this process in Paul Lazarsfeld's "two-step flow" model of it. Shannon and Weaver name a six-component model of this process. Transactional models of this process add consideration of noisy channels to the codes, speakers, messages, and receivers considered by linear and bidirectional models. For 10 points, the media enables what process of conveying information?

ANSWER: **communication** [or mass **communication**; accept *The Bias of Communication*; accept "A Mathematical Theory of **Communication**"; prompt on answers describing the flow of information; prompt on media until read; prompt on encoding or decoding by asking "what is the more general process described by that model?"] (The second sentence refers to Stuart Hall's encoding/decoding model of communication.)

<R. Keyal, Social Science>

6. These quantities are used to compute a standard distance measure named for Masatoshi Nei that increases linearly with time. The F_{st} statistic is usually computed as the variance of one of these quantities over the product of “one of these quantities” and “one minus that one of these quantities.” A binomial distribution defined by two of these quantities gives the transition probabilities in the Wright–Fisher model. Two of these values define the horizontal plane in the original formulation of a (*) fitness landscape. The nonrandom association of two loci relative to one of these quantities at each locus is called linkage disequilibrium. For two of these quantities represented p and q , the quantity p -squared plus $2pq$ plus q -squared sums to one in Hardy–Weinberg equilibrium. For 10 points, what quantities are the rate at which a gene variant appears in a population?

ANSWER: **allele frequencies** [or **frequency of an allele**; or **gene frequencies**; prompt on frequency or frequencies; reject “genotype frequencies”]

<Settle, Biology>

7. *Description acceptable.* During this process, a ceremonial whip is crafted from strips of large palm leaves to symbolize ritual discipline. This process sometimes begins with a step called the *bat ge*, or “beating war”; in other cases, this process may begin with the building of a throne for Ayizan (“ah-yee-ZAHN”). People prove their strength during this process by grabbing at boiling cornmeal. People who have undergone this process are called (*) *hunsi*. Those people undergoing this process go into a period of seclusion called *kouche* (“koo-shay”) after kissing the ground at the feet of a *mambo*. The purpose of the *lave tèt* head-washing ritual during this process is to establish a permanent link between a *loa* and the person undergoing it. For 10 points, identify this process by which new members join a syncretic Haitian religion.

ANSWER: **initiation** into **Vodou** [or *kanzo*; accept **Vodun** in place of “Vodou”; accept **becoming a hunsi** or equivalent phrasings until read; accept **converting to Vodou**; prompt on initiation; reject answers like “initiation to the Vodou priesthood” or “becoming a *mambo*” or “becoming a *houngan*”]

<Kulkarni, Religion>

8. In the 1950s, trade of this good in the Kokang region was controlled by Olive Yang, the cross-dressing daughter of Kokang’s chief. As detailed in a 1988 *Frontline* piece by Alfred and Leslie Cockburn, General Vang Pao exported large quantities of this good using C-47s lent by Air America. The Dutch brought a crude form of this good known as *madak* from Java to Taiwan, which became so popular that the (*) Yongzheng (“yung-jung”) Emperor issued an edict against it. During the Vietnam War, the CIA encouraged the Hmong (“mawng”) and other tribes of the Golden Triangle to produce this good. Over 100 years earlier, this good was the namesake of two conflicts whose loser was forced to sign “Unequal Treaties” that ceded Hong Kong. For 10 points, what drug names a series of wars between the Chinese and British?

ANSWER: **opium** [accept **heroin**; accept **opiates**; accept **Opium Wars**; prompt on drugs until “drug” is read]

<Parameswaran, World History>

9. In a novel, this man uses his daughter’s crayons to map out a story on a roll of wallpaper via multiple lines that all intersect a vertical orange band. In another novel, this man watches a meeting between the two main characters while sitting in the cocktail lounge of a Holiday Inn and wearing sunglasses, or “leaks.” In a motel room, this man reads Erika Ostrovsky’s book *Céline and His Vision* and Theodore Roethke’s (“RET-kee’s”) poem “The Waking” before comparing his attempt to look (*) back at the past to the story of Lot’s wife. In a novel’s frame story, this author explains how a conversation with Mary O’Hare inspired the subtitle “The Children’s Crusade,” declares that “all this happened, more or less,” and recounts his eventual return to the city of Dresden. For 10 points, name this author who wrote himself into his novels *Breakfast of Champions* and *Slaughterhouse-Five*.

ANSWER: Kurt **Vonnegut** [or **Kurt Vonnegut**; prompt on the author by asking “which author?”; prompt on the narrator of *Slaughterhouse-Five* or the narrator of *Breakfast of Champions*]

<Morrison, Long Fiction>

10. Authorities from this country stopped production of a film about an astronaut who is crucified on the moon, titled *On the Silver Globe*. In a film by a director from this country, a model who survives a ferry crash at its end is shown in profile on a billboard blowing bubble gum against a red background. In a 2013 film from this country, a soon-to-be nun leaves the convent to meet her more promiscuous aunt. A director from this country adapted *A Short Film About Killing* from the ten-part TV series (*) *Dekalog*. That director from this country used blue lighting in many shots of Juliette Binoche, who plays a composer's widow, in the first film of his *Three Colours* trilogy. A French-born director from this country made the films *Rosemary's Baby* and *Chinatown* before fleeing the US amid a statutory rape conviction. For 10 points, name this home country of Roman Polanski.
ANSWER: **Poland** [or Republic of **Poland** or Rzeczpospolita **Polska**] (The film in the third sentence is *Ida*.)
<Golden, Other Arts>

11. Beatniks, skidrow alcoholics, and urban hillbillies belong to a title group described by this adjective in a book that discusses a "vicious circle" in the chapter "If You're Black, Stay Back." This adjective appears in the title of a book that depicts the "growler" following children from the cradle as part of "The Harvest of Tares." An "affluent society" and a spiritually empty "Invisible Land" are the "Two Nations" contrasted in a book titled for an "America" of this type, written by (*) Michael Harrington. This adjective appears in the title of an 1890 book that includes sections like "the Sweaters of Jewtown" and "A Raid on Stale Beer Dives" and describes the ragpickers of "the Bend" alongside a photo of "Bandit's Roost." For 10 points, a photobook depicting tenement dwellers by Jacob Riis ("reece") used what adjective to describe the poor "half" of New York?
ANSWER: **other** [accept *The **Other** America: Poverty in the United States*; accept *How the **Other** Half Lives: Studies among the Tenements of New York*]
<A. Keyal, American History>

12. A 2021 study in *Science* used atmospheric data to confirm that this body of water's role as a carbon sink has strengthened over the past decade, allaying concerns about a CO₂ "burp" during winters. In 2000, the International Hydrographic Organization defined this body of water as the waters lying within a marine convergence encircling a landmass that borders the marginal Lazarev and Riiser-Larsen seas. Sailing from east to west in this body of water is difficult given its West Wind Drift, the largest wind-driven current in the world. Although it is disputed by (*) Australia, the IHO definition of this body of water was officially recognized by the National Geographic Society in 2021 on World Oceans Day. The Antarctic Circumpolar Current lies within, for 10 points, what "newest ocean" named for a cardinal direction?
ANSWER: **Southern** Ocean [accept **Antarctic** Ocean until "Antarctic" is read; accept **Southern** Ocean Carbon and Climate Observations and Modeling; prompt on **Weddell** Sea by asking "what larger body of water is that part of?"]
<Lo, Geography>

13. The poem "Astigmatism" depicts Ezra Pound as a "Poet" who strikes at some of these objects, "wretched" and "useless." These objects tell "goose-quill men" that "May is a month for flitting" in a poem from *What's O'Clock* that says they are "everywhere in this my New England." A "harsh" one of these objects is "lifted / in the crisp sand" and "caught in the drift" of the sea in a poem by H.D. A woman in a "stiff, brocaded gown" passes these objects on a path in the poem (*) "Patterns." The speaker cheers upon realizing there are these objects "in hell" in a poem in triadic-line verse about a green one from the underworld by William Carlos Williams. A haiku-inspired couplet compares parts of these objects to an "apparition" seen in a Parisian metro. For 10 points, Ezra Pound likened "faces in a crowd" to the petals of what objects?
ANSWER: **flowers** [accept **daisies**, **irises**, **roses**, **asphodels**, **daffodils**, **squills**, or **lilacs**; accept "Sea **Rose**"; accept "**Asphodel**, That Greeny Flower"; accept **bough**; prompt on **plants**; prompt on **petals** by asking "what are they part of?"; prompt on **branch**]
<R. Keyal, Poetry>

14. In the dual superconductor model, this quantity is the source of fields that are compressed into flux tubes by the dual Meissner effect. A paper by Nambu and a follow-up by Han and Nambu were the first to explicitly introduce this quantity, which had earlier been implicitly introduced in the study of order-3 parafermion statistics. Before this quantity was introduced, the delta-plus-plus, delta-minus, and omega-minus baryons violated the spin–statistics theorem. In the (*) SU(3) (“S-U-three”) representation of this quantity, free particles must exist in the singlet state. Experiments have observed that particles with non-zero values of this quantity are confined, but there does not exist a proof of such behavior within QCD. For 10 points, name this three-valued quantity possessed by quarks, antiquarks, and gluons that governs the strong force.

ANSWER: color charge [reject “charge”]

<Settle, Physics>

15. This thinker’s doctrine of incommunicable thoughts is rejected in an essay by John Perry that discusses this thinker’s account of demonstratives like “here” and “today.” Along with a more recent philosopher, this thinker names a problem for non-cognitivism in which a moral statement appears to mean something different when it is the antecedent of a conditional. That argument against ethical expressivism is named for this thinker and Peter Geach. This thinker argued that the meaning of a word can be analyzed only in the (*) context of a proposition in a book that attacks psychologistic theories of mathematics. Bertrand Russell’s “On Denoting” rejects a distinction that this thinker illustrated by analyzing the statement, “Hesperus is the same planet as Phosphorus.” For 10 points, name this German author of *The Foundations of Arithmetic* and “On Sense and Reference.”

ANSWER: Gottlob Frege (“FRAY-guh”)

<French, Philosophy>

16. The so-called “Northern Machiavel,” Lord Bute, came to power during this conflict using his influence as a boy king’s tutor; Bute issued an extremely unpopular cider tax following it. During this conflict, members of the Duke of Devonshire’s ministry quibbled over whether to execute Admiral Byng for failing to protect Minorca. Sir Edward Hawke thwarted a planned invasion of England during this conflict at the Battle of Quiberon Bay that, along with victories in Guadeloupe and (*) Madras, led that year of this conflict to be termed an “Annus Mirabilis.” For much of this conflict, the British government was led by a coalition of the Duke of Newcastle and William Pitt the Elder. To pay debts incurred during this conflict, George Grenville passed the Stamp Act in the American colonies. For 10 points, name this worldwide conflict lasting from 1756 to 1763.

ANSWER: Seven Years’ War [accept the French and Indian War; accept Third Carnatic War]

<Raje, European History>

17. Scattered colored lines obscure a photo of this author on the cover of a 2020 New Directions edition of his “complete works” whose opening section, *The Keeper of Sheep*, was written on a “triumphant day.” This writer for the magazine *Orpheus* declared myth the “nothing that is everything” in the poem “Ulysses,” which is included in a book inspired by his country’s coat of arms. Richard Zenith and Margaret Jull Costa struggled to order a fragmentary book discovered posthumously in one of this author’s trunks that consists of a (*) bookkeeper’s musings framed as a “factless autobiography.” The ghost of this author encounters a doctor created by this author in the novel *The Year of the Death of Ricardo Reis*, which was written by his compatriot José Saramago. For 10 points, name this Portuguese author who used one of his many “heteronyms” to write *The Book of Disquiet*.

ANSWER: Fernando Pessoa [or Fernando António Nogueira Pessoa; accept Alberto Caeiro or Bernardo Soares; accept Ricardo Reis until read] (The book in the second sentence is *Mensagem*.)

<R. Keyal, Misc. Literature>

18. A dog watches an eagle abduct the title figure in this artist's now-lost drawing *The Rape of Ganymede*, grouped with a set of four drawings that also includes *The Fall of Phaeton*. Two cherubs hold up Jesus's dead body while Mary raises her arms behind him in a Pietà ("pee-ay-TAH") that this artist drew for Vittoria Colonna. According to Vasari, this artist created a series of "divine heads" of Zenobia and Cleopatra for the poet Tommaso dei Cavalieri, to whom he also sent several love (*) sonnets. An old, muscular woman stares at a book in front of two angels in this artist's painting of the Cumaean Sibyl, which appears next to paintings of eight prophets. In that same building, this artist painted God reaching out to touch fingers with a reclining male nude. For 10 points, name this artist who painted *The Creation of Adam* for the Sistine Chapel.

ANSWER: **Michelangelo** [or Michelangelo di Lodovico **Buonarroti** Simoni]

<Parameswaran, Painting and Sculpture>

19. The change in this quantity is related to the average virtual temperature by the hypsometric equation. The LFC is the value for this quantity for which an air parcel experiences positive buoyancy. The derivative of pressure with respect to this quantity equals negative density times gravitational acceleration for an atmosphere in hydrostatic equilibrium. In inversion layers, the negative of the derivative of temperature with respect to this quantity changes sign; the change in temperature as this quantity changes is the (*) lapse rate. Aircraft measure this quantity by assuming that it is proportional to the logarithm of the atmospheric pressure measured by a barometer. The death zone exists at high values for this quantity because oxygen levels are too low to support human life. For 10 points, name this quantity that is the distance of an object above the Earth's surface.

ANSWER: **altitude** [accept **height** or **elevation**; prompt on **depth**, **distance**, **position**, **radius**, or **z**] (The second sentence refers to the level of free convection.)

<Liu, Other Science>

20. The ballet section "Dance of the Scythians" appears in an opera by this composer whose most performed aria was adapted from the aria "Se mai senti spirarti sul volto" from his version of *La clemenza di Tito*. This composer bemoaned "tiresome ritornellos" in the printed score for an opera whose lead performs the aria "Divinités du Styx." A dancer removes a scarf cover and reveals (*) Elysium in the second act of an opera by this composer that includes the aria "Che puro ciel" ("kay POO-roh ch'yel"). The librettist Ranieri de' Calzabigi ("ron-YAIR-ee day kalt-sah-BEE-jee") collaborated with this composer on goals like fewer da capo arias and more accompanied recitatives ("ress-it-uh-TEEVs"), as exemplified by his opera *Alceste* ("al-SEST"). The "Dance of the Blessed Spirits" appears in an opera by this composer whose third act centers on an escape from Hades. For 10 points, name this German opera reformer who composed *Iphigénie en Tauride* and *Orfeo ed Euridice*.

ANSWER: Christoph Willibald **Gluck**

<Evans, Classical Music>

Bonuses

1. The NIMA is an award given to modern musicians of this ethnicity, such as Baker Boy and Yothu Yindi. For 10 points each:

[M] Name this ethnicity whose members often apply body paint before performing wangga music. These people describe landmarks in song cycles known as “songlines” that assist with navigation and preserve their history.

ANSWER: **Aboriginal Australians** [or **Aborigines**; or **indigenous Australians**; or **Aboriginal and Torres Strait Islanders**; prompt on **aboriginal** or **indigenous**; prompt on **Australian**]

[E] Performers of this indigenous Australian instrument often use circular breathing to maintain a constant drone. William Barton’s playing of this long, cylindrical aerophone often fuses Australian with classical European music.

ANSWER: **didgeridoo** [or **vidaki**; or **mandapul**; or **mako**]

[H] Didgeridoos are often accompanied by this percussive instrument, which keeps the beat for indigenous Australian music. The action for which this instrument is named adds a rhythmic element to sevillanas (“seh-vee-YAH-nas”) music.

ANSWER: **clapsticks** [or **clappers**; or **bilma**; or **bimli**; prompt on **sticks**]

<Lo, Other Arts>

2. This geometric quantity is expressed as a double line integral in the Neumann formula for it. For 10 points each:

[H] Name this quantity that relates the emf (“E-M-F”) produced in a coil to the changing current of a nearby coil.

ANSWER: **mutual inductance** [prompt on **inductance**]

[E] By Lenz’s law, the direction of this field produced by the induced current flow is such that it opposes any change to the flux through the loop. This field only exerts a force on a charged particle if the particle is moving.

ANSWER: **magnetic** field [or **B** field]

[M] The self-inductance of a coil equals the product of this quantity and magnetic flux all over current. The inductance of a solenoid depends on the square of this dimensionless quantity.

ANSWER: **number of turns** [or **number of coils**; prompt on **N**]

<Settle, Physics>

3. At age fifteen, this author began her diary with an address to Nobody before questioning, “but why, permit me to ask, must a female be made Nobody?” For 10 points each:

[H] Name this author who wrote in a “feigned hand” to anonymously publish her first novel, whose title woman enters London society and marries Lord Orville despite the scheming of her grandmother Madame Duval.

ANSWER: Frances **Burney** [or Fanny **Burney**] (The novel is *Evelina*.)

[M] Burney’s address to Nobody references the Odyssey, which this later British author claimed was actually written by a Sicilian woman. This author wrote a novel set in a utopia whose name is an anagram for the word “nowhere.”

ANSWER: Samuel **Butler** (The novel is *Erewhon*.)

[E] Burney was called the “mother of English fiction” by this author, who “ventured to guess that Anon, who wrote so many poems without signing them, was often a woman” in her essay *A Room of One’s Own*.

ANSWER: Virginia **Woolf** [or Adeline Virginia **Woolf**; or Virginia **Stephen**]

<R. Keyal, Misc. Literature>

4. This explorer followed in the footsteps of the Moor Estevanico, who disappeared in New Mexico in his search for Cibola. For 10 points each:

[M] Name this Spanish explorer who was guided by the Native American “Turk” in his quest to find Cibola, or the Seven Cities of Gold. He was the first European to see the Grand Canyon.

ANSWER: Francisco Vázquez de **Coronado**

[E] Estevanico posited that one of these communities named Hawikuh (“HA-wee-ko”) was the location of Cibola. This Spanish word also names the mud-brick houses built by Southwest tribes.

ANSWER: **pueblos**

[H] European myths about El Dorado come from accounts of these people from modern-day Colombia. These people had their king, the *zipa*, wash off gold dust in Lake Guatavita as an offering to a god of the same name.

ANSWER: **Muisca** (“MWISS-kah”) [or **Chibcha**]

<Parameswaran, World History>

5. Waters from a spring near Troizen created by this action were used to purify Orestes. For 10 points each:

[H] *Description acceptable.* Give this action that, according to Antoninus, prevented Mount Helicon from growing taller during a musical contest between the Muses and Pierides (“pee-AIR-id-ees”). This action also created the Hippocrene (“hip-oh-CREEN”) Spring.

ANSWER: **Pegasus striking the ground** with his hoof [accept any answer indicating a **step** from **Pegasus**]

[E] Pegasus’s name itself can mean “of the spring” or “sprung forth,” with the latter name referring to its birth after the beheading of this figure. Perseus slew this gorgon, whose gaze turned men to stone.

ANSWER: **Medusa**

[M] Bellerophon yoked Pegasus beside the Pirene (“py-REE-nee”), a sacred spring of this city. Sisyphus founded the Isthmian Games of this city, which Medea fled after murdering its princess Glauce (“glossy”).

ANSWER: **Corinth**

<Kulkarni, Mythology>

6. Answer the following about hippos imported from Africa, for 10 points each.

[E] This president was an ardent supporter of the so-called “Hippo Bill” to introduce hippos into America. He also had a voracious appetite for hunting, which matched well with his “bully” personality.

ANSWER: **Theodore Roosevelt** [or **Teddy Roosevelt**; prompt on **Roosevelt**]

[H] Congressman Robert Broussard argued that, in addition to solving a food crisis, hippos could be used to wipe out this invasive plant species in Louisiana. This plant has taken over 77 square miles of Lake Victoria.

ANSWER: **water hyacinth** [or **Pontederia crassipes**; prompt on **hyacinth**]

[M] In 2021, this country began a program to sterilize a group of around 100 hippos illegally imported into this country that were originally kept at Hacienda Nápoles.

ANSWER: **Colombia** [or Republic of **Colombia**] (The hippos belonged to Pablo Escobar.)

<Parameswaran, Other History>

7. Scaling relationships between properties of the impactor, target surface, and these features are crucial to estimating the surface age of astronomical bodies. For 10 points each:

[E] Name these features formed after a high-velocity object like a meteorite crashes into a body's surface.

ANSWER: impact **craters** [accept **impact basins**]

[H] Data from this NASA mission's observations of the asteroid Bennu indicate that the asteroid's surface age is much younger than the age of Bennu itself.

ANSWER: **OSIRIS-REx** [or the **Origins, Spectral Interpretation, Resource Identification, Security, Regolith Explorer** spacecraft]

[M] Analysis of Bennu's surface evolution is guided by laboratory experiments on these meteorites formed in the early Solar System. These stony meteorites have not melted or differentiated.

ANSWER: **chondrites** ("KON-drites") [accept specific types such as carbonaceous **chondrites**]

<Settle, Other Science>

8. A Harlem Renaissance poet whose first name is the name of this place wrote "Heart of a Woman" and began hosting a "Saturday Nighters Club" for Black writers in D.C. at the behest of a fellow poet. For 10 points each:

[H] Name this place. A poet's time as a principal inspired many poems titled for this place in his book *Cane*, including a "portrait" and a poem set at "dusk" that imagines an "orgy for some genius of the South."

ANSWER: **Georgia** [accept **Georgia** Douglas Johnson; accept "Portrait in **Georgia**" or "**Georgia** Dusk"]

[M] This poet included "Georgia Dusk" and "Portrait in Georgia" in his multigenre book *Cane*.

ANSWER: Jean **Toomer**

[E] "Portrait in Georgia" juxtaposes images of a beautiful woman and one of these events. Abel Meeropol wrote a song about these events, recorded by Billie Holiday, that laments, "Strange fruit hanging from the poplar trees."

ANSWER: **lynchings** [prompt on **kill**ing or **murder** or **hang**ing or **execu**tion]

<R. Keyal, Poetry>

9. Members of the Stuckist group dressed up as clowns and protest this prize's awarding outside the Tate Britain. For 10 points each:

[M] Name this annual prize awarded to the best British visual artist. Damien Hirst's *The Physical Impossibility of Death in the Mind of Someone Living* was nominated for this prize in 1992.

ANSWER: **Turner** Prize

[E] The Stuckists created a piece titled *A Dead [one of these animals] is Not Art* in response to Hirst's piece placing one of them in formaldehyde. A John Singleton Copley painting shows "Watson" being attacked by one of these animals.

ANSWER: **sharks** [accept tiger **sharks**]

[H] Despite being the audience favorite, this British-Nigerian artist was not awarded the 2004 Turner Prize. This artist's piece *Nelson's Ship in a Bottle* was commissioned for the Fourth Plinth of Trafalgar Square.

ANSWER: Yinka **Shonibare** ("YEEN-kah shoh-nih-BAH-ray")

<Parameswaran, Painting and Sculpture>

10. al-Farabi attempted to synthesize the Islamic doctrine that God created the world from nothing with this school's belief that being emanates from the One. For 10 points each:

[M] Name this school of ancient philosophy. A text known to early Islamic thinkers as *The Theology of Aristotle* was actually a paraphrase of a book from this school, *The Enneads*.

ANSWER: **Neoplatonism** [prompt on **Platonism**]

[H] This thinker applied Neoplatonic metaphysics to Christian philosophy in works like *On the Celestial Hierarchy*, which was commented on by John Scotus Eriugena ("air-YOO-juh-nuh"). This thinker explored apophatic ("app-oh-FAT-ick") theology in his treatise *On the Divine Names*.

ANSWER: Pseudo-**Dionysius** [or Saint **Dionysius** the Areopagite or Saint **Denis**; reject "Dionysus" or "Pseudo-Dionysus"]

[E] This thinker introduced to Christian philosophy the Neoplatonic idea that evil is merely the absence of good. He also wrote *The City of God* and *Confessions*.

ANSWER: Saint **Augustine**

<French, Philosophy>

11. In their 2018 analysis of myocardial infarctions, Greenwood et al. found that interactions between these two groups of individuals resulted in the lowest predicted probability of survival. For 10 points each:

[H] Identify [emphasize] *both* of these groups. A 2022 Canadian cohort study published in JAMA found the worst incidence of postoperative complications in a subgroup analysis involving interactions between these two groups.

ANSWER: **male physicians** AND **female patients** [or equivalents; accept specific types of doctors, such as **male surgeons**; prompt on **doctors** AND **patients** by asking "what kind of doctors and what kind of patients?"; prompt on **men** AND **women** by asking "men in what position and women in what position?"]

[E] Greenwood et al. demonstrated better outcomes for female patients seen at these places that employed a higher proportion of female physicians. Banco et al. found that women and Black patients who arrived at this part of the hospital with chest pain experienced longer average triage times.

ANSWER: **emergency rooms** [or **emergency departments**; accept **ERs** or **EDs**]

[M] These drugs, which lower cholesterol by inhibiting the conversion of HMG-CoA to mevalonic acid, are less often prescribed for women than men who survive myocardial infarctions.

ANSWER: **statins** [accept specific statins recognizable by their **-statin** suffix such as atorvastatin]

<Naveh-Benjamin, Biology>

12. One of these places titles a play by the "Angry Young Man" Arnold Wesker in which workers like Peter and Monique resent their ultra-capitalist boss Marango. For 10 points each:

[M] Name these places. Shelagh Delaney's ("SHEE-luh duh-LAY-nee's") *A Taste of Honey* and John Osborne's *Look Back in Anger* are typically grouped with a style of dramatic realism named for an item found in these places.

ANSWER: **kitchen** [accept **kitchen** sink or **kitchen** sink realism] (Wesker's play *The Kitchen* is set in a restaurant.)

[E] Many kitchen sink dramas, like Bill Naughton's *Alfie*, were initially written for this medium. Dylan Thomas's *Under Milk Wood* is a play for this medium, which Orson Welles used to perform "The War of the Worlds."

ANSWER: **radio** [accept **radio** play or **radio** drama; prompt on **audio** play or **audio** drama]

[H] In a move often seen as antithetical to kitchen sink realism, this playwright set each act of his comedy *Absurd Person Singular* in a different rich couple's fancy kitchen. He also wrote the trilogy *The Norman Conquests*.

ANSWER: Alan **Ayckbourn**

<Morrison, Drama>

13. Answer the following about the 19th-century pianist Teresa Carreño, whose childhood talent led Liszt to remark that “she will be one of us,” for 10 points each.

[M] Carreño attempted to open a conservatory in this home country of hers, whose largest opera theater now bears her name. Gustavo Dudamel is an alumnus of this South American country’s national music education program, *El Sistema*.

ANSWER: **Venezuela** [or Bolivarian Republic of **Venezuela**]

[H] Carreño dedicated her Opus 1, a waltz, to this first teacher of hers. This composer attempted to recreate rhythms he heard in Congo Square with his piano pieces *Bamboula* and *La Savane*.

ANSWER: Louis Moreau **Gottschalk** (“Louie muh-ROW GOT-shalk”)

[E] A 10-year-old Carreño was barely able to reach the pedals while giving a performance for this man. A speaker reads quotes from this president’s speeches in a *Portrait* by Aaron Copland.

ANSWER: Abraham **Lincoln** [accept **Lincoln Portrait**]

<Strombeck, Classical Music>

14. Answer the following about Supreme Court justices before they became justices, for 10 points each.

[M] Ray Springle wrote a series of investigative articles which revealed that this justice was a former member of the KKK. This justice from Alabama wrote the majority opinion of *Korematsu v. U.S.*

ANSWER: Hugo **Black**

[E] Prior to joining the court, Thurgood Marshall served as the NAACP chief counsel in this 1954 Supreme Court case from Kansas, which struck down school segregation.

ANSWER: **Brown v. Board of Education** [or **Brown v. Board of Education of Topeka**]

[H] Justice Felix Frankfurter had previously argued that Thomas Mooney and Warren Billings were framed for this San Francisco bombing. This bombing occurred during a parade in support of American entry into World War I.

ANSWER: **Preparedness Day** Bombing

<Suh, American History>

15. The von der Leyen Commission’s priority of a “stronger Europe” is part of this broad concept, which also includes the formation of a European Defence Fund. For 10 points each:

[H] Name this two-word concept and buzzword in EU foreign policy. The Russian invasion of Ukraine has compromised the achievement of this concept, a decreased reliance on the United States for military support.

ANSWER: **strategic autonomy**

[E] In a 2019 interview, this leader criticized the “brain death” of NATO as part of a defense of strategic autonomy. Critics have labeled this French president as soft on Russia for his attempts at dialogue with Putin.

ANSWER: Emmanuel **Macron**

[M] The EU hopes to improve strategic autonomy by subsidizing European manufacturing of these devices. Bernie Sanders opposed a 2022 bipartisan act to subsidize domestic production of these devices, which are manufactured by the firm TSMC.

ANSWER: micro**chips** [accept computer **chips**; accept **semiconductors**; accept **integrated circuits** or **ICs**; accept micro**processors**; accept **microcontrollers**; prompt on **electronics**; prompt on **computers** or **computer hardware**]

<A. Keyal, Current Events>

16. Silvan Tomkins developed a theory of behavior named for these things from his affect theory. For 10 points each:

[H] Name these deeply ingrained cognitive models. Adherence to these things may explain why many sexual interactions follow the same patterns and why many rape survivors do not recognize their experiences as rape.

ANSWER: **scripts** [accept **script** theory; accept sexual **scripts** or sexual **script** theory; accept behavioral **scripts**] (Most people's rape scripts involve a weapon and an unknown attacker outdoors, whereas most rapes are perpetrated indoors by known individuals with no weapons.)

[E] Scholars have also noted how design can pre-inscribe objects with gender scripts. For instance, Gillette has a pink-and-white "Venus" line of these objects while their otherwise-identical male counterparts are black and blue.

ANSWER: **razors**

[M] Standardizing gender scripts is also inherent to daily medications that have this goal. Gregory Pincus ran trials of medications with this aim in Caribbean test subjects who were represented in articles as cycles, not people.

ANSWER: **birth control** [or **contraception**; or hormonal **birth control** or **birth control** pills; prompt on the pill by asking "what is its function?"; reject answers mentioning IUDs, condoms, or other non-pill birth control methods] (Pincus's early research on the pill's efficacy quantified the number of pregnancies "per menstrual cycle treated" instead of the number of pregnancies per woman.)

<Karim, Social Science>

17. Conventional setups for this technique place some dispersive device in between the sample cuvette and the light source, which is often a tungsten halogen lamp. For 10 points each:

[M] Name this technique that uses the Beer–Lambert law to determine the concentration of highly conjugated compounds.

ANSWER: **UV-vis** spectroscopy [or **UV-visible** spectroscopy or **ultraviolet-visible** spectroscopy; accept **UV** spectroscopy; accept any answers with "spectrophotometry" in place of "spectroscopy"; prompt on spectrophotometry or spectroscopy]

[E] For UV-vis spectrophotometers ("spectro-fo-TOM-uh-ters"), this process is often done using nicotinic acid or potassium dichromate. This process compares the measurements made with a device to a standard reference to see if the device needs adjustments.

ANSWER: **calibration** [or **calibrating** equipment]

[H] Three different absorbance levels spanning the operational range are measured to test this property of a spectrophotometer. This property indicates how well the instrument measures absorbance at high concentration.

ANSWER: photometric **linearity**

<A. Keyal, Chemistry>

18. Answer the following about Chinese novels that satirize academics, for 10 points each.

[E] The Child oversees a re-education camp for dissidents like the Theologian in a Yan Lianke (“yan l’yen-kuh”) novel titled for this many “books.” It’s not six, but there are usually considered to be this many classic Chinese novels.

ANSWER: **four** [accept *The **Four** Books*]

[M] Qian Zhongshu’s (“ch’yen jong-shoo’s”) *Fortress Besieged* opens as the bumbling Hung-chien returns from this country with a forged PhD certificate. In a novel by Dai Sijie (“dye sudge-YEH”), two teenagers at a re-education camp read authors from this country, the current home of Gao Xingjian (“sheeng-j’yen”).

ANSWER: **France** [or **French** Republic; or République **française**] (The second novel is titled *Balzac and the Little Chinese Seamstress*.)

[H] *Fortress Besieged* was dubbed a “new” version of this sixth great Chinese classic written in vernacular by Wu Jingzi (“woo jing-dzuh”). This novel’s many vignettes espouse Confucian ideals and mock the civil service exam system.

ANSWER: *The **Scholars*** [or ***Rúlín Wàishǐ***; or *The **Unofficial History of the Scholars***]

<R. Keyal, Long Fiction>

19. Answer the following about studying the Talmud, for 10 points each.

[E] “The Talmud” usually refers to the version named for this city, in contrast to the earlier Jerusalem Talmud. The Jews were exiled to this city after Nebuchadnezzar besieged Jerusalem and destroyed the First Temple.

ANSWER: **Babylon** [or **Bavel**; accept **Babylonian** Talmud or Talmud **Bavli**; accept **Babylonian** captivity]

[M] Jewish men study the Talmud at these religious educational institutions, the largest of which is the Mir in Jerusalem. This term also names a university in New York City whose motto is “Torah and secular knowledge.”

ANSWER: **yeshivas** (“yeh-SHEE-vuhs”) [or **yeshivot**; accept **Yeshiva** University; prompt on **schools** or **colleges**]

[H] Meir Shapiro popularized a method of studying the Talmud in this manner over seven and a half years. Almost 100,000 Jews gathered in the 2020 Siyum HaShas (“see-YOOM ha-SHOSS”) at MetLife Stadium to celebrate completing that process in this manner.

ANSWER: a **page per day** [or equivalents such as reading one **page every day**; accept ***Daf Yomi***]

<A. Keyal, Religion>

20. This king pillaged the Lothian countryside during an unsuccessful campaign against Scotland known as “Burnt Candlemas.” For 10 points each:

[H] Name this English king. This king’s troops moved the Black Rood of Scotland to Durham Cathedral after humiliating David II’s troops at the Battle of Neville’s Cross.

ANSWER: **Edward III** [prompt on **Edward**]

[E] David II invaded England to assist its ally France, which was being invaded during this conflict. The English were victorious at the Battles of Crécy (“kray-SEE”) and Poitiers (“pwaht-YAY”) during this conflict.

ANSWER: **Hundred Years’** War [prompt on **Edwardian** War]

[M] During the Second Scottish war of Independence, Edward III backed a royal claimant from this family with first name Edward. Edward I appointed John, a Scottish king with this surname, at a 1292 parliament in Berwick-upon-Tweed.

ANSWER: **Balliol** (“BAY-lee-ul”) [or de **Bailleul**; accept Edward **Balliol** or John **Balliol**]

<Parameswaran, European History>